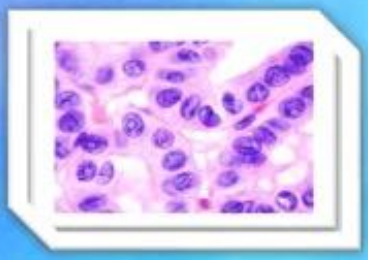
Breast, Thyroid and Lymphoma Pathology



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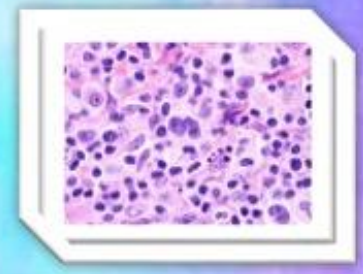
9th International Conference



PROCEEDINGS OF ICON 2024

Organized by the

College of Pathologists of Sri Lanka

& the

Sri Lankan British School of Pathology

College of Pathologists of Sri Lanka

International Conference 2024

Breast, Thyroid and Lymphoma Pathology

17th – 19th October 2024

Galle Face Hotel

Colombo, Sri Lanka

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MESSAGE FROM THE PRESIDENT

As the President of the College of Pathologists of Sri Lanka for 2024, I am honoured and delighted to extend this message on behalf of the Council. It is with great enthusiasm that we welcome you to our first physical international event since the COVID-19 pandemic and the 9th International Conference, organized jointly by the College of Pathologists of Sri Lanka and the Sri Lankan British School of Pathology.

This year's conference, focusing on breast, thyroid, and lymphoma pathology, will span three days, from October 17th to 19th, 2024. We are excited about the diverse range of topics that will be covered and the opportunity for in-depth discussions in these critical areas of pathology.

I would like to express my heartfelt gratitude to Prof. Chandu de Silva, Chair and Professor of Pathology at the Faculty of Medicine, Colombo, for graciously accepting our invitation to be the Chief Guest. A special thanks also go to Prof. Ian Ellis, Professor of Cancer Pathology at Nottingham University, UK, for being our esteemed Guest of Honour at the conference inauguration. Your presence adds immense value to our event, and we deeply appreciate your support.

I am also extremely grateful to all the local and international resource persons who have agreed to contribute their expertise to this conference. Your involvement is instrumental in advancing the professional development of pathologists in Sri Lanka and I am confident that your contributions will be greatly valued by all participants.

Our heartfelt thanks go to our Platinum, Gold, Silver and Bronze sponsors, as well as all other sponsors for their generous financial support during these challenging economic times. Your contributions have been vital to the success of this conference, and we wish you continued prosperity and success.

I would also like to extend special thanks to our dedicated secretaries, Dr. Lakmali Kariywasam and Dr. Niluka Ranathunga, as well as our conference coordinators, Dr. Avanthi Rajapaksa and Dr. Sandini Gooneratne. I am grateful to the Council and the ICON organizing committee for their unwavering commitment in bringing this event to fruition. Additionally, I want to acknowledge the efforts of our IT personnel and College administrative assistants, Asuntha Thamel and Isuri Peiris and everyone else involved in ensuring the success of this conference.

To all participants, both local and international, we extend a warm welcome. We hope you find the range of topics covered to be both enlightening and beneficial. ICON 2024 is set to be a valuable platform for sharing knowledge and experiences, and we look forward to enhancing the practice of histopathology in our region through this event.

I wish ICON 2024 great success and look forward to a productive and enlightening conference.

DR. PRIYANKA ABEYGUNASEKARA
PRESIDENT – COLLEGE OF PATHOLOGISTS OF SRI LANKA

MESSAGE FROM JOINT SECRETARIES

We are extremely honoured and privileged to share this message as the joint secretaries of the College of Pathologists of Sri Lanka for the most awaited biannual academic event International conference (ICON) organized jointly by the CPSL and Sri Lankan British School of Pathology.

This year it is the 9th international conference organized by the college, since its inception in 1975. The program includes updates on commonly encountered, rapidly evolving areas of pathology including breast, thyroid and lymphoma pathology. The scientific program will open new insights and pave the way to achieve high standards in mentioned specialties.

We are extremely thankful to British Division of International Academy of Pathology (BDIAP) resource persons and world-renowned pathologists Prof. Ian O. Ellis, Prof. Stefan Dojcinov and Dr. David Poller for their immense support and valuable time.

We are grateful to our local speakers too for their valuable contributions.

We take this opportunity to thank our dedicated and supportive president, council members and ICON coordinators together with organizing committee for the support and cooperation which they have extended to us. Further, we wish to extend our gratitude to our college members who have contributed to this event in many ways, including abstract coordinators, reviewers, editors, judges and co-chairpersons.

Further, our sincere thanks to the sponsors, without their generous contribution an event of this magnitude would not be a reality.

We sincerely hope that this event will meet the expectations and standards of our local and overseas participants.

DR. NILUKA RANATUNGA AND DR. LAKMALIE KARIYAWASAM
JOINT SECRETARIES – COLLEGE OF PATHOLOGISTS OF SRI LANKA

MESSAGE FROM CONFERENCE COORDINATORS

As Joint Conference Coordinators of this years International Conference, we are indeed honored and privileged to share this message .

This year for the 9th International Conference we have the unstinted support of the members of the College of Pathologists of Sri Lanka as well as the Sri Lanka British School of Pathology. We are grateful to the British Division of the International Academy of Pathology, who has always lent its support for the upliftment and progression of Pathology in Sri Lanka.

This is the second physical conference to be held after three years of virtual sessions . The annual conference is a very important event in the calendar of the College of Pathologists of Sri Lanka , and it is an event that we, as practicing pathologists in Sri Lanka greatly look forward to. Our goal as always is the sharing of knowledge and continuous improvement of services rendered.

Three eminent speakers from the UK will undoubtedly share their valuable knowledge and experience with us, thereby helping in enhancing our knowledge in the fields of Breast , Thyroid and Lymphoma pathology. Local speakers will also be given an opportunity to share their knowledge and experience through various discussions.

We are indebted to our President , who has paved the way for this Academic event. We are also grateful to the members of the Council , organizing committee and other members who have lent their immense support in many ways. Teamwork, dedication and selfless contributions from all have culminated in an in event of this nature.

Our heartfelt gratitude goes to all of our sponsors, who never fail to support us with their generous contributions.

We hope that this academic event, will bring us together through the process of learning, and help us quench our everlasting thirst for knowledge.

We warmly welcome one and all to ICON 2024.

DR. AVANTHI RAJAPAKSE AND DR. SANDINI GUNARATNE
CONFERENCE COORDINATORS – ICON 2024

MESSAGE FROM CHIEF GUEST

It is a privilege and pleasure to provide this message on the occasion of the 9th International conference organized by the College of Pathologists of Sri Lanka (CPSL) and the Sri Lankan British School of Pathology. My association with the annul academic sessions of the CPSL, dates back to 1997 when the academic sessions of the College recommenced after a lapse of several years, where I was a joint editor of the abstract book. Since then, I have witnessed the unfolding of the history and advancement of the quality of the annual academic sessions of the College with awe and admiration. A turning point was, when the first International Conference with the newly formed Sri Lankan British School of the British Division of the International Academy of Pathology (BDIAP) was held in 2007. I am proud of the fact that negotiations for this collaboration started in 2005 when I was President of the CPSL. I am grateful to the late Prof. Kristin Henry and late Dr. Bryan Warren, senior members of the BDIAP and Prof Dilani Lokuhetty, Prof Janaki Hewavisenthi past presidents of CPSL and Prof. Isha Premathilleka, a past secretary of CPSL for their tireless efforts to make this collaboration a success.

This year the themes of the International Conference will be thyroid, breast and lymphoid pathology. The topics are of particular significance as breast and thyroid cancers are the first two commonest cancers afflicting Sri Lankan women, thus accounting for a considerable proportion the routine workload in Sri Lankan histopathology laboratories. On the other hand, lymphoid pathology is a diagnostically challenging field which requires continuing updating of knowledge.

Annual Academic sessions is probably the kaleidoscopic benchmark academic activity of the annual calendar of any professional medical body. I am confident that delegates to this international conference will benefit greatly from the academically enriching sessions this year. I offer my best wishes for a harmonious and successful conference this year.

PROFESSOR CHANDU DE SILVA
CHAIR AND SENIOR PROFESSOR OF PATHOLOGY
FACULTY OF MEDICINE, UNIVERSITY OF COLOMBO

MESSAGE FROM GUEST OF HONOUR
PROFESSOR IAN O. ELLIS

It is a pleasure for me to be invited to participate in the 9th ICON meeting organised by the College of Pathologists of Sri Lanka and The Sri Lankan British School of Pathology. The meeting is supported by the British Division of the International Academy of Pathology (BDIAP) with whom I have a long-standing association, supporting their international educational activities. As with previous ICON meetings the program is focused on three aspects of histopathology. This year the conference deals with breast, thyroid and lymphoma pathology with a comprehensive program arranged for each subject. I would encourage all participants to engage actively in the discussion / Q&A periods as this will ensure that any burning questions, not dealt with in a presentation, are addressed, alongside providing time to clarify any of those remaining uncertainties and problems we may face in our daily practice. Please don't hesitate to ask questions. Personally, this will be my first visit to Sri Lanka, long overdue, and I am looking forward to experiencing the wonders and beauty of this fabulous country.

PROFESSOR IAN O. ELLIS
PROFESSOR OF CANCER PATHOLOGY,
DIVISION OF CANCER AND STEM CELLS
SCHOOL OF MEDICINE, NOTTINGHAM UNIVERSITY,
HONORARY CONSULTANT PATHOLOGIST
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Absent

Dr. Menaka Weerasinghe

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Dr. Prabhath Ambewatte
Head of Department
Consultant Histopathologist
Sri Jayewardenepura General Hospital

Professor Isha Prematilleke
Professor in Pathology and Consultant Histopathologist
Department of Pathology
Faculty of Medical Sciences
University of Sri Jayewardenepura

Dr. Sonali Rodrigo
Consultant Histopathologist
Sri Jayewardenepura General Hospital

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Dr. Anoma Perera
Dr. M.K.L. Manjula
Dr. Priya Amaraweera
Dr. E.P.C. Samanmalee

INTERNATIONAL CONFERENCE 2024

FACULTY OF GUEST SPEAKERS

Professor Ian O. Ellis
Professor of Cancer Pathology, Nottingham University
United Kingdom

Past Chairman of the UK National Co-ordinating Committee for Breast Pathology

Professor Stefan Dojcinov
Consultant Histopathologist
Morriston Hospital, Swansea Bay University Health Board
United Kingdom

British Lymphoma Pathology Group Chair

Dr. David Poller
Consultant Pathologist
University of Portsmouth
United Kingdom

President, UK Endocrine Pathology Society

Dr. Charisma S. Fernando
Consultant Histopathologist and Senior Lecturer
Faculty of Medical Sciences,
University of Sri Jayewardenepura
Sri Lanka

Dr. Jayanjana Asanthi
Consultant Histopathologist
Teaching Hospital Anuradhapura
Sri Lanka

Dr. Chandrani Somaratne
Consultant Histopathologist
Teaching Hospital Kurunegala
Sri Lanka

Dr. Nayana Ratnayake
Consultant Histopathologist
Teaching Hospital Kandy
Sri Lanka

Dr. Devinda Jayathilaka
Consultant Haemato-oncologist
National Cancer Institute of Sri Lanka
Sri Lanka

Dr. Priyanka Abeygunasekara
Consultant Histopathologist
National Cancer Institute of Sri Lanka
Sri Lanka

Dr. Sasikala Suresh
Consultant Haematologist
National Cancer Institute of Sri Lanka
Sri Lanka

PROGRAMME ICON 2024

DAY 1 **17th October 2024**		
07:15 – 8.00 am	**REGISTRATION AND INTRODUCTION TO THE PROGRAMME**	
Session 1 **Chairpersons**	**8:00 a.m. – 10:00 a.m.** **Professor Priyani Amaratunga** **Dr. R.C.U. Priyadarshika**	
8:00 am – 9:00 am	Benign epithelial proliferations including ER positive and ER negative precursors of malignancy in breast	Professor Ian Ellis
9:00 am – 10:00 am	Papillary lesions of the breast	Professor Ian Ellis
10:00–10:30 am	**TEA**	
Session 2 **Chairpersons**	**10:30 am – 01:15 pm** **Dr. Mihiri Madurawe** **Dr. Thushitha Somarathne**	
10:30 am – 11:15 am	Breast lesions - case based interactive session/ seminar	Dr. Charisma S. Fernando Dr. Jayanjana Asanthi
11:15 am – 12:15 pm	In-situ breast carcinoma - DCIS and LCIS – update	Professor Ian Ellis
12:15 pm – 1:15 pm	Update on thyroid entities in WHO 2022	Dr. David Poller
1:15 pm - 2:00 pm	**LUNCH**	
Session 3 **Chairpersons**	**2:00 pm – 5:00 pm** **Dr. Saumya Liyanage** **Dr. Ineesha Jayasinghe**	
2:00 pm – 3:00 pm	Update on thyroid cytology terminology systems, Bethesda, UK RCPath, Italian	Dr. David Poller
3:00 pm - 4:00 pm	Oral presentations	
4:00 pm - 5:00 pm	Diagnostic and medico legal pitfalls in thyroid histopathology and cytology	Dr. David Poller
5:00 pm - 5:15 pm	**TEA**	

DAY 2 **18th October 2024**		
7:30 am – 8:00 am	**REGISTRATION**	
Session 1 **Chairpersons**	**8:00 am – 10:00 am** **Professor Bimalka Seneviratne** **Dr. Deshani Walisinghe**	
8:00 am – 9:00 am	Risk stratification in thyroid cancer, the role of pathology	Dr. David Poller
9:00 am – 10:00 am	Molecular pathology of thyroid and its impact on diagnosis, treatment and prognosis	Dr. David Poller
10:00 – 10:30 am	**TEA**	
Session 2 **Chairpersons**	**10:30 am – 1:15 pm** **Dr. Sonali Rodrigo** **Professor Gunvati Rathod**	
10:30 am –11:15 am	Case discussion based on the latest WHO thyroid tumour classification using histological, immunohistochemical and molecular biomarkers in Sri Lanka	Dr. Nayana Ratnayake Dr. Chandrani Somaratne
11:15 am –12:15 pm	Approach to lymph node assessment (including molecular testing strategies)	Professor Stefan Dojcinov
12.15 pm – 1.15 pm	Classification of invasive breast carcinoma - update	Professor Ian Ellis
1:15 pm - 2:00 pm	**LUNCH**	
Session 3 **Chairpersons**	**2:00 pm – 5:00 pm** **Professor Gayana Mahendra** **Dr. Gayani Ranaweera**	
2:00 pm – 3:00 pm	Fibro epithelial tumours of the breast	Professor Ian Ellis
3:00 pm - 4:00 pm	WHO - HAEM5 and ICC - Comparative analysis of classification changes	Professor Stefan Dojcinov
4:00 pm - 5:00 pm	Hodgkin lymphoma and the “grey zones”	Professor Stefan Dojcinov
5:00 pm – 5:15 pm	**TEA**	

DAY 3 **19th October 2024**		
7:30 am – 08:00 am	**REGISTRATION**	
Session 1 **Chairpersons**	**8:00 am – 10:00 am** **Professor Sulochana Wijetunge** **Dr. Ruwana Ranawaka**	
8:00 am – 9:00 am	Small B-cell lymphomas	Professor Stefan Dojcinov
9:00 am – 10:00 am	Aggressive B-cell lymphomas	Professor Stefan Dojcinov
10:00 am – 10:30 am	**TEA**	
Session 2 **Chairpersons**	**10:30 am. – 1:30 p.m.** **Dr. Mangala Bopagoda** **Dr. Ahilan Sinnathurai**	
10:30 am – 11:30 am	Multidisciplinary approach for diagnosis and management of haematological malignancies in Sri Lanka – case-based discussion	Dr. Sasikala Suresh Dr. Priyanka Abeygunasekara Dr. Devinda Jayatilaka Dr. Thilini Dissanayake
11:30 am – 12:30 pm	Peripheral T-cell lymphomas	Professor Stefan Dojcinov
12.30 pm – 1.30 pm	Macroscopic handling and microscopic reporting of breast specimens-guidelines with reference to the ICCR dataset	Professor Ian Ellis
1:30 pm - 2:15 pm	**LUNCH**	
Session 3 **Chairpersons**	**2:15 pm – 4:15 pm** **Professor Dulani Beneragama** **Dr . Harshima Wijesinghe**	
2:15 pm – 3:15 pm	Slide seminar on breast pathology	Professor Ian Ellis
3:15 pm - 4:15 pm	Practical integrated approach to lymphoma diagnosis: Case based studies	Professor Stefan Dojcinov
4:15 pm – 5:15 pm	**CLOSING REMARKS AND TEA**	

ABSTRACTS

OF

RESEARCH PAPERS

LIST OF ABSTRACTS – RESEARCH PAPERS

No	Title	Author
RP 01	Assessment of tumor infiltrating lymphocytes by a web-based image analysis method	A.K. Adhya M. K. D. Biswas S. Mitra S. Purkait M. Sethy
RP 02	Tall cell subtype of papillary carcinoma thyroid; a clinicopathological analysis of 18 cases	A.KAdhya T. Parida S. Purkait M. N. Sable P. Mishra P. Ayannar M. Sethy
RP 03	Audit on reporting of thyroid cancers at a tertiary centre	T.Arudselvan HD Wijesinghe
RP 04	Overexpression of p16 protein in a cohort of Sri Lankan patients with cervical cancer	L.H.L.C. De Silva A. Senevirathne B.E. Roshan R.M.P. Rathnayake
RP 05	Complete audit cycle on laboratory handling and reporting of transurethral resection of prostate: a quality improvement activity	L. J. De Silva W.B.N. Perera L.S.D. De Silva H.D. Wijesinghe A.A.H. Priyani
RP 06	An audit of colorectal cancer reporting standards in a Sri Lankan tertiary care setting	K. Dharani B A G G Mahendra S J De S Hewavisenthi
RP 07	Comparion of pathological features between ≤40 years and >40 years women with breast carcinoma at a tertiary care centre in Sri Lanka	D. S. Gamlaksha H. D. Wijesinghe S. De Silva M.M.A. Jayawickrama M.V.C. De Silva
RP 08	Diagnosis of lymphoma; Does submission to a tertiary referral centre provide a more accurate and clinically relevant diagnosis?	B. Y. Hettiarachchi C. M. Baranasuriya H. D. Wijesinghe M. V. C. de Silva
RP 09	Evaluation of the completeness and quality of histopathology reporting of colorectal cancer resection specimens in a Sri Lankan tertiary care setting	D.T.T. Jayasinghe N.G.P. M. Nanayakkara S.M. Fernandopulle
RP 10	An interventional study assessing the impact of pain relief during fine needle aspiration cytology on the procedure and quality of cytological smears	T.M.A.H. Jayathilake S.M. Fernandopulle S. J. De S Hewavisenthi
RP 11	Assessment of public awareness of histopathology services in the North Colombo Teaching Hospital	P. G. S. P Karunarathne D. Madubhashani R. Medagoda O. M. L. E. Thilakaratne B. A. G. G. Mahendra S. J. de. S. Hewavisenthi
RP 12	Colorectal carcinomas with a mucinous component and its association with TNM stage	E. W. Kosgallana. S. Wijetunge S. L. Malaviarachchi. G. S. S. Hegoda I. V. Prematilleke
RP 13	Descriptive analysis of post-transplant liver biopsies in a recently established liver transplant centre	J. D. S. Manoharee R.D.Madubhashani S. J. de. S. Hewavisenthi T.P.M. Bopagoda S.K. Liyanage

RP 14	Determining factors associated with lymph node yield in colorectal cancer: a study in a specialized colorectal cancer centre in Sri Lanka	N.G.P.M Nanayakkara N.G.S.S Nanayakkara B.A.G.G Mahendra S.J.De.S Hewavisenthi
RP 15	Prognostic significance of categorizing lymphovascular invasion as nodal stage N1 in colorectal cancer	N.G.P.M Nanayakkara M.C.R Rahumath D.S Ediriweera B.A.G.G Mahendra S. J. De S Hewavisenthi S.K Kumarage P.C Chandrasinghe
RP 16	Identifying prognostic factors and independent risk factors in colorectal cancer; a comprehensive analysis of survival outcomes	N.G.P.M. Nanayakkara M.C.R.Rahumath S.M.N.Hansaine D.S. Ediriweera B.A.G.G. Mahendra S.J. De S Hewavisenthi S.K. Kumarage P.C. Chandrasinghe
RP 17	Improving the histopathology turnaround time at Lady Ridgeway Hospital for children	K. A. H. Piyatissa G. E. Ganhewa N. Senadheera S. A. Gunaratne
RP 18	Placental pathology contributing to adverse foetal outcome; experience in a tertiary care centre	A.A.H Priyani, C. Karunathilake G.G. Ranaweera H.D Wijesinghe M.V.C de Silva
RP 20	Macroscopic placental parameters of healthy, term newborns delivered to healthy mothers in a tertiary care centre in Sri Lanka: is it high time to develop our own placental charts?	G.G. Ranaweera A.K.P. Ranaweera W. D. S. Marious D. Abhayasundara A.A.H. Priyani
RP 21	Introduction of the “Grid-seal”; a simple device to make the life of the Histopathologist easier	G.G Ranaweera
RP 22	Postgraduate trainees’ perception of the impact of a web-based histopathology reporting system on their training: a single-centre experience	S. Sanchayan B.A.G.G Mahendra D. Ediriweera G. Hettiarachchi S. K. Liyanage M. Bopagoda M. Chandratilake S. J. de S. Hewavisenthi
RP 23	Outcomes of patients with mycosis fungoides managed at the National Hospital Kandy; a descriptive cross-sectional study	A.Senevirathne P. Ratnayaka S.M.I Senevirathne M.A.G.N Gunathilaka
RP 24	Efficacy of modified papanicolaou staining method used in a Sri Lankan government sector laboratory: a cost-effective method for resource limited settings	A. H. M. Sewwandi E.H. Silva C. Senerath
RP 25	An analysis of glomerular diseases in children with haematuria undergoing biopsy at a paediatric renal referral centre	H. R. S. D. Sumanasekara S. Thalgahagoda S. Wijetunge
RP 26	Significance of karyorrhexis in children with post-infectious glomerulonephritis	H. R. S. D. Sumanasekara S. Thalgahagoda S. Wijetunge
RP 27	Commencement and optimization of HER2 DISH method for accurate breast cancer diagnosis	M.U.G.P Weerasinghe N.J.Asanthi M.P.G.N.S Jayawardhana S.B.K. Herath C.P. Kodithuwakku V.C. Bandaranayake

RP 01 : Assessment of tumor infiltrating lymphocytes by a web-based image analysis method

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Introduction and objectives: Assessment of tumor-infiltrating lymphocytes (TILs) is an established prognostic marker for many cancers. We aimed to evaluate the utility of a web-based image analysis method for enumerating TILs.

Methodology: Forty tumour blocks of oral squamous cell carcinoma were chosen, and immunohistochemistry (IHC) for CD3, CD8, CD4, and FOXP3 were performed on the tumour sections of each case. Whole sections of the tumour were used for analysis. Images of the IHC stained slides were captured at 200X from each slide. Images were analysed using FIJI / Image J software from NIH downloaded from the website https://imajej.nih.gov. Particle sizes of 8-10 microns were measured, and a positive area fraction was calculated. The final positive area fraction of each IHC stained slide was calculated using the mean of the values of the ten images for each slide. The positive area fraction/ case of each IHC stained slide was converted into a percentage scale for statistical analysis.

Results: The average time taken to assess TILs by the web-based image analysis method for one slide was one minute. Different IHC patterns; membranous(CD4), cytoplasmic (CD3, CD8) and nuclear (FoxP3) could be satisfactorily analysed. The data obtained by the web-based image analysis was in concordance with the data obtained by the visual assessment (eyeballing) method.
Discussion and conclusions: The web-based image analysis software does not require high storage capacity and can be run on routine office desktops or laptops, unlike the whole slide imaging digital slide scanners. It is cost-effective, easy to perform and brings more objectivity to the assessment as compared to visual counting.

Keywords: tumor infiltrating lymphocytes, image analysis

RP 02 : Tall cell subtype of papillary carcinoma thyroid; a clinicopathological analysis of 18 cases

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Introduction and objectives: The tall cell subtype of the papillary carcinoma of the thyroid (TC-PTC), as per the WHO classification of thyroid tumours, 5th edition, is defined as a tumour with more than 30% of cells being three times tall as wide. In this study, we reviewed the clinico-pathological features of 18 cases of TC-PTC and studied their treatment response and outcome.

Methodology: All the cases of TC-PTC diagnosed between 2021-2024 were retrieved from the archives. The slides were reviewed by two pathologists and the diagnosis was confirmed. The clinico-pathological data, treatment data and follow-up data were obtained from the patient files.

Results: Eighteen cases of TC-PTC were found, accounting for 10.3 % of all PTCs and 5.5 % of all thyroid tumours. The age ranged from 27 - 77 years with a median age of 41.5 years. The female:male ratio was 14 :4. The tumor size varied from 0.3 to 9.5 cm. Lymphovascular invasion was found in eight cases. Perineural invasion was not seen in any of them. Fifteen cases showed lymph node metastasis. The number of lymph nodes involved ranged from 5-68 (mean 19.8). Extranodal invasion was present in five. The tumour stages at presentation were stage 1 (n=2), stage 2 (n=5), stage 3 (n=8), and stage 4 (n=3). The patients underwent total thyroidectomy (n=16), subtotal thyroidectomy (n=1) and hemi-thyroidectomy (n=1) with neck dissection and radiotherapy. Seven patients had died within two years of diagnosis and 11 were alive.

Discussion and conclusions:, In comparison to the conventional PTC, TC-PTC showed a higher age at presentation, female preponderance, a higher incidence of lymphatic invasion and lymph nodal metastasis and a higher stage at presentation accounting for the poorer overall prognosis.

Keywords: papillary carcinoma, thyroid, tall cell

RP 03 : Audit on reporting of thyroid cancers at a tertiary centre

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Introduction and objectives: The Royal College of Pathologists (RCPath) guideline for reporting thyroid cancers was updated in August 2023 following revisions to the World Health Organization (WHO) classification of thyroid tumours in 2022. The objectives of this audit were to assess the adequacy of histology reports of excision specimens of thyroid cancers according to the updated RCPath dataset and to assess the usage of new terminologies for final diagnosis according to the latest WHO classification of tumours.

Methodology: Thyroid excision specimens reported at the centre from 01.09.2023-30.04.2024 were included in the audit. The standards for the assessment were (1) a structured template should be used in 95% of reports, (2) all core data items should be included in 95% of the reports and (3) final histopathological diagnoses must be given according to the WHO classification of thyroid diseases 2022 in 100%.

Results: A structured dataset was used in all thyroid cancers (n=33, 100%). None of the reports contained a full set of core data items. The tumour grade was not mentioned in any of the reports. Tumour encapsulation, capsular invasion, mitotic count and presence of necrosis were documented in 45.4%, 39.3%, 75.7% and 72.7% respectively. The documentation of these items improved with time. All tumours were categorised correctly according to the latest WHO classification of tumours.

Discussion and conclusion: The reporting of new core items introduced in the 2023 RCPath dataset for thyroid cancer was suboptimal. This may be due to the time taken to adapt to the latest RCPath dataset and WHO Classification of Tumours. An updated structured reporting template was developed according to the RCPath dataset for the histopathological reporting of thyroid cancer, August 2023 to overcome these deficiencies.

Keywords: thyroid malignancies, core data items, dataset, audit

RP 04 : Overexpression of p16 protein in a cohort of Sri Lankan patients with cervical cancer

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Introduction and objectives: p16 protein is recognised as a surrogate marker of human papillomavirus (HPV) infection (sensitivity = 90%). According to worldwide data, HPV infection has > 90% involvement in the pathogenesis of cervical carcinoma. The aetiology of non-HPV-associated squamous cell carcinoma in Sri Lanka is yet to be investigated. Positive staining of p16 or overexpression ("block" staining - strong nuclear and cytoplasmic expression in a continuous segment in squamous epithelium, involving basal and parabasal layers) correlates with oncogenic HPV infection. Cytoplasmic-only staining, diffuse blush/weak intensity staining, and other focal/patchy patterns of staining are considered negative. The aim of the study was to evaluate the presence of p16 positivity in a cohort of cervical squamous cell carcinoma and determine how it differs from the worldwide data.

Methodology: Data were extracted from archives retrospectively for three years from 01.01.2021 to 31.12.2023. Sections from formalin fixed paraffin embedded blocks, of cases of squamous cell carcinoma of cervix were immunohistochemically assessed for p16 expression. Cases with negative p16 controls and controls with positivity other than block positivity were excluded.

Results: Forty-eight (48) patients with cervical carcinoma were analysed. The age ranged from 50 years to 80 years (mean age 63 years). Thirty five of 48 specimens showed block positivity for p16 (72%).

Conclusion: 72% of cervical carcinomas studied showed p16 overexpression. This is relatively a low percentage when compared with worldwide data. Thus, there is a significant proportion of cervical carcinoma for which the exact aetiology is unknown. A future study with a larger sample size and patients from different provinces is needed to get a better understanding regarding the overexpression of p16 in cervical carcinoma in the Sri Lankan population.

Keywords: cervical carcinoma, p16, Sri Lanka

RP 05 : Complete audit cycle on laboratory handling and reporting of transurethral resection of prostate: a quality improvement activity

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Introduction and objectives: Histological evaluation of transurethral resection of prostate (TURP) specimens is clearly described in Royal College of Pathologists (RCPath) dataset which is used as the guideline for reporting prostate tissue in our department. This audit cycle was aimed to identify gaps in TURP reporting if any, and to take necessary measures to rectify and to monitor quality improvement through interventions.

Methodology: The initial audit was done on six months of data collected in 2021, following which a proforma was developed to streamline reporting and address the deficiencies identified in gross handling and microscopic reporting. A re-audit was conducted six months after implementing the proforma. Core data items listed in the RCPath dataset for reporting prostate tissue were used as standards.

Results: A total of 112 and 111 specimens were included in the initial and re-audit respectively. The majority (78.6%,n=88 and 77.5%,n=86) were benign. Type of specimen, tumour type and percentage of the tumour were reported in all cases achieving 100% target in both instances. A significant improvement was observed in providing prostate specific antigen level (36.6% to 67.7%), macroscopic weight (78.6% to 97.3%), Gleason sum score (66.7% to 96%) and grade group (91.7% to 100%).

Discussion and conclusion: Overall, the reporting of TURP specimens was satisfactory. Compared to the baseline findings of the initial audit, improvements were identified in all three (clinical, gross and microscopic) aspects of the audit, although interventions were not implemented targeting the clinical aspects. This audit cycle clearly demonstrates the importance of continuous auditing and interventions to achieve the best quality histopathology service.

Keywords: prostate, transurethral resection, quality improvement

RP 06 : An audit of colorectal cancer reporting standards in a Sri Lankan tertiary care setting

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Introduction and objective: Audits are required to ensure that standards of reporting cancers including colorectal carcinoma (CRC) are maintained, as the histopathology report is essential for the further management of the patient. The objective was to audit the compliance of histopathology reports of CRC specimens with quality standards set by the Royal College of Pathologists UK(RCP).

Methodology: Seventy-two reports of CRC resection specimens from January 2022 to December 2023, from the Department of Pathology of the Faculty of Medicine Ragama, University of Kelaniya, were evaluated against the quality standards set by RCP (April 2023) with regard to lymph node retrieval, peritoneal involvement and lymphovascular invasion and with the National Guidelines in Histopathology (2021).

Results: Of the 72 reports audited, 16 were rectal tumours, of which 14 were entirely above the anterior peritoneal reflection. There was an average lymph node yield of 19 nodes per resection, surpassing the RCP standards. Peritoneal involvement, a critical prognostic factor, was observed in 21.42% (12/56) of colonic tumours, also meeting the recommended standards. However, the study reveals shortcomings in reporting lymphovascular invasion, which was reported in only 22% (16/72), with only around two-thirds (10/16) specifying intramural or extramural invasion. The differentiation between venous and lymphatic invasion also remained deficient.

Discussion and conclusion: The histopathology reporting meets the RCP standards in most areas. However, there are deficiencies in reporting venous invasion, identifying whether invasion is venous or lymphatic and stating the level of such invasion. Increasing the number of tumour blocks, tangential sectioning of the peritumoral mesocolic/mesorectal fat and ancillary techniques such as elastin stains and immunohistochemistry can improve the reporting of these parameters. Implementing these measures will improve the standards of CRC reporting. The establishment of national guidelines with respect to quality standards for audit is recommended.

Keywords: colorectal carcinoma, reporting, quality standards

RP 07: Comparion of pathological features between ≤40 years and >40 years women with breast carcinoma at a tertiary care centre in Sri Lanka

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Introduction and objectives: Studies investigating features of breast carcinoma (BCa) in young women in Sri Lanka are limited. We describe and compare the pathological characteristics of BCa in a cohort of Sri Lankan women ≤40 and >40 years of age.

Methodology: This descriptive cross-sectional study includes BCa (wide local excisions and mastectomies) reported at the National Hospital of Sri Lanka from 2014 to 2018. Clinical details, invasive tumour size, tumour T stage and lymph node status were extracted from histopathology reports. The haematoxylin and eosin-stained slides and immunohistochemistry slides of all cases were reviewed to determine tumour type, Nottingham grade(NG), three tier categorization of ductal carcinoma in-situ (DCIS), stromal percentage, nature of the stroma (myxoid or desmoplastic), percentage of necrosis, percentage of tumour infiltrating lymphocytes and ki 67 index. The presence of vascular invasion, perineural invasion (LVSI), lobular carcinoma in-situ, lobular cancerization, hormone receptor and HER 2 status were also assessed. Mann-Whitney, Pearson's chi-square and Fisher exact tests were used to statistically compare the pathological features between both age groups using SPSS 23.0

Results: Data was collected from 411 patients (99 ≤ 40 years; 312 > 40 years). Aggressive pathological features (high NG, LVSI, high grade DCIS, lobular cancerization, ki 67 index >14%, triple negativity and high Nottingham prognostic index (NPI)) were more frequent in the ≤40-year age group. There was a statistically significant association between the younger age category and low stromal percentage (p=0.007), high grade DCIS (p=0.001), lobular cancerization (p<0.001) and poorer NPI (p= 0.04).

Discussion and conclusions: BCa in young women in Sri Lanka showed aggressive pathological characteristics and was associated with poor prognostic indicators.

Keywords: breast carcinoma, young, pathological characteristics

RP 08: Diagnosis of lymphoma; Does submission to a tertiary referral centre provide a more accurate and clinically relevant diagnosis?

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Introduction and objectives: The Centre for Diagnosis and Research in Cancer(CeDARC) receives a high number of referrals of lymphoid neoplasms (LyN) from hospitals all around Sri Lanka. The objective was to evaluate the diagnostic accuracy at CeDARC compared to external referrals received in 2022 and 2023.

Methodology: All LyNs diagnosed at CeDARC from January 2022 to December 2023 were reviewed in order to further categorise the subtypes of lymphoma and determine the discordance (major [MD] or minor [mD]) in diagnosis between the referring pathologist (RP) and CeDARC. MD was defined as a change in diagnosis that would influence the clinical management. Cases with MD were analysed further.

Results: Seventy-two [mean age 51.10 years (s=21.459), 55-lymph node, 2-mediastinum, 15-extra-nodal] cases were included [55 cases of non-Hodgkin lymphoma (NHL) (41-B cell lymphomas (BCL), 14-T cell lymphomas (TCL)]; 17 cases of Hodgkin lymphoma (HL) (13-classic HL, 4-nodular lymphocyte predominant HL)]. The commonest types of BCL diagnosed were diffuse large BCL (20/41;48.7%), follicular lymphoma (5/41,12.1%) and marginal zone lymphoma (4/41,9.7%). Peripheral TCL (4/14,28.5%) and acute T lymphoblastic lymphoma/leukaemia (4/14,28.5%) were the commonest TCL. Of the 52 cases referred from external centres, RPs diagnosis was available in (43/52,82.6%). The overall discordance rate(DR) was 39.5% (17/43) of which all showed MD. Both initial and final diagnoses of a malignant, but a different entity in 16 cases (16/43;37.2%). The diagnosis changed from a benign entity to malignant in one case(1/43;2.3%). The diagnosis changed from HL to NHL in four cases (4/43;9.3%), BCL to TCL in two cases (2/43;4.6%) and non-LyN to LyN in three cases (3/43;6.9%) A total of 79 IHC tests were done on LyN cases with an average of six tests per case.

Discussion and conclusion: The DR and the utilisation of IHC are high for LyN. Therefore, expanding IHC facilities in the country and referring cases of LyN to cancer referral centres for second opinion is advocated.

Keywords: lymphoid neoplasms, non-Hodgkin lymphoma, major discordance

RP 09: Evaluation of the completeness and quality of histopathology reporting of colorectal cancer resection specimens in a Sri Lankan tertiary care setting

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Introduction and objective: A comprehensive histopathology report is essential for the management and prognosis of colorectal cancer (CRC). This study assesses the completeness of CRC histopathology reports, summarises key statistical data, and compares the findings with 2023 Royal College of Pathologists (RCPath) CRC audit standards.

Methodology: This descriptive cross-sectional study retrospectively evaluated twenty-eight reports of CRC resections with no history of neoadjuvant therapy, issued by the Department of Histopathology, Colombo North Teaching Hospital, from January 2023 to May 2024, using the April 2023 "Dataset for Histopathological Reporting of Colorectal Cancer" standards.

Results: Twenty-six items were assessed, and the overall completeness of reporting was 94.79%. The least reported items were maximum distance of tumour invasion beyond muscularis propria, distance from carcinoma to circumferential resection margin, and site of deepest lymphovascular invasion and perineural invasion. Descriptive statistics revealed a mean age of 63 years(IQR 55-68 year). 19/28 (67.85%) of cases were pT3, 15/28 (53.57%) were pN0. According to CRC audit standards there was a mean of lymph node yield (LNY) of 20, peritoneal involvement was present in 4/28 (14.28%) and venous invasion in 3/25 (12%)

Discussion and conclusion: The sample size was insufficient to comment on specific 2023 RCPath CRC audit standards. However, the median LNY was achieved, while the other two standards(peritoneal involvement and venous invasion) were not yet achieved in our setting. The completeness of the reporting was satisfactory. A re-audit will be conducted with a larger sample size to assess RCPath 2023 specific audit standards.

Keywords: colorectal cancer, audit, specific audit standards

RP 10: An interventional study assessing the impact of pain relief during fine needle aspiration cytology on the procedure and quality of cytological smears

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Introduction and objectives: Although fine needle aspiration (FNA) of thyroid is a minimally invasive procedure, patients often request pain relief. The objective was to assess the efficacy of pain relief by local anaesthetic agent infiltration during FNA of thyroid and asses if the was any difference in the adequacy of the cell yield and quality of smears in patients with adequate pain relief (intervention group-IG)) and with no pain relief (comparison group-CG).

Methodology: An interventional study was performed on 139 patients undergoing FNA (non- aspiration) of thyroid at the Teaching Hospital, Ragama. Seventy patients in the IG received a subcutaneous injection of lignocaine with adrenaline from an insulin syringe. The CG of 69 patients received no pain relief. Quantitative pain assessment was performed using a visual analog scale, numeric rating scale and verbal rating scale. The cell yield was classified as adequate/not adequate based on Bethesda criteria (2017). The quality of smears was assessed based on the amount of background haemorrhage as Grades 1-3 (1-<50%, 2->50% and 3-completely obscured by haemorrhage). Pearson chi Square test was used to assess the difference between the two groups.

Results: There was a significant difference in the perception of pain between the two groups using all three assessment methods ($p < 0.0001$) and the majority of IG found the procedure tolerable. There was no impact on the adequacy of the cell yield ($p=0.574$) or the presence of background haemorrhage ($p=0.531$).

Conclusion: The study shows that pain relief reduces the anxiety among patients during FNA of thyroid and that it does not influence the cell yield or quality of the cytological smears.

Keywords: FNA thyroid, pain relief, lignocaine with adrenaline, smear quality

RP 11: Assessment of public awareness of histopathology services in the North Colombo Teaching Hospital

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Introduction and objective: Histopathology is eclipsed by other clinical fields and the public is often unaware of the process of histopathological diagnosis and its crucial role in managing diseases. This study aimed to assess the above.

Methodology: Basic knowledge of the histopathological diagnostic process, the importance of the report, and the action to be taken following receipt of the report were assessed via an interviewer-administered questionnaire to the patients and their relatives within the hospital.

Results: The study sample included 100 participants: 39% males, and 61% females (age range 15-76). 90% were educated at least, up to the GCE-ordinary level. 57% of participants knew the basics of histopathological processes. 57% knew who examined the pathology samples and 60% knew where they were examined. 52% were aware of the basic equipment used. 38% were aware of the time taken to obtain a report. 44% were aware of the rapid methods of histological examination. 82% appreciated the significance of their report and its role in disease management. They were keen to collect the report (82%), show it to the clinician early (88%) and preserve the report for life (64%). 82% desired meeting a histopathology-related doctor and 52% thought this would help them to understand their disease better.

Discussion and conclusion: The majority of the public was aware of the significance of the histopathology report. However, a considerable proportion lacked an understanding of some aspects of histopathological processes (e.g. time taken for issue of reports). It was interesting that most of the participants were keen to meet a histopathologist. This would be a possible opportunity for histopathologists to highlight their role and enhance public awareness of histopathology services.

Keywords: histopathology services, awareness public

RP 12 : Colorectal carcinomas with a mucinous component and its association with TNM stage

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Introduction and objectives: The World Health Organization defines colorectal carcinoma (CRC) as mucinous if >50% of the tumour area comprises extracellular mucin pools. Tumours with >10% but <50 % mucin are termed adenocarcinoma with a mucinous component. This 50% cut-off point has been questioned by previous studies. This study analyses the association of mucin percentage with local tumour extent, nodal involvement and distant metastasis.

Method: A population of neoadjuvant naïve CRCs selected consecutively from four tertiary care centres in Sri Lanka and referred to involved researchers from January 2022 to December 2023 were evaluated for the percentage of mucin. This was determined by eyeball estimation of the entire tumour by the reporting consultant pathologist, and histology of each case was re-examined for accuracy by the first author and at least one of the two pathologists. Stage (tumour extent, nodal involvement, and distant metastasis) was determined according to AJCC 8th edition. Fisher's exact test, Kendall's tau b and Mann-Whitney-U test were used for analysis.

Results: Of 96 cases, 21 showed the presence of mucin. Mucin percentage showed a significant positive association with T stage (τb=0.264, p=0.004) but not with nodal involvement (U=946, p=0.220) or distant metastasis (U=438, p=0.545). Eleven cases were of mucinous type (>50% mucin), and these did not show a significant association with T (U=321, p=0.060), N (ϕ=0.192 p=0.096) or M (ϕ=0.049, p=0.646) stage. In carcinomas containing less than 50% mucin, the mucin percentage had a significant positive association with T stage (τb=0.208, p=0.038). In carcinomas with more than 50% mucin this was not seen (τb=0.501, p=0.076), as all were stage T 3/4.

Discussion and conclusions: T stage rose significantly with the percentage of mucin in CRC, but not in those with >50% mucin (mucinous type). Therefore, reporting the presence of the percentage of mucin in CRC (as a continuum) in those with < 50% mucin may be an important prognostic parameter.

Keywords: colon cancer, adenocarcinoma with a mucinous component, tumour staging

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RP 13 : Descriptive analysis of post-transplant liver biopsies in a recently established liver transplant centre

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Introduction and objective : The Colombo North Centre of Liver Disease (CNCLD) was established in 2021 with a dedicated liver transplant hospital undertaking both live and cadaveric donor transplants. The objective of the study was to document the demographic characteristics of Sri Lankan transplant patients at the CNCLD and obtain a baseline audit of all post-transplant liver biopsies.

Methodology : All post-transplant liver biopsies reported by the Department of Pathology, Faculty of Medicine which is a part of the CNCLD were audited for the period from 2021 to May 2024. Details of age, sex, indication for liver biopsy, time period following transplant, and the histological diagnosis were obtained.

Results : The patients' age ranged from 1- 61 years (median 12 years). The female:male ratio was 16:15(1: 1.06). The annual number and percentage of post-transplant biopsies was 7/140 (5%), 11/158 (6.96%), 8/223 (3.58%) and 5/74 (6.75%) in 2021, 2022, 2023 and up to May 2024 respectively. Indications for biopsy included elevated liver enzymes, high bilirubin levels, and remission assessment after pulse therapy. The time period following transplant ranged from one day to four years. 18/31(58%) revealed acute rejection. 2/31 (6.4%) showed both acute and chronic rejection. 4/31(12.9% showed no evidence of rejection. 5/31(16.1%) showed other miscellaneous findings (ischemic/hepatitic/cholestatic pattern of injury) and 2/31(6.4%) had features suspicious of recurrence of the original disease with acute rejection. Most biopsies showed a moderate degree of acute rejection.

Discussion and conclusion: The number of transplant-related biopsies showed an increase over three years contributing to a larger proportion of the total biopsies. The main indication was the assessment of transplant rejection, and the commonest diagnosis was acute rejection.

Keywords: post-transplant liver biopsies, transplant centre, audit

RP 14 : Determining factors associated with lymph node yield in colorectal cancer: a study in a specialized colorectal cancer centre in Sri Lanka

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Introduction and objectives: Lymph node yield (LNY) is crucial for treatment optimization and prognosis in colorectal cancer (CRC). This study aims to analyse the association between LNY and the factors related to tumour and patient characteristics in a cohort of Sri Lankan patients.

Methodology: 165 histopathology reports of CRC reported at the Department of Pathology, Faculty of Medicine, University of Kelaniya were analysed in a cross-sectional analytical study. The association between the LNY (dependent variable) and independent variables including age, sex, bowel length, location, tumour size, differentiation, lymphovascular invasion (LVI), T-classification and N-classification was determined using the Person's Chi-square test (significant level $p<0.05$).

Results: 98/165 (59.4%) were females. The median age was 64 years (IQR: 53-71). 87/165 (52.72%) and 52/165 (31.51%) were left and right colon tumours respectively. The mean LNY was 21(median 19) (right colon-24 and left colon–19). The results of the chi-square test were as follows; age>64 year ($p = 0.0082$), sex ($p = 0.5423$), bowel length>200mm ($p = 0.00003$), right-sided tumours ($p = 0.0352$), tumour size>48mm ($p = 0.0199$), tumour differentiation ($p = 0.8613$), LVI ($p = 0.4870$), T-stage ($p = 0.0038$) and N-stage ($p = 0.7716$)

Discussion and conclusion: There was a significant association between LNY and patient age, longer bowel length, right-sided location, larger tumour size and higher T-stage. The sex, differentiation and N-stage did not show a significant association. International guidelines have recommended an overall minimum number of lymph nodes to be retrieved in a CRC resection. However, it is necessary to consider the above factors when attempting to achieve this optimum number.

Keywords: lymph node yield, colorectal cancer, determinants of LNY, optimum LN retrieval

RP 15 : Prognostic significance of categorizing lymphovascular invasion as nodal stage N1 in colorectal cancer

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Introduction and objectives: The current concept is that positive nodal metastases indicate lymphovascular invasion (LVI) in colorectal carcinoma (CRC). The reverse situation has not been investigated. This study aims to analyse the prognostic significance of categorizing LVI-positive nodal negative cases as stage N1.

Methodology: The nodal stage, LVI status, and time since surgery to the last follow-up/death were obtained from the CRC database in patients undergoing surgical resection from January 2013 to May 2019, with follow-up until May 2024. Cox proportional-hazard models were used to identify features associated with survival. LVI-positive, N0 cases were transferred to N1 stage, establishing a new model (NM) for statistical analysis for comparison with the existing model prior to transfer i.e. the traditional model(TM).

Results: Of 137 participants, 41(29.93%) were LVI positive. Nodal stages were N0-65, N1-51, N2-21. Of the 96 LVI negative cases, 53 were in N0 stage and 43 were nodal positive. Among 41 LVI positive cases, 29 had nodal metastasis, while 12 did not. These 12 cases were transferred to N1. Hazard ratio for overall survival (HR) for LVI in TM was 3.094(95%CI, 1.782-5.372,p<0.0001) compared to 2.706(95%CI, 1.537-4.764,p=0.0006) in NM. HRs for N stage in the TM and the NM were 1.545(95%CI, 1.062-2.247,p=0.0229) and 1.760(95%CI, 1.169-2.648,p=0.0068), respectively. Transferring LVI positives changed the N stage coefficient p-value from 0.0229 to 0.006753 (Wald test) and increased concordance from 0.725 to 0.726 in NM.

Discussion and conclusions: The NM has better model evaluation parameters than TM. Transferring LVI positives from N0 to N1 improved prognosis accuracy, highlighting LVI as a predictive marker. This suggests investigating possible stage migration from N0 to N1, in N0 cases with positive LVI in a larger cohort.

Keywords: colorectal cancer, LVI, N stage migration, survival analysis

RP 16: Identifying prognostic factors and independent risk factors in colorectal cancer; a comprehensive analysis of survival outcomes

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Introduction and objective: Establishing factors influencing the overall survival is crucial for improving prognostication and treatment in colorectal cancer(CRC). This study aims to identify key prognostic factors and independent risk factors in CRC by analyzing survival outcomes.

Methodology: CRC patients undergoing surgical resection from January 2013 to May 2019 and followed up until May 2024 were studied. Details of age, sex, tumor differentiation(TD), T stage, N stage, LN positivity (LNP), lymphovascular invasion and time since surgery to last follow-up/death were collected. Survival rates were estimated using Kaplan-Meier curves and the Log-rank test(LRT), the level of significance being p<0.05. Cox proportional-hazard models identified survival-associated features, with forward variable selection determined by the log-likelihood ratio test.

Results: Of the 137 participants, 54 (39.42%) were males. Median age was 61(IQR: 52-68). Thirty four of 58 deaths were caused by CRC. The overall 5-year-survival(OS) rate was 60.4%(95%CI, 52.5%-69.5%), and the corresponding disease-specific survival(DSS) rate was 72.2% (95%CI, 64.5%-80.8%). LRT showed that LVI (p < 0.0001), N0-N1-N2 stage (p=0.022, p=0.051), LNP(p = 0.0026, TD(p=0.0003), T4 Stage (p=0.047) indicated a difference in OS. Results of forward selection showed that a model with LVI, age, and N stage was the best to explain OS. The hazard ratios were: LVI =3.094 (95% CI,1.782-5.372, p<0.0001), age=1.029 (95% CI,1.005-1.054, p=0.0173), and N stage =1.545 (95% CI,1.062-2.247, p=0.0229).

Discussion and conclusion: For survival, age, tumor differentiation, T stage, N stage, and LVI were significant factors. LVI, age, and N stage were independent prognostic factors, with LVI being the strongest predictor. This aligns with international literature, emphasizing the importance of reporting LVI in histopathology.

Keywords: colorectal cancer, lymphovascular invasion, overall survival, disease-specific survival, survival analysis

RP 17: Improving the histopathology turnaround time at Lady Ridgeway Hospital for children

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Introduction and objectives: An audit cycle was completed with regard to time taken for issuance of reports from the time of accession of a sample (i.e. turnaround time – TAT) and compared with the institutional benchmark. Reasons for delay were identified and measures to improve these were taken.

Methodology: The audit was carried out over three months in the year 2023 and 2024. Data was obtained from the Hospital Health Information Management System (HHIMS) and request forms. Institutional TAT was identified as 4,8,10,14 days for samples categorized as A, B, C, D according to specimen type and size. The institutional benchmark was set at 95% of the reports issued within the institutional TAT.

Results: TAT was <95% in all categories (A=71.15%, B=84.68%, C=74.29%, D=50%). There was an improvement in TAT in all categories but only category B achieved the institutional benchmark on completion of the audit cycle (A=93.02%, B=98.73%, C=89.89%, D=88.24%). Delays due to special stains, second opinions and processing were rectified. Delay in diagnosis remained the main cause of delay, especially due to delays in clinical discussion.

Discussion and conclusions: Laboratory workflow was streamlined by introducing a sub process tracking system and due date intimation in HHIMS. Obtaining early second opinions and issue of a preliminary report awaiting immunohistochemistry was implemented improving TAT. Category B included common non-malignant cases, while "A" and "D" included tru-cut and large specimen/ bone malignancies respectively leading to diagnostic challenges for a single pathologist. Category C included liver and renal biopsies which often needed extensive clinical discussions. Partial success has been achieved in this audit cycle and steps have been taken to ensure that the benchmark is achieved in all categories of samples.

Keywords: turnaround time, histopathology, delays

RP 18: Placental pathology contributing to adverse foetal outcome; experience in a tertiary care centre

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Introduction and objectives: Placental pathology serves as a window into pregnancy complications and adverse pregnancy outcomes. This study investigates the common placental abnormalities associated with adverse pregnancy outcomes.

Methodology: Singleton placentas reported at the Department of Pathology, University of Colombo from January 2022 to March 2024 were retrieved (n=110). Statistical analysis was performed using SPSS v26.0.

Results: Mean age of the study population was 29.85 years (range: 17-42) and the mean period of gestation (POG) was 29.61 weeks (range:12-40). Majority were stillbirths (n=43,39.1%) followed by neonatal deaths (n=7,6.4%) and second trimester miscarriages (n=22,20.0%). The placental weight was <10th centile for POG in 61 (63.5%). Hematomas/thrombi were present in 27 (25.2%) at retroplacental (n=20,18.7%), marginal (n=6,5.6%) and intervillous (n=1,0.9%) positions. Evidence of ascending infections was present in 62 (56.9%), including chorioamnionitis (n=40,36.7%), funisitis (n=19,17.4%), chorionic plate vasculitis (n=12,11.0%) and villitis (n=2,1.8%). Chronic inflammation was present in one placenta (0.9%). Maternal vascular malperfusion was present in 58 (54.2%) including infarctions (n=30,28%), intervillous fibrin deposition (n=16,15%), advanced maturation of villi (n=27,25.2%), distal villous hyperplasia (n=6,5.6%) and decidual arteriopathy (n=9,8.4%). Foetal vascular malperfusion was present in 14 (13.1%) including umbilical code thrombosis (n=2,1.9%), thrombosis (n=7,6.5%) and intimal fibrin cushions (n=1,0.9%) in foetal vascular branches and segmented avascular villi (n=2,1.9%). A true knot was present in the cord of one (0.9%).

Discussion and conclusion: The results show the importance of placental pathological examination in identifying causes of adverse pregnancy outcome. Placental pathology was found in the majority of cases with adverse foetal outcomes. Small for POG, maternal vascular malperfusion and ascending infection were the common pathological findings.

Keywords: placenta, pathology

RP 20: Macroscopic placental parameters of healthy, term newborns delivered to healthy mothers in a tertiary care centre in Sri Lanka: is it high time to develop our own placental charts?

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Introduction and objectives: Examination of placenta provides many insights into the nature of the in-utero journey of a foetus. Placental weight(PW) is one of the main parameters assessed in pathological examination of placentae. The PW in a given case is compared with standard weight charts for the stated gestation. The charts currently used for this purpose are developed based on data obtained from European countries. No weight charts are available for South Asian countries. The objective was to describe the PW and other macroscopic parameters of normal placentae at term and to determine whether PWs are comparable to those given in European weight charts.

Methodology: We examined the macroscopic parameters of 67 placentae (30/67 male) of healthy mothers who delivered healthy newborns via normal vaginal delivery at term. Fresh PW were compared with existing weight charts. Foetal to placental weight ratio was calculated.

Results : The period of amenorrhoea (POA) of the placentae ranged from 37+3 – 41 weeks. Mean placental weight(fresh) for male and female foetuses were 379.96g and 440.53g and ranged from 230–525g and 251-633 g respectively. PW were within normal range for the gestational age in 60% and less than normal range in 40%. Umbilical cords had a mean diameter of 12.39 mm. All had three vessels. Hypo/hyper/normal coiling were seen in 3.0%, 26.9% and 43.5% respectively. Mean birth weight was 3.02 kg (Range: 2.54 – 3.68 kg).
Foetal to placental ratio was less than normal/normal/more than normal in 11.67%, 55% and 33.34% of cases suggesting reduced, normal and increased placental efficiency respectively.

Conclusion Close to half of the otherwise healthy newborns in this population showed placental abnormalities when compared with European standards A larger scale study is required to determine whether these changes are due to factors inherent to populations in our parts of the world.

Keywords : placental weight, foetal /placental ratio, healthy newborns

RP 21: Introduction of the “Grid-seal”; a simple device to make the life of the Histopathologist easier

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Introduction: A large proportion of the average histopathologist’s time is spent on taking microscopic measurements of tumours, distances to resection margins and performing mitotic counts. Mitotic counts are now calculated per mm^2/2 mm^2. This requires performing a calculation based on the field diameter of the individual microscope. In the above context, it would be largely beneficial if the pathologist can have an imprint of a $1mm^2$ grid on the glass slide as and when required.

Methodology: A grid composed of $1mm^2$ squares was designed as a stamp, so that the imprint of the grid can be made on the glass slide as and when required. Each square of the grid-imprint then measures 1 mm in length and 1 mm^2 in area irrespective of the power at which the slide is viewed and the field diameter of the microscope. Intellectual rights for the “Grid seal” as an industrial design was applied through the University Business Linkage Cell, University of Colombo.

Results: The grid can be used to measure the distances to the nearest 1 mm. This function is useful and accurate in measuring distances to resection margins in excision specimens and to measure the size of a lesion. Mitotic counts can be performed within 10 squares of the grid and then be divided by 10 or 5 to get the count for 1 mm^2 or 2 mm^2 as required. Additionally, the grid can be useful when screening cervical smears and counting cells when performing Ki67 index counts in slides stained by this immunostain.

Discussion and conclusion: The advantages of the “Grid-seal” would be that it is cheap and can be used as and when required, without interfering with the visibility of images. We hope that this device would be a useful tool to increase the efficiency and accuracy of measurements done at the microscope.

Keywords: grid, histopathology

RP 22: Postgraduate trainees' perception of the impact of a web-based histopathology reporting system on their training: a single-centre experience

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Introduction and objectives: The Department of Pathology, Faculty of Medicine, Ragama uses a web-based histopathology reporting system (WeB-HRS) to generate routine reports. Additionally, it functions as a workplace-based assessment tool by assessing the routine reporting of the postgraduate trainees in histopathology (PGTH) and enables monitoring of their progress. This study aimed to assess PGTHs' perceptions regarding the impact of the WeB-HRS on their workload and training.

Methodology: A qualitative study was carried out among 15 PGTHs, who were at various levels of training and had been using the WeB-HRS. They were interviewed in-depth by a non-pathology-related peer interviewer, experienced in qualitative research. Transcribed interviews were analysed using framework analysis.

Results: Three themes were identified: improved efficiency of reporting, facilitation of training and technical issues that impacted its use. According to the PGTHs, improved efficiency of reporting was brought about by the avoidance of multiple revisions, use of templates, disease categorization, and the ability to track the progress of the samples. Their training was facilitated by preparing a complete report before reporting with the consultant, the ability to refer past reports easily, tracking progress by grading trainees' performances and enhancing computer literacy. The technical issues encountered by the PGTHs included fluctuation of the internet facility, lack of access outside the faculty and limitations in the search function.

Discussion and conclusion: The PGTHs considered that the WeB-HRS had a positive impact on their training by improving the efficiency of reporting and facilitating their training. They believed that feedback to the trainees could be improved by providing periodical summaries and suggestions for improvement. They also highlighted a few technical issues encountered during the use of WeB-HRS.

Keywords: postgraduate training, histopathology, feedback, workplace-based assessment

RP 23: Outcomes of patients with mycosis fungoides managed at the National Hospital Kandy; a descriptive cross-sectional study

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Introduction and objectives: Mycosis fungoides is the most prevalent type of cutaneous T-cell lymphoma. It progresses through patch, plaque and tumour stages. Accurate diagnosis through histological confirmation and prognosis reliant on lesion type and extent are crucial. The treatment options include topical treatment, radiotherapy, phototherapy (PUVA), chemotherapy and immunotherapy. Global data shows an 8% relapse rate post-treatment, contrasting with previous Sri Lankan findings of 44%. This study aims to determine outcomes for patients treated at the National Hospital, Kandy.

Methodology: Data from 27 of 243 patients with confirmed mycosis fungoides receiving treatment at National Hospital Kandy between 2018 to 2024 were retrospectively analysed. Follow-up data was unavailable for the remaining patients.

Results: The study revealed that 88% (n= 24) of patients presented at the patch stage, 3.2% (n=1) presented at the plaque stage and 7.4%(n=2) presented with bullous lesions. 44% (n=12) experienced relapse post initial treatment with 91.6% (n=11/12)) showing relapses at the patch stage and 8.33%(n =1/12) at the plaque or tumour stage. All other patients recovered fully with initial topical steroids or PUVA therapy reporting no relapses during the study period.

Discussion and conclusion: In this study, mycosis fungoides commonly presented in the indolent patch stage and most relapses mirrored this initial presentation. The 44% relapse rate in Sri Lanka surpasses global averages consistent with previous research findings.

Keywords: mycosis fungoides, Sri Lanka

RP 24: Efficacy of modified Papanicolaou staining method used in a Sri Lankan government sector laboratory: a cost-effective method for resource limited settings

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Introduction and objectives: The study investigates the efficacy of a modified Papanicolaou staining method for cervical screening, currently practiced at District General Hospital Matara (DGHM), Sri Lanka, as the conventional method requires a high amount of alcohol.

Methodology: A prospective study was conducted between September and November 2023 in the histopathology laboratory at DGHM. A total of 161 cervical smears were collected from Medical Officer of Health (MOH) areas in Matara. Paired smears were stained using conventional and modified methods. The modified method involved replacing the alcohol series for hydration with 70% alcohol. After staining with Harris' haematoxylin and rinsing with tap water, differentiation step in 0.5% HCl and dehydration step with an alcohol series were omitted. Tap water replaced the use of 95% alcohol for rinsing after staining with OG6 and EA50. Smears were air-dried, mounted, and screened blindly by the primary investigator, two cyto-screeners, and the consultant histopathologist. Smears were scored according to a scoring system. The quality index was calculated.

Results: Of all paired 152 satisfactory smears, 98.7% of conventional pap smears showed distinct cytoplasmic borders, while 96.7% that were stained by the modified method showed distinct cytoplasmic borders. 60.5% of smears stained by the conventional method showed satisfactory cytoplasmic staining whereas 57.2% smears stained by the modified method showed satisfactory cytoplasmic staining. All the smears stained by both methods showed distinct nuclear borders and crisp chromatin staining. No significant difference was observed between the cytomorphological parameters of two methods ($p < 0.05$). Quality index of the modified and conventional methods were 0.911 and 0.932 respectively. The cost of the modified method was 80% less than the conventional method due to limited alcohol use.

Discussion and conclusions: The modified method is cost-effective and simple and offers a cost-effective alternative to conventional staining methods, ensuring high quality preservation and diagnostic standards in resource-limited settings.

Keywords: cervical screening**,** Papanicolaou smear, modified Papanicolaou staining

RP 25: An analysis of glomerular diseases in children with haematuria undergoing biopsy at a paediatric renal referral centre

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Introduction and objectives: The most common cause of childhood haematuria is post-infectious glomerulonephritis (PIGN). Biopsy is performed only when the clinical picture is atypical for PIGN. Children with haematuria undergoing renal biopsies were evaluated to document the disease spectrum and histological complications.

Methodology: A retrospective descriptive study was done on 80 consecutive renal biopsies of children (<14 years) who presented with haematuria with or without other symptoms to the Paediatric Renal Unit, Teaching Hospital Peradeniya from 2021 to 2023. Follow up biopsies, developmental renal anomalies and post-transplant biopsies were excluded. Pathological evaluation was done with haematoxylin and eosin and methenamine silver stains and direct immunofluorescence.

Results: The diagnosis made were as follows: PIGN 34(42.5%), lupus nephritis 11 (13.75%), suspected lupus nephritis 6 (7.5%), suspected pauci-immune small vessel vasculitis 5(6.25%), idiopathic mesangioproliferative glomerulonephritis 5 (6.25%), IgA nephropathy 5 (6.25%), Henoch Schoenlein purpura 3 (3.75%), membranoproliferative glomerulonephritis 3 (3.75%), focal segmental glomerulosclerosis 1 (1.25%) and histologically unremarkable 3 (/3.75%). Four biopsies with necrotizing glomerulonephritis were unclassifiable due to the lack of clinical details and immunofluorescence findings. Of the biopsies with features of PIGN, nine were uncomplicated, 13 had karyorrhexis and 12 had crescents. Of the biopsies with IgA nephropathy, endocapillary proliferation was identified in one and crescents in another. Of the biopsies diagnosed as lupus nephritis, class II, III and IV were observed in two, two and seven respectively.

Discussion and conclusion: In children undergoing biopsies for haematuria the majority were diagnosed as PIGN. However, they had evidence of varying degrees of necrosis from karyorrhexis to crescents. Lupus nephritis and vasculitis were the next most common causes of hematuria in children. Immunofluorescence and clinical correlation are essential for a definitive diagnosis.

Keywords: post infectious glomerulonephritis, haematuria, crescents

RP 26: Significance of karyorrhexis in children with post-infectious glomerulonephritis

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Introduction and objectives: Post infectious glomerulonephritis (PIGN) is the commonest cause of acute nephritis among children and is self-limiting. Complications such as, increasing serum creatinine (SC) and prolonged disease course are indicators for biopsy. The study objective was to correlate the degree of proteinuria and SC with histological features of complications namely karyorrhexis and crescents among children with PIGN.

Methodology: This was a retrospective study of 34 children with a pathological diagnosis of PIGN, based on light microscopy and immunofluorescence, at the Paediatric Renal Unit, Teaching Hospital Peradeniya from 2021 to 2023. Histological groups were identified as, uncomplicated PIGN (A), PIGN with karyorrhexis alone (B) and PIGN with crescents, with or without karyorrhexis (C) and compared with the mentioned biochemical parameters.

Results: Group A, B and C included 9, 13 and 12 cases with a mean age of 7.8 ,8.6 and 8.5 years respectively. Male: female ratios were 8:1, 3.3:1 and 4:1 respectively. The clinical features were as follows: Group A - nephrotic range proteinuria (NRP) (5/9; 55.5%), hypertension (3/9; 33.3%), rising SC (2/9; 22.2%), Group B - NRP (4/13; 30.7%), hypertension (5/13; 38.4%), rising SC (2/13; 15.2%), Group C - NRP (8/12; 66.6%), hypertension (4/12; 33.3%), rising SC (6/12; 50%). Mean SC levels of groups A, B and C were 86.4 µmol/L, 147.76 µmol/L and 143.3µmol/L respectively. There was a statistically significant difference in the mean serum creatinine levels between groups A and C (p=0.018) but not groups B and C (p=0.947)

Discussion and conclusion: NRP and hypertension were present in all histological groups without significant differences. In both histologically complicated groups, the mean SC was higher than in the uncomplicated group. A statistical significance was reached between groups A and C but not groups B and C. According to current management protocols PIGN with crescents is treated vigorously, but not PIGN with karyorrhexis alone. Further studies are suggested to investigate whether karyorrhexis without crescents too is clinically significant.

Keywords: haematuria, post infectious glomerulonephritis, acute kidney injury, crescents, karyorrhexis

RP 27: Commencement and optimization of HER2 DISH method for accurate breast cancer diagnosis

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Introduction and objectives: HER2 (Human epidermal growth factor receptor 2) is a crucial biomarker in breast cancer, influencing prognosis and treatment. Dual in situ hybridization (DISH) is a robust method for detecting HER2 gene amplification, providing an alternative to immunohistochemistry (IHC) and fluorescence in situ hybridization (FISH).The objective is to describe the commencement of the HER2 DISH method in our laboratory, outline key technical aspects, and share strategies for achieving reliable and reproducible results.

Methodology: The test was performed on a BenchMark IHC/ISH instrument using the Ventana HER2 Dual ISH DNA Probe Cocktail and VENTANA detection kits. Technicians were trained and standard operating procedures prepared under guidance of experts. Key steps included proper tissue preparation and hybridization with dual colour DNA probes (HER2 and CEP17). Strategies for optimization included hybridization at 37°C for 14-20 hours duration, precise saline sodium citrate (SSC) and detergent concentrations for washing stringency and maintaining deionized water conductivity at 0 -5uS/cm. Strict quality control measures, including positive and negative controls, were implemented at each step to ensure reproducibility. Validation covered preanalytical, analytical, and clinical stages.

Results and Discussion: Twenty-five breast cancer tissue samples (resection and core biopsy) were tested using the HER2/DISH protocol, with results compared to IHC and FISH. The HER2/DISH test showed a 96% agreement with IHC and FISH, with high precision and no significant issues during validation. Since commencement, 43 tests have been performed, with nine showing amplification.

Conclusion: The successful implementation of the HER2 DISH method enhances the accuracy of HER2 status determination in breast cancer patients. Key technical optimizations and rigorous quality control measures are essential for reliable results. The HER2 DISH method offers a valuable addition to the diagnostic toolkit, aiding in personalized treatment planning.

Keywords: HER 2 DISH, breast cancer

ABSTRACTS

OF

CASE REPORTS

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CR 01: Malakoplakia, a rare histological finding in prostate core biopsy

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Introduction: Malakoplakia is an unusual chronic inflammatory condition of the prostate. The term 'malakoplakia' comes from Greek words malakos (soft) and plakos (plaque). It was first described by Michaelis and Gutmann in 1902 and later named by von Hansseman in 1903. The exact aetiology for malakoplakia is unknown, but it is thought to be due to a defect in the macrophage phagolysosomal response to bacterial infection, resulting in accumulation of macrophages with calcified inclusions composed of undigested bacteria and products. It is a rare chronic inflammatory disorder that affects many organs and most commonly involves the genitourinary tract. It can mimic prostate carcinoma both radiologically and histologically.

Case report: A 57-year-old previously healthy man presented to the clinic with urge incontinence. He had progressively worsening obstructive urinary symptoms and back pain of one year duration. He denied any history of urinary tract infections. His serum prostate specific antigen level was 49.8ng/ml. Cystoscopy showed mild trabeculations in the bladder wall and the prostate was enlarged. Transrectal ultrasound guided biopsy of the prostate showed benign prostatic tissue with granulomatous inflammation. Collections of histiocytes with granular eosinophilic cytoplasm and basophilic intracytoplasmic inclusions with targetoid appearance were seen. Positive staining with Prussian blue, highlighted concentrically layered basophilic inclusions (Michaelis-Gutmann bodies), supporting the diagnosis of malakoplakia.

Discussion and conclusion: The diagnosis of malakoplakia was made based on the aforementioned histological and special stain findings. Antibiotic treatment and surgical excision of the lesions are required for the management.

CR 02: Mucinous carcinoma of the skin; a rare entity

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Introduction: Primary cutaneous mucinous carcinomas are rare adnexal carcinomas with identical histomorphology to mucinous breast carcinomas.

Case report: A 77-year-old woman presented with an anterior chest wall lump for four years. Gross examination showed an ulcerated skin nodule with a glistening cut surface. A relatively well-circumscribed tumour with focal infiltrative areas involving the deep dermis and subcutaneous tissue was seen when sectioned. Microscopically, it was composed of ducts, cribriform structures, solid sheets and clusters of cells suspended in abundant pools of extracellular mucin. The tumour cells contained vesicular nuclei with minimal pleomorphism, eosinophilic cytoplasm and moderate mitotic activity. In situ components and dirty necrosis were not identified. The tumour cells showed diffuse nuclear positivity for ER. They were negative for CK7. Ultrasonography of breasts and abdomen, mammography, colonoscopy and upper gastrointestinal endoscopy were unremarkable in this patient. Six months after diagnosis there was no evidence of metastatic disease. Follow up ultrasound scans of the breasts and abdomen were unremarkable.

Discussion and conclusion: CK20 can be performed to exclude metastatic colorectal tumours. Additional immunomarkers were not performed due to economic constraints, however should be done in this case due to CK7 negativity. Presence of an in situ component is helpful to confirm a cutaneous origin. Dirty necrosis and goblet cell differentiation are clues to intestinal origin. Localization of the tumour in the chest wall and axilla are indicative of mammary origin, however radiological investigations of the breasts were unremarkable in our case. Primary cutaneous mucinous carcinomas are rare. Extracutaneous metastases from sites such as breast and gastrointestinal tract should be excluded by extensive clinical workup.

Keywords: mucinous carcinoma of the skin, primary cutaneous mucinous carcinoma

CR 03: Primary squamous cell carcinoma of kidney with a stag-horn calculus

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Introduction: Primary squamous cell carcinoma (SCC) of the kidney is rare and has a poor prognosis. Although uncommon, SCC should be considered when a renal mass is accompanied by a longstanding renal calculus. This is a case of primary pure SCC associated with staghorn calculi in the kidney.

Case report: A 73-year-old woman with hypertension presented with three weeks of flank pain and fever. She had a tender mass on the right flank, elevated serum creatinine, and pyuria. Ultrasound scan showed an enlarged right kidney with abscess formation and a staghorn calculus. A right radical nephrectomy was performed after a course of intravenous antibiotics with the indication being non-functioning and non-resolving pyelonephritis. The nephrectomy specimen (25x14x13 cm) showed a brown staghorn calculus in the renal calyces, abscess formation, and a grey-white solid cystic mass replacing the renal parenchyma. Microscopy revealed a well-differentiated SCC infiltrating the renal parenchyma, capsule, and perirenal fat. Adequate sampling and histology excluded an associated transitional cell carcinoma and clinical corelation excluded SCC elsewhere.

Discussion and conclusion: SCC is a rare kidney malignancy, comprising 1.4% of all renal cancers. It often presents in advanced stages. It typically appears in middle-aged patients, with equal incidence in males and females. The nonspecific clinical signs and lack of specific radiological features delay diagnosis. Histologically, SCC shows extensive squamous differentiation and keratin pearls, often with necrosis. Radical nephroureterectomy is the preferred treatment for renal-limited tumours. The prognosis is generally poor. Primary SCC of the kidney should be considered in patients with staghorn calculi. Imaging techniques like computed tomography and magnetic resonance imaging along with histopathological examination, are crucial for diagnosis.

Keywords: squamous cell carcinoma, kidney, stag horn calculi, abscess

CR 04: Mucinous cystic neoplasm of the liver

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Introduction and objectives: Mucinous cystic neoplasm of the liver (MCN-L) is an exceedingly rare entity, constituting less than 5% of all cystic neoplasms. It is characterized by the presence of ovarian like stroma and the absence of bile duct communication. About 90% of the lesions are benign with the rest showing malignant transformation to ductal type adenocarcinoma.

Case report: We report a case of a 29-year-old woman presenting with a right hypochondrial pain, wherein imaging studies revealed a multilocular cyst in the right lobe of the liver, devoid of any mural nodules and biliary communication. Subsequent hepatic cystectomy revealed a multilocular cyst with patchy yellow plaques on the inner surface. Microscopic examination demonstrated a multilocular cystic neoplasm lined by columnar to cuboidal epithelium and ovarian-like dense stroma. Extensive sampling of the lesion did not reveal areas of high-grade dysplasia or invasion. The lining cells were positive for alcian blue, periodic acid Schiff (PAS), CK 7, and CK 19 with negative CK 20, highlighting biliary type phenotype. Notably, stromal cells exhibited nuclear positivity for ER and PR.

Discussion and conclusion: The morphological and immunohistochemical findings align with the diagnosis of a benign MCN–L. The presence of malignant transformation was excluded by extensive sampling. Although these lesions are more common in the pancreas, they are exceedingly rare in the liver. This case underscores the importance of the awareness of rare lesions in the liver so as not to miss the diagnosis.

Keywords: mucinous cystic neoplasm, liver, benign tumour, malignant transformation

CR 05: Steroid cell tumour of the ovary; a rare entity

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Introduction: Steroid cell tumours are rare sex cord tumours occurring in the ovary. The patients frequently present with hormonal manifestations.

Case report: A 23-year-old woman presenting with secondary amenorrhea and virilization, had high serum total testosterone levels. Imaging studies revealed a well-defined solid lesion in the left ovary. The excision specimen showed a well-circumscribed tumour with a solid, yellow cut surface. Microscopy showed diffuse sheets and nests of round to polygonal cells with distinct cell borders containing central nuclei and abundant eosinophilic to clear cytoplasm. There was no evidence of tubular differentiation, nuclear atypia, increased mitosis, haemorrhage, or necrosis. The tumour cells were positive for calretinin. A diagnosis of steroid cell tumour was made on morphology.

Discussion and conclusion: Steroid cell tumours are very rare ovarian sex cord tumours which account only for 0.1 % of ovarian tumours. The patients present with variable symptoms, half of which are androgenic symptoms. The treatment of choice is surgical excision. Approximately one third of the cases show malignant behaviour. The diagnosis is made on histology and is supported by immunohistochemistry. The differential diagnoses include clear cell carcinoma of the ovary, Leydig cell tumour, Sertoli cell tumour and metastatic melanoma depending on the different morphology. Steroid cell tumour causes virilisation in young women like other stromal tumours and expresses a similar immunohistochemical staining pattern. The differentiation from other stromal tumours is made on morphology and sometimes extensive sampling is needed. Other malignancies show malignant features like atypia and infiltrative growth.

Keywords: steroid cell tumour, ovary, virilisation, sex cord tumours

CR 06: An adolescent girl with papular urticaria presenting with acute kidney injury

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Introduction: Papular urticaria (PU) is a prolonged hypersensitivity skin reaction to an arthropod bite in which type I hypersensitivity reaction plays a central role in pathogenesis. Direct systemic manifestations of PU are rare. We describe a girl with PU presenting with acute kidney injury (AKI) due to dual renal pathology.

Case Report: A 13-year-old girl with a history of PU on methotrexate presented with recent onset generalized oedema, frothy urine and hypertension. Collagen vascular disease was excluded clinically. Urine full report showed proteinuria (3+) and haematuria. Serum creatinine was 210 µmol/L and ASOT level 200 IU/ml; C3 and C4 were normal. Renal biopsy revealed 12 glomeruli showing mesangial and endocapillary hypercellularity. Neutrophils and karyorrhexis were present in seven glomeruli. Crescents were absent. Tubulitis and interstitial lymphoplasmacytic inflammation with eosinophils were involved 30% of the biopsy. Chronic changes were not present. Immunofluorescence showed granular capillary and mesangial positivity (2+) for IgG and C3. IgA and IgM were negative. Accordingly, a diagnosis of post-infectious glomerular nephritis (PIGN) with hypersensitivity acute interstitial nephritis was made. The patient made a complete recovery following treatment with steroids and cyclophosphamide.

Discussion and conclusion: Secondary infection of PU leads to PIGN as evident histologically and with immunofluorescence. Since PU is a hypersensitivity reaction, the patient may be atopic predisposing to acute hypersensitivity type interstitial nephritis as evidenced by presence of eosinophils in the interstitium. Two co-existent pathological processes explain the presentations with AKI. Diagnosis of renal diseases can get complicated by unexpected dual pathology. Close histological assessment and clinical correlation are crucial for correct pathological diagnosis.

Keywords: papular urticaria, post infectious glomerular nephritis, hypersensitivity tubulointerstitial nephritis

CR 07: Chromophobe renal cell carcinoma: a rare case with sarcomatoid change

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Introduction: Chromophobe renal cell carcinoma (ChRCC) accounts for 5-7% of cases of renal cell carcinoma (RCC) and generally has a better prognosis than clear cell or papillary RCC. Sarcomatoid change in ChRCC is rare (2-8%); when it occurs, it indicates a more aggressive tumour and leads to a worse prognosis.

Case report: A 76-year-old woman presented with hematuria. Ultrasound imaging revealed a left renal tumour. A radical nephrectomy specimen showed a 95×50×50 mm tumour involving almost the entire kidney with two morphologically distinct areas. 70% of the tumour exhibited an ill-defined whorled pattern with necrosis while 30% displayed a relatively circumscribed, light brown appearance. Microscopic evaluation of the circumscribed area reveals sheets and nests of tumour cells separated by incomplete vascular septa. They show finely reticulated, pale to densely eosinophilic cytoplasm and distinct plant-cell-type cell membranes. The central rasinoid nuclei showed perinuclear halos with occasional binucleation. These cells showed strong and diffuse membrane positivity of CK7. The interface between these two morphologic areas showed an abrupt transition to sarcomatoid differentiation. The ill-defined sarcomatous component comprised fascicles of atypical spindle cells with markedly pleomorphic nuclei, including bizarre multinucleated giant cells. Brisk mitotic activity was seen with atypical mitoses.

Discussion and conclusion: Given the rarity of pure sarcomatoid differentiation, comprehensive sampling is crucial in this approach for detecting epithelial components. Due to the potential for distant metastases at the time of nephrectomy and the high overall mortality of ChRCC with sarcomatoid differentiation, a multidisciplinary team discussion is recommended for patient management.

Keywords: chromophobe, sarcomatoid change, renal cell carcinoma

CR 08: Diagnostic challenges in myeloid sarcoma: a case series

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Introduction: Myeloid sarcomas (MS) are rare aggressive tumours of myeloblasts in extra medullary sites. We reported three cases of MS with different clinical presentations.

Case reports: Case-1: A-26-year-old previously healthy man collapsed at work, followed by fluctuating consciousness. Contrast enhanced computed tomography (CECT) chest revealed necrotizing pneumonia in the left upper lobe with a pleural effusion; lymphadenopathy was not detected. Blood picture was negative for leukaemia. Lung and bone marrow biopsies showed a tumour composed of sheets of highly atypical large cells with pleomorphic nuclei. Case-2: A 56-year-old woman presented with generalized lymphadenopathy. Blood pictures and bone marrow revealed anaemia of chronic disease. The inguinal lymph node revealed effaced architecture, and diffuse sheets of medium sized atypical lymphoid cells with occasional large cells. Case-3: A 71-year-old man was found to have generalized lymphadenopathy. The inguinal lymph node showed vague nodules of medium sized atypical lymphoid cells. A history of myeloid leukaemia was revealed on subsequent inquiry. In all three cases, initial panels of CD20, CD79a, CD3 CD5, CD30, CD15, and CD23 were negative; Ki67 was high. In the first case pancytokeratin and ALK were negative. In cases-2 and 3, the secondary panel of MPO, CD34, and CD117 were positive; in case-1, only MPO was positive. A diagnosis of primary MS diagnosis was made in the first two cases and secondary MS in the third case.

Discussion and conclusion: As MS is rare, it is often not included in the first line of differential diagnosis. To avoid missing this aggressive malignancy, myeloid panels with MPO should be performed when the primary lymphoma immunohistochemistry panel is negative. Clinical and haematological correlation is invaluable in deciding the immunopanels.

Keywords: myeloid sarcoma, myeloblasts, myeloid leukaemia, MPO

CR 09: Primary breast leiomyosarcoma in a young woman; a rare entity

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Introduction and objectives: Primary leiomyosarcoma (LMS) of the breast is a rare malignancy, constituting less than 1% of all breast neoplasms, typically occurring in post-menopausal women. Diagnosis is challenging due to overlapping features with common breast neoplasms like fibroadenoma, Phyllodes tumour, and mammary angiosarcoma. To date, 74 cases of primary breast LMS have been reported in English literature. We present a case of primary breast LMS in a young lactating woman, clinically mimicking a Phyllodes tumour.

Case report: A 23-year-old woman presented with a recently increasing, painless right breast mass of three years' duration. The lump measured about 10 cm with no palpable axillary or supraclavicular lymph nodes. Ultrasound suggested a BIRADS 4a lesion. An initial FNAC report indicated a Phyllodes tumour. Contrast enhanced computed tomography (CECT) revealed a heterogeneously enhancing, infiltrating mass. No other lesions were noted radiologically. A nipple-sparing mastectomy was performed. The tumour showed spindle cells in fascicles, diffuse sheets, and marked myxoid areas without intervening epithelial elements. The tumour cells exhibited moderate nuclear pleomorphism with a mitotic count of 9-10/HPF and tiny necrotic foci. Immunohistochemistry (IHC) revealed tumour cells, positive for SMA and h-Caldesmon with a Ki-67 index of 25%. ER, PR, CD34, pancytokeratin, P63, S100, CK5/6, and desmin were all negative, leading to a diagnosis of breast LMS.

Discussion and conclusion: Breast LMS are rare, mostly occurring in post-menopausal women, while our case involved a 23-year-old lactating woman. Its histomorphology can overlap with other neoplasms, making extensive sampling and a panel of IHC markers crucial for diagnosis. Our patient was started on a multidrug chemotherapy regimen. She was healthy without any new complaints after the first cycle of chemotherapy and on the first follow-up. We highlight an IHC-based approach to diagnosing primary breast LMS in a young woman. It should be considered in the differential diagnosis of large breast masses.

Keywords: leiomyosarcoma, breast, tumour, fibroadenoma, smooth muscle

CR 10: Non-ossifying fibroma of the temporal bone

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Introduction: Giant cell rich lesions confined to the craniofacial region include giant cell granuloma and cherubism. Aneurysmal bone cyst, brown tumour of hyperparathyroidism chondroblastoma, giant cell tumour, non-ossifying fibroma, aneurysmal bone cyst and giant cell rich osteosarcoma are the other possibilities.

Case report: A fourteen-year-old girl presented with a swelling over the left temporal bone. Radiological features were in favour of an aneurysmal bone cyst. Squash smears made from the intraoperative sample revealed clusters of bland spindled cells admixed with many multinucleated giant cells. The smears were reported as a giant cell rich cellular lesion since it was difficult to give a precise diagnosis based on cytology alone. Histological examination revealed a tumour composed of bland spindled cells arranged in a storiform pattern with interspersed osteoclast-like multinucleated giant cells. The neoplastic cells showed ovoid nuclei with regular nuclear membranes. Aneurysmal bone cyst like changes were present. A diagnosis of non-ossifying fibroma was made.

Discussion and conclusion: The differential diagnosis of non-ossifying fibroma includes giant cell reparative granuloma, which is common at this age but has a different histological picture, giant cell tumour, which is rare in the paediatric population, chondroblastoma, which shows oval cells with nuclear grooves and pericellular chicken wire calcifications, and osteosarcoma, which is a malignant tumour with osteoid production. The approach to diagnosis includes the consideration of the site of involvement, age of the patient, and radiological findings along with the cytological and histological features.

Keywords: giant cell, temporal bone , non-ossifying fibroma

CR 11: Anorectal mucosal melanoma presenting as an anal polyp

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Introduction: Anorectal mucosal melanoma (AMM), comprising around 1% of anorectal tumours, poses significant challenges in both diagnosis and treatment due to its rarity and aggressive behaviour. Its initial symptoms are often nonspecific and the tumours can mimic haemorrhoids, leading to delayed detection. Here we report a rare case of AMM presenting as an anal polyp.

Case report: A 63-year-old man presented with a four-month history of perianal pain and bleeding, leading to the discovery of a sizable anorectal polyp during colonoscopy. Further imaging via computed tomography (CT) revealed a polypoid mass in the anal canal extending proximal to the lower part of the prostate. An initial biopsy raised suspicion of melanoma, prompting the decision for abdominoperineal resection. Gross examination showed two polypoid lesions in the anorectum, measuring up to 70mm and 45mm in maximum diameter. Microscopy showed a high-grade tumour exhibiting sheets of markedly pleomorphic spindle to epithelioid cells with cytoplasmic granular pigment. The tumour cells were melan-A positive and pan-cytokeratin negative. Multiple lymph node metastases were also present. There was no history of previous or synchronous melanoma elsewhere; thus, it was concluded as primary AMM.

Discussion and conclusion: AMM necessitates careful differentiation from various pigmented lesions and tumours, including adenocarcinomas, small cell carcinoma and sarcoma. Accurate diagnosis relies on meticulous histopathological examination of specimens, complemented by immunohistochemical staining for confirmation. Despite the utilisation of multiple treatment modalities such as surgery, radiotherapy and systemic therapies, the prognosis remains dismal due to delayed diagnosis and the rapid growth of tumours in the abundant vascular and lymphatic supply of the anorectal mucosa. Nonetheless, ongoing investigations into novel therapies including immunotherapy hold promise for improving patient outcomes.

Keywords: mucosal melanoma, anorectum.

CR 12: Radiation induced cutaneous angiosarcoma

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Introduction : The frequency of occurrence of radiation-induced sarcomas in the head and neck region is 0.15%. Cutaneous angiosarcomas occur secondary to radiation or chronic lymphoedema. Though angiosarcomas are mostly found in the head and neck region, there are minimal reports of radiation-induced angiosarcomas in this area.

Case report: A 68-year-old man with a history of squamous cell carcinoma of the tongue base treated with surgery and radiotherapy seven years ago presented with a painful gradually enlarging lump over the right parotid region for one month. Magnetic resonance imaging (MRI) revealed a heterogeneous enhancement in the region of the lump. Incisional biopsy included a piece of skin measuring 15x10x8 mm. Microscopy revealed an infiltrating tumour displaying anastomosing, irregular vascular channels and solid nests of plump spindle cells. The nuclei were pleomorphic with a mitotic count of 12/HPF. Haemorrhage and haemosiderin pigment were present. There was no necrosis. The morphological differential diagnosis included angiosarcoma, Kaposi sarcoma (KS), epithelioid haemangioendothelioma, melanoma and metastatic squamous cell carcinoma. Immunohistochemistry revealed positivity for CD34, CD31 and ERG while HHV8, pancytokeratin and Melan-A were negative. Ki 67 proliferation index was 50%.

Discussion and conclusion: Both morphology and immune profile enabled a diagnosis of angiosarcoma arising in the skin likely secondary to past radiation. KS was excluded, as there was marked nuclear atypia and negativity for HHV8. Presence of frank malignant features and lack of myxohyaline background eliminated epithelioid haemangioendothelioma. Lack of melanin, eosinophilic nucleoli and staining for Melan-A excluded a melanoma. Cytokeratin negativity with positive vascular markers excluded a metastatic carcinoma.

Keywords: cutaneous angiosarcoma, radiation induced, head and neck, ERG

CR 13: Erdheim Chester disease presenting as a right orbital mass

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Introduction: Erdheim Chester disease is a rare multisystem non-Langerhans cell histiocytosis in adults. The BRAFV600E mutation was detected in approximately 50% of cases of the disease. Orbital involvement is relatively common in Erdheim-Chester disease, however bilateral involvement is extremely rare.

Case report: A 53-year-old woman with a clinical and radiological diagnosis of Erdheim Chester disease presented with chronic headaches, pain, and swelling of the right eye for six months. On examination, there was proptosis and restriction of movements of the right eye. Imaging of the right orbit revealed a retro-orbital mass, and a biopsy was taken. Grossly, there were multiple fragments of fatty tissue, together measuring 30x25x10 mm. Microscopy showed fibro fatty tissue infiltrated by sheets of foamy histiocytes, scattered Touton giant cells, and lymphocytes, compatible with retro-orbital xanthogranulomatous inflammation. The foamy histiocytes were positive for CD68 and negative for CD1a, langerin, and S100. Immunohistomorphological features confirmed the clinical diagnosis of Erdheim-Chester disease. She was on systemic steroids and had an oncology follow-up.

Discussion and conclusion: The differential diagnoses include Langerhans cell histiocytosis, Rosai-Dorfman disease, and xanthogranuloma. The foamy histiocytes were only positive for CD68. Negativity for CD1a, Langerin, and S100 excluded the other differential diagnoses in a compatible clinical-radiological context. Erdheim-Chester disease is associated with a poor prognosis despite standard therapy. The possibility of Erdheim Chester disease should be considered in a case of orbital xanthogranulomatous inflammation, for early diagnosis and management.

Keywords: Langerhans cell histiocytosis, proptosis, xanthogranuloma, langerin

CR 14: Anaplastic thyroid carcinoma with rhabdoid morphology dedifferentiating from papillary carcinoma of thyroid classic subtype

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Introduction: Anaplastic thyroid carcinoma is one of the most aggressive thyroid cancers. It may arise de-novo or from a pre-existing well differentiated thyroid cancer, including papillary thyroid carcinoma.

Case report: A 70-year-old woman presented with a multinodular goitre of the right lobe of the thyroid gland. CT scan revealed a multinodular goitre involving the right lobe of the thyroid with minimal retrosternal extension. Two nodules were also identified in both lobes of the lung. Fine needle aspiration cytology was not performed, and the patient underwent total thyroidectomy. A completely distorted total thyroidectomy specimen was received with irregular outer surfaces. Haemorrhagic and necrotic areas were seen on sectioning. Microscopic examination of sections from both thyroid lobes and isthmus revealed sheets of discohesive, pleomorphic, polygonal cells with marked variation in size with eccentrically placed markedly pleomorphic angulated nuclei and scanty to abundant cytoplasm. Bizarre and multinucleated cells were also seen. Atypical mitotic figures were present. There was extensive necrosis. Foci of classic papillary thyroid carcinoma were identified. The final diagnosis was of anaplastic thyroid carcinoma with rhabdoid morphology dedifferentiating from papillary carcinoma of thyroid classic subtype and diffusely infiltrating both lobes of thyroid gland.

Discussion and conclusion: Approximately 20% of patients with anaplastic thyroid carcinoma have a history of differentiated thyroid carcinoma and 20% to 30% have a coexisting differentiated thyroid carcinoma. In this case anaplastic areas were identified co-existing with papillary carcinoma of the thyroid. Studies done so far have found various mechanisms underlying anaplastic transformation. TERT promoter and TP53 mutations are the most frequent and distinct mutations reported. Identification of an anaplastic component in thyroid carcinoma is important as it determines prognosis.

Keywords: anaplastic carcinoma, thyroid

CR 15: Incidental occurrence of ovarian serous carcinoma and appendicular neuroendocrine tumor

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Introduction: The concurrent presence of two distinct primary tumours in a single patient is uncommon and causes unique diagnostic and therapeutic challenges. Serous carcinoma of the ovary, a common and aggressive ovarian cancer, is often diagnosed at an advanced stage. Neuroendocrine tumours (NETs) of the appendix are rare and typically discovered incidentally. This case report presents the incidental occurrence of both tumours in an elderly woman.

Case report: A 68-year-old woman presented with abdominal discomfort and distension. A pelvic ultrasound showed a complex ovarian neoplasm with local infiltration. She underwent a total hysterectomy, bilateral salpingo-oophorectomy, and appendectomy. The ovarian tumour infiltrated the uterus serosa, and the appendix was enlarged. Microscopy revealed a high-grade serous carcinoma of the ovary comprising sheets of highly pleomorphic cells with necrosis, and brisk mitotic activity. The appendiceal tumour measured 12mm and comprised sheets and nests of moderately pleomorphic cells with clumped chromatin, and sparse mitoses. The appendiceal tumour was positive for synaptophysin and negative for WT1, while the ovarian tumour was the opposite. The final diagnosis was given as ovarian serous carcinoma (Stage pT2) and an appendiceal neuroendocrine tumour (G1).

Discussion and conclusion: Simultaneous ovarian serous carcinoma and appendiceal NETs are exceptionally rare and can cause diagnostic dilemmas for histological assessment and staging which is crucial for prognosis and treatment. The ovarian carcinoma requires aggressive treatment and close follow-up, whilst the appendiceal NET can be effectively managed with surgical removal alone. This case underscores the necessity of comprehensive surgical management and meticulous pathological assessment in patients with suspected malignancies which could be easily missed.

Keywords: serous carcinoma, neuroendocrine tumour.

CR 16: A case of multicystic renal dysplasia in a foetus of a mother with gestational diabetes

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Introduction: Multicystic renal dysplasia (MCRD) is a congenital kidney malformation characterized by multiple non-communicating cysts, leading to renal dysfunction. Gestational diabetes mellitus (GDM), marked by glucose intolerance during pregnancy is associated with various foetal anomalies. We present a rare case of MCRD in a foetus of a mother with GDM.

Case report: A 28-year-old G2P1C1 mother, diagnosed with GDM at 15 weeks, presented at 36 weeks and 5 days with reduced foetal movements. Antenatal ultrasound detected a left-side cystic kidney. Foetal heart activity was absent upon admission and intrauterine death was confirmed. Perinatal postmortem revealed a normally developed foetus without external dysmorphic features. The left kidney was enlarged with multiple, varying-sized cysts, ranging from 10-25mm containing clear fluid and brown inner surfaces with intervening parenchyma. Normal renal architecture was not identified. The right kidney appeared unremarkable. An atrial septal defect was seen, and the rest of the organs were unremarkable. Microscopic examination of the left kidney showed multiple cysts lined by low cuboidal to denuded epithelium, varying stroma with blood vessels, nerve bundles, tubules, and primitive glomeruli confirming MCRD.

Discussion and conclusion: MCRD results from aberrant metanephric differentiation. It has a multifactorial aetiology including genetic, teratogenic, and intrauterine factors. While the link between GDM and MCRD is unclear, hyperglycaemia-induced oxidative stress and placental vascular changes may disrupt organogenesis. Malformations of other organs, especially of the heart, can associated with MCRD. This case highlights the potential association between GDM and MCRD, emphasizing the need for meticulous GDM management to minimize adverse foetal outcomes. Further research is crucial to understand the mechanisms linking GDM to congenital anomalies and develop preventive strategies.

Keywords: multicystic renal dysplasia, gestational diabetes mellitus

CR 17: Pleomorphic dermal sarcoma, an underdiagnosed entity confused with atypical fibroxanthoma

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Introduction: Pleomorphic dermal sarcoma (PDS) is a relatively underdiagnosed undifferentiated tumour morphologically similar to atypical fibroxanthoma (AF), which exclusively occurs in sun-damaged skin of elderly patients.

Case report: A 57-year-old woman presented with a 4 cm nodular skin lesion in the right thigh for six months. Punch biopsy showed a tumour centred within the dermis with subcutaneous extension. It was composed of sheets of cells with pleomorphic, hyperchromatic nuclei and moderate, eosinophilic cytoplasm. Multinucleated giant cells were present. Mitotic activity was brisk with atypical forms. Necrosis, perineural or lymphovascular invasion were not seen. The epidermis was histologically unremarkable. The tumour cells showed diffuse membrane positivity for CD 10 and negative staining for AE1/AE3 and S100.

Discussion and conclusion: The differential diagnosis includes atypical fibroxanthoma, melanoma, poorly differentiated carcinoma, leiomyosarcoma and angiosarcoma. Both atypical fibroxanthoma and PDS express CD10, but the presence of subcutaneous tissue invasion excluded the possibility of atypical fibroxanthoma. Negative staining for S100 and AE1/AE3 excluded melanoma and poorly differentiated carcinoma respectively. Although the thigh is an uncommon site, morphology and immunohistochemical features were compatible with PDS. PDS has a 20-30% risk of local recurrence and metastases to skin, lymph nodes and lungs. Due to the aggressive nature, PDS needs early and accurate diagnosis and distinction from atypical fibroxanthoma.

Keywords: pleomorphic, subcutaneous, atypical fibroxanthoma

CR 18: Spindle cell differentiation in benign mixed tumour; a pitfall in breast biopsy interpretation

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Introduction: Benign mixed tumour (BMT) with spindle cell differentiation is a pitfall in breast biopsy interpretation. Diagnosis is challenging due to its rarity and overlap with other spindle cell tumours.

Case report: An 82-year-old woman with a right breast lump of three years presented to the surgical clinic. Ultrasound scan revealed circumscribed lesions at the 10 and 3 o'clock positions (BIRADS 2). Macroscopic examination revealed a whitish tumour measuring 37x7x22 mm. Microscopic examination showed a spindle cell tumour composed of intersecting fascicles of elongated cells with mildly atypical, spindled nuclei and a mitotic count of 3/2mm^2. An epithelial component was not evident. The features were of a low-grade spindle cell tumour and the differential diagnosis included, low grade metaplastic carcinoma (LGMC), phyllodes tumour (PT), leiomyosarcoma, angiosarcoma, and benign tumours/lesions such as nodular fasciitis and fibromatosis. The spindle cells showed positivity for SMA and P63. AE1/AE3 highlighted a few epithelial islands. CD34 was negative. Ki67 was 3%. A diagnosis of BMT with spindle cell differentiation was made.

Discussion and conclusion: Minimal atypia and low Ki67 was against LGMC. SMA and p63 staining ruled out leiomyosarcoma and fibromatosis. Lack of CD34 staining and low Ki67 ruled out an angiosarcoma and PT. Absence of red blood cell extravasation and plasma cells excluded nodular fasciitis and inflammatory myofibroblastic tumour. Myoepithelial cells can show variable appearances including a predominance of spindle cells. The latter in BMT requires exclusion of other spindle cell tumours and is therefore a pitfall to be aware of.

Keywords: breast, benign mixed tumour, pleomorphic adenoma, spindle cell differentiation

CR 19: Pilomatrical carcinoma of the cheek: a rare case

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Introduction: Pilomatrix carcinoma is an extremely rare malignant hair follicle tumour commonly located on the head (43%) and neck (15%) with a significant local recurrence rate.

Case report: A 60-year-old woman presented with a two-month history of a slow-growing mass on her right cheek. Physical examination showed a 40 x 30 mm, reddish, lobulated, painless swelling on the right cheek which was treated as an abscess with incision and drainage. She returned with the lump increased in size. The needle aspirate was bloody. The smears were of moderate cellularity comprising crowded clusters of small round to oval cells with hyperchromatic pleomorphic nuclei, coarse chromatin and minimal cytoplasm. Gland-like arrangement of cells with background eosinophilic material was present. The cytological differential diagnosis included basaloid squamous cell carcinoma, salivary gland tumour and neuroendocrine tumour. Ultrasound scan and computed tomography scan showed a soft tissue mass in the right maxilla with metastatic deposits in cervical nodes. Histopathology of the wide local excision revealed a dermal tumour composed of basaloid cells forming irregular nodules and thick rows with intervening dermal collagen. Keratin pearl formation, sebaceous differentiation, ghost cells, necrosis, keratinous debris and calcification were present. Mitotic activity was 8/10 HPF. Atypical mitoses were seen. The tumour infiltrated the buccinator. A diagnosis of pilomatrical carcinoma was made.

Discussion and conclusion: The differential diagnosis included benign pilomatricoma, carcinoma ex pleomorphic adenoma, ameloblastoma, other adnexal tumours and metastatic deposits. The lack of specific immunohistochemistry makers makes the diagnosis of pilomatrical carcinoma challenging. In this case the presence of cellular atypia, increased mitosis and invasion excluded pilomatricoma. Carcinoma ex pleomorphic adenoma was ruled out by the presence of ghost cells and basaloid cells. Lack of reticular stroma and palisading with reverse polarity excluded ameloblastoma.

Keywords: pilomatrix carcinoma, cheek, ghost cells, squamous pearls

CR 20: Well-differentiated primary angiosarcoma of breast; a pitfall in core biopsy diagnosis

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Introduction: Well-differentiated angiosarcoma of breast is rare, accounting for 0.05% of breast malignancies. It is a diagnostic challenge in core biopsies if not sufficiently represented with classical diagnostic features.

Case report: A 21-year-old woman presented with a right breast lump for eight months. There was no pain or nipple discharge. There were no skin lesions on examination. Family history was negative. Mammogram and ultrasound scan revealed a vascular lesion. Magnetic resonance imaging (MRI) revealed a high intensity, avidly enhancing heterogeneous signal in the right breast suggesting malignancy. Core biopsies revealed a vascular lesion with complex anastomosing empty spaces lined by bland, flat endothelial cells in a dense collagenous stroma. There was no detectable nuclear atypia or mitotic activity. Differential diagnosis included a low-grade vascular neoplasm or pseudoangiomatous stromal hyperplasia (PASH). Nipple sparing mastectomy revealed a well-circumscribed, pink tumour mass occupying the entire specimen measuring 100x90x30mm. Microscopy showed anastomosing capillary type vascular channels lined by predominantly flattened endothelial cells. Solid areas (20%) with endothelial cells displaying plump pleomorphic nuclei with hyperchromatism and increased mitotic activity (4/10HPF) were present. Strong nuclear positivity for ERG and 50% Ki67 index confirmed the histological diagnosis of well-differentiated angiosarcoma

Discussion and conclusion: Well-differentiated angiosarcoma can mimic benign vascular tumours, PASH and other breast tumours with a vascular component. Therefore, if the malignant component is not sufficiently represented in core biopsies it can lead to pitfalls as was seen in this case. High Ki67 index was useful in confirming the morphological diagnosis.

Keywords: angiosarcoma, breast, core biopsy, pitfall

CR 21: Nodular lymphocyte predominant Hodgkin lymphoma and diffuse large B cell lymphoma in a single lymph node: a rare case

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Introduction: Nodular lymphocyte predominant Hodgkin lymphoma (NLPHL) generally exhibits indolent behaviour. However, transformation into more aggressive forms can occur. distinguishing between transformation and coexisting tumours remains challenging.

Case report: A 30-year-old woman with no significant past medical history presented with a left axillary mass of two months duration. Radiological evaluation revealed multiple groups of enlarged lymph nodes and hepatic and splenic involvement, suggestive of a lymphoma. A large nodular mass with a whitish cut surface measuring 80 mm in diameter was received. Microscopically, the lymph node architecture was fully effaced by a tumor predominantly showing a diffuse growth pattern with focal nodular areas containing scattered large, atypical cells with multilobulated, irregular nuclei resembling LP cells in a background of polymorphic lymphoid cells. Additionally, the same lymph node contained areas with diffuse, confluent sheets of large atypical cells with pleomorphic nuclei and prominent nucleoli. The LP cells showed positivity for CD20, focal positivity for BOB1, CD30, MUM1 and were rosetted by T lymphocytes. The area with high grade progression showed positivity for CD20 and MUM1 and negativity for CD3, CD15, and CD30. The Ki-67 proliferation index was 50%. Diagnosis of NLPHL, pattern E with progression to diffuse large B cell lymphoma (DLBCL) was made. The patient is awaiting chemotherapy.

Discussion and conclusion: Although distinguishing between transformation and coexistence of the tumours is difficult, infra-diaphragmatic and splenic involvement are risk factors for transformation to DLBCL. Therefore, clinicoradiological evaluation and multidisciplinary review is essential when determining the management of the patient. The transformation of NLPHL to DLBCL and their coexistence significantly impacts treatment and prognosis.

Keywords: nodular lymphocytic predominant Hodgkin lymphoma, transformation, diffuse large B cell lymphoma

CR 22: Embryonal rhabdomyosarcoma presenting as a metastatic deposit in an inguinal lymph

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Introduction: Embryonal rhabdomyosarcoma (ERMS) primarily affects children and adolescents and commonly occurs in the head and neck, genitourinary tract, and extremities. ERMS of genitourinary tract commonly metastasizes to para-aortic and pelvic nodes rather than to inguinal lymph nodes.

Case report: A 24-year-old man presented with a painless left testicular swelling, progressively enlarging over two months, accompanied by weight loss. Examination revealed a firm left inguinal lymph node and a non-tender mass in the left testis. Ultrasound scan and computed tomography revealed a heterogeneous left testicular mass with para-aortic lymphadenopathy. Serum LDH level was elevated. An inguinal lymph node measuring 15mm in diameter was received. Microscopically the lymph node architecture was effaced by a tumour with an extensive peritheliomatous growth pattern comprising discohesive cells containing pleomorphic nuclei with clumped chromatin and scanty eosinophilic cytoplasm. Some cells showed plasmacytoid morphology. They were later confirmed as rhabdomyoblasts on immunohistochemistry. The tumour cells were positive for desmin and MyoD1. Pancytokeratin, PLAP and LCA were negative. The patient underwent left inguinal orchidectomy with a tumour in the para testicular region revealing similar morphology histologically. Surgery was followed by chemoradiotherapy.

Discussion and conclusion: The main differential diagnoses were lymphoma with plasmacytic differentiation and a deposit of germ cell tumour which were excluded by immunohistochemistry. Lymphatic spread can be seen in alveolar rhabdomyosarcoma but is rare in ERMS. The involvement of the inguinal lymph node in this case is atypical, as inguinal lymph nodes are usually involved when there is scrotal skin involvement or prior surgical interventions disrupting normal lymphatic pathways

Keywords: embryonal rhabdomyosarcoma, inguinal lymph node

CR 23: Tophaceous gout of the external ear

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Introduction: Gout is a metabolic disorder mainly affecting joints and bones. It is the most common inflammatory arthritis.

Case report: A 52-year-old man presented with two lumps in the anti-helix region of both ears, that were clinically diagnosed as epidermoid cysts. Histologically, the left ear lump was an epidermoid cyst. The specimen from the right ear showed dermal nodular aggregates of acellular, amorphous, pale eosinophilic needle-like material surrounded by palisading histiocytes and giant cells. The birefringent needle shaped crystals gave the yellow colour reaction of sodium urate when viewed under polarised light. Morphologically the appearances were suggestive of gouty tophus. Clinical and serological correlation were recommended since relevant clinical information was not available.

Discussion and conclusion: Gout mainly affects joints, bones, skin and soft tissue. It is associated with hyperuricemia causing saturation of monosodium urate and leading to formation of crystals. Pseudogout is usually related to chondrocalcinosis associated with calcium pyrophosphate dehydrate deposits. Blood tests show leucocytosis, high erythrocyte sedimentation rate (ESR) and C reactive protein (CRP). Assessment of synovial or bursal fluid includes white cell count and examination of crystals under polarizing light microscopy. The differential diagnoses include inflammatory conditions like chondrodermatitis nodularis-helicis and neoplastic conditions like basal cell carcinoma and squamous cell carcinoma. The initial treatment is nonsteroidal anti-inflammatory drugs and prednisolone. In refractory disease long term options including surgical excision should be considered. Gouty tophi in the external ear tend to present as cystic/solid masses. Therefore, awareness of this condition is necessary to avoid unnecessary surgical interventions.

Keywords: gout, external ear, crystals

CR 24: Acral cutaneous metastasis of endometrial adenocarcinoma; an unusual presentation of a common disease

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Introduction: Cutaneous metastases of malignant tumours are rare and account for 2% of all cutaneous tumours. Amongst these cases, acral or subungual metastases, are extremely rare. They represent only 0.1% of all cutaneous metastases. We encountered a case with an acral metastasis of endometrial adenocarcinoma which is an unusual presentation.

Case report: A middle-aged woman presented with a non-healing wound on the fingertip of her left index finger which had needed recurrent wound debridement. There was excessive bleeding at the site of the wound and she had undergone amputation of the finger due to the clinical suspicion of angiosarcoma. Histology revealed an invasive adenocarcinoma, composed of dilated cystic spaces containing predominant papillary structures and closely packed glandular structures forming a focal cribriform architecture. The glands were lined by columnar epithelial cells exhibiting moderately pleomorphic oval nuclei with prominent nucleoli and moderate eosinophilic cytoplasm. Focal squamous morules were seen. The histological differential diagnoses were aggressive digital papillary adenocarcinoma and metastatic adenocarcinoma. The tumour cells showed diffuse positivity for CK 7, ER, and negativity with CK 20. There were no myoepithelial cells highlighted with p63. The histomorphological and immunohistochemical features were of metastatic adenocarcinoma which was supported by the history of endometrial adenocarcinoma two years back.

Discussion and conclusion: Acral metastasis of endometrial adenocarcinoma is an unusual presentation. Clinical history, histomorphology, and immunohistochemistry play a major role in the definitive diagnosis. Independent mechanical and organ-specific factors of the primary tumour contribute to the pathogenesis of acral metastasis.

Keywords: acral metastasis, endometrial adenocarcinoma

CR 25: Persistent mullerian duct syndrome: a rare case of an adult infertile male with unilateral cryptorchidism

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Introduction: Persistent Mullerian duct syndrome (PMDS) is a very rare form of internal male pseudohermaphroditism due to the failure of regression of Mullerian ducts in individuals who are phenotypically male. They show 46 XY karyotypes but harbour internal female reproductive organs, which are Mullerian derivatives. We encountered a similar case scenario.

Case report: A 19-year-old man presented with bilateral gynecomastia and undescended testis on the right side. Imaging showed an 'undescended testis' with possible malignant transformation. He underwent laparoscopic exploration and excision of the 'undescended testis'. The specimen comprised a fallopian tube, an ovary and an atrophic uterus which were confirmed histologically. Testicular tissue was not seen. Persistent Mullerian duct syndrome was suggested as a possibility.

Discussion and conclusion: PMDS is a rare genetic condition where a genotypic and phenotypic male shows pseudohermaphroditism. The most common presentations include inguinal hernia, undescended testes, testicular tumour, and abdominal mass. Clinically, cases of PMDS are divided into three categories. The majority shows bilateral intra-abdominal testes in apposition analogous to ovaries. A smaller group around 20% -30% contains a unilateral undescended testis and an ipsilateral inguinal hernia which contains a testis and mullerian duct remnants, similar to our case. The rest (10%) show both the testes located in the same hernial sac along with the mullerian structures. Although this case was diagnosed retrospectively, PMDS can be confirmed with magnetic resonance imaging, karyotyping, and hormone levels if suspected at the initial presentation . Remnant Mullerian duct excision should be done due to the risk of malignant transformation.

Keywords: persistent Mullerian duct syndrome

CR 26: A case of appendiceal low-grade mucinous neoplasm with bilateral ovarian metastasis

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Introduction: Low-grade appendiceal mucinous neoplasm (LAMN) is a tumor found in the appendix that produces mucin. LAMN can spread to the peritoneum causing peritoneal pseudomyxoma (PMP) or metastasize to the ovaries leading to a clinically malignant course. LAMN and its metastases are often misdiagnosed as primary ovarian tumors. It can be challenging to differentiate them clinically and histologically and ancillary tests may be required for accurate diagnosis.

Case history: A 46-year-old woman presented with abdominal pain and was found to have bilateral adnexal masses suggestive of primary ovarian tumors measuring 20 cm and 6cm in diameter respectively. She underwent a total abdominal hysterectomy, bilateral salpingo-oophorectomy and omentectomy. During the procedure, the gynecologist noticed a swollen appendix close to the right ovarian mass and decided to remove it for further evaluation. The appendix was found to be dilated with luminal mucin. There were irregularities in the serosa, with the presence of extra-appendiceal mucin. The entire appendix was examined. The sections showed a proliferation of mucinous epithelial cells in the mucosa. The lesional cells exhibited abundant apical mucin, elongated nuclei, and low-grade nuclear atypia. Additionally, atrophy of the underlying lymphoid tissue was seen along with crypt loss and effacement of the muscularis mucosae. Broad dissection of mucin was observed, involving the serosal surface, leading to a tumour stage of pT4a. Both ovarian tumors were multiloculated cysts filled with mucoid material and lined by a single layer of intestinal-type mucinous epithelium with no evidence of atypia or invasion. Subsequent testing revealed positive staining for CK20 and negative staining for CK7. Based on the findings, the case was discussed at a multidisciplinary team meeting, where the decision was made to proceed with a right hemicolectomy due to residual LAMN at the resection margin of the appendix and follow-up despite the absence of features of PMP.

Discussion and conclusion: The case emphasizes the need to consider an appendicectomy when encountering bilateral ovarian tumors and an abnormal-looking appendix. Pathologists should use immunohistochemistry to investigate potential metastasis in cases of bilateral ovarian mucinous neoplasms if necessary. The use of CK7 and CK20 is crucial in diagnosing ovarian mucinous neoplasms.

Keywords: low-grade appendiceal mucinous neoplasm, pseudomyxoma peritonei

CR 27: Embryonal sarcoma of the liver: a rare entity

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Introduction: Embryonal sarcoma of the liver (ESL) is a rare malignant tumour of heterogeneous undifferentiated mesenchymal cells primarily affecting children aged 5-15 years.

Case report: A 17-year-old boy with a one-month history of right abdominal pain, gross hepatomegaly, and normal serum alpha-fetoprotein (AFP) levels was found to have a low-density mass (200 mm) in the right hepatic lobe on contrast enhanced computed tomography (CECT). An extended right hepatectomy revealed two well-circumscribed lesions (160mm and 120mm). Histology showed a poorly differentiated malignancy displaying sheets of polygonal spindle cells and many multinucleated giant cells in a myxo-oedematous background with necrosis and haemorrhage. The tumour cells contained markedly pleomorphic nuclei with coarse chromatin and moderate eosinophilic cytoplasm. Brisk mitoses including atypical forms were seen. Intracytoplasmic and extracellular hyaline globules highlighted by periodic acid Schiff (PAS) staining and extramedullary haematopoiesis were present. Negative staining for HepPar-1, glypican-3, cytokeratin (CAM-5.2, AEI/AE3), EMA, SALL-4 and non-specific weak staining for AFP argued against hepatoblastoma and poorly differentiated hepatocellular carcinoma. The tumour cells were also negative for CD30, LCA, S100, and desmin. Thus, the immunomorphological features combined with the strong PAS staining supported the diagnosis of embryonal sarcoma of the liver. The tumour was present at the resection margin, and the patient underwent chemoradiotherapy.

Discussion and conclusion: ESL is a rare and aggressive paediatric malignancy with metastatic potential. ESL shows no specific immune profile. Demonstration of PAS-positive hyaline globules has proved to be useful in the diagnosis. It is important to consider ESL in the differential diagnosis of a poorly differentiated paediatric liver malignancy, as it offers a favourable outcome in surgically resectable cases.

Keywords: embryonal sarcoma, liver, hyaline globules, immunohistochemistry

CR 28: A rare case of disseminated histoplasmosis post-liver transplant in a patient with primary sclerosing cholangitis

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Introduction: Disseminated histoplasmosis, caused by *Histoplasma capsulatum*, is a rare yet serious fungal infection, especially in immunocompromised patients post-organ transplantation. Here, we describe a case of disseminated histoplasmosis in a liver transplant recipient with a history of primary sclerosing cholangitis (PSC).

Case report: A 49-year-old woman with PSC underwent a liver transplant in 2022. Following transplantation, she developed PSC recurrence in the graft and was managed with prednisolone, tacrolimus, and mycophenolate mofetil (MMF). One-year post-transplant, she presented with a one-month history of fever, cough, skin lesions and lower limb pain, along with Cushingoid features. Laboratory tests revealed severe immunosuppression and imaging showed chest nodules and ground-glass opacities suggestive of a fungal infection. A skin biopsy demonstrated intracellular, round organisms consistent with Histoplasma species, supporting the diagnosis of disseminated histoplasmosis. The fungal culture results were negative, but the periodic acid-Schiff (PAS) and Grocott's methenamine silver (GMS) stains highlighted uniform, single, and clustered yeast forms.

Discussion and conclusion: The clinical presentation of fever, cough and skin lesions in an immunocompromised patient with a history of liver transplantation, along with the characteristic histological features of intracellular organisms consistent with Histoplasma species and positive PAS and GMS staining, strongly supports the diagnosis of disseminated histoplasmosis. Other fungal pathogens such as cryptococcus, aspergillus and candida were considered less likely based on the clinical context and the absence of granulomas; a typical finding in disseminated histoplasmosis in immunocompromised patients. The usual treatment involves antifungal medications such as amphotericin B and itraconazole.

Keywords: disseminated histoplasmosis, liver transplantation, primary sclerosing cholangitis, immunosuppression, fungal infection

CR 29: Functional extra-adrenal paraganglioma; a rare tumour in the retroperitoneum

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Introduction: Extra-adrenal paragangliomas are neuroendocrine neoplasms that develop from neural crest-derived progenitors. Sympathetic paragangliomas account for 1-3% of retroperitoneal tumours. Functional paragangliomas are the cause of increased blood pressure in around 0.2 % of patients with hypertension.

Case report: A 48-year-old woman with hypertension for twelve years experienced palpitation and left hypochondrial pain for six months. Radiological findings were in favour of a pancreatic tumour. A laparotomy was performed and a retroperitoneal mass, distinct from the left kidney, adrenal gland and pancreas, was removed. Macroscopy revealed a well-defined mass with a smooth, thin capsule and a predominantly solid, soft, yellowish-brown cut surface with focal cystic areas, measuring 120x90x70 mm and weighing 300 g. Microscopy revealed an encapsulated, moderately cellular tumour comprising sheets of polygonal cells, with round vesicular nuclei, small nucleoli and moderate amphophilic, granular cytoplasm, separated by fibrovascular septa. Mitoses, pseudo rosettes or comedo-type necrosis were not seen. The tumour cells showed diffuse cytoplasmic positivity for chromogranin and a Ki-67% index of <1%. Scattered S100 positive sustentacular cells were noted. There was no capsular or vascular invasion. An extra-adrenal paraganglioma was diagnosed (pT2). Her blood pressure dropped after the surgery and the post-operative period was uneventful.

Discussion and conclusion: Retroperitoneal paraganglioma is a diagnostic challenge due to nonspecific symptoms and imaging findings. The improved blood pressure favoured a functional tumour. Catecholamine metabolite levels were not performed. Without the catecholamine type, tumour grading (GAPP) was not attempted. Facilities were not available to assess germline mutations: SDH mutations have the highest risk of metastases. Given the metastatic risk and potential hereditary nature, the patient is being closely followed up.

Keywords: extra-adrenal, sympathetic, paraganglioma, retroperitoneal, hypertension

CR 30: Multicentric Castleman disease; a rare case

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Introduction: Castleman disease (CD) is a rare non-neoplastic B cell lymphoproliferation with variable clinicopathologic subtypes. Multicentric CD (MCD) is a systemic disorder with non-specific symptoms and involvement of multiple nodes and includes HHV8-associated (KSHV/HHV8-MCD) and idiopathic MCD (IMCD).

Case report: An 81-year-old woman presented with progressive left inguinal lymphadenopathy for eight months along with lethargy, decreased appetite, and weight loss over the last two months. Abdominal and pelvic CT scans revealed para-aortic, iliac, and inguinal lymphadenopathy and absence of hepatosplenomegaly. Full blood count, erythrocyte sedimentation rate, C-reactive protein (CRP), serum protein electrophoresis and serum electrolytes were within normal limits. Autoimmune and hepatitis screenings were negative. Inguinal lymph node excision biopsy measured 40x25x20 mm and showed a tan cut surface. Microscopy revealed a partially effaced nodal architecture demonstrating atretic germinal centres with prominent follicular dendritic cells surrounded by thick concentric mantle zones with an onion skin appearance, lollipop follicles, twinned germinal centres, expanded paracortex, denuded sinuses, prominent high endothelial venules and sheets of plasma cells and plasmablasts. No Reed-Sternberg cells, atypical cells, granulomata or necrosis were seen. CD3 and CD20 highlighted reactive interfollicular T and follicular B lymphocytes respectively and plasma cells and plasmablasts were negative for CD20 and CD3. In view of the presence of the above histological findings and involvement of the several groups of lymph nodes, the diagnosis of MCD was made. However, due to unavailability of HHV8 immunostaining further classification into KSHV/HHV8-MCD or IMCD was not possible.

Discussion and conclusion: KSHV/HHV8-MCD presents a significant risk of transforming into lymphoma, Kaposi sarcoma or plasma cell dyscrasia. Therefore, accurate diagnosis is crucial for determining appropriate treatment. HHV8 immunohistochemistry to demonstrate KSHV/HHV8-infected plasmablasts, retroviral screening to exclude HIV infection and serology to assess KSHV viral load are required for the diagnosis of KSHV/HHV8-MCD. In this case we faced challenges in classifying MCD due to limited availability of the diagnostic tests. Considering the age of the patient close follow up is recommended.

Keywords: Castleman disease, HHV8-associated, idiopathic multicentric Castleman disease.

CR 31: Transformation of chronic lymphocytic leukaemia into Hodgkin lymphoma: a rare form of Richter's transformation

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Introduction: The transformation of chronic lymphocytic leukaemia (CLL) to a large cell lymphoma is traditionally known as Richter's transformation and occurs in approximately 5% of CLL in its course. However, the transformation of CLL to Hodgkin lymphoma (HL) is even less frequent than this. Here, we report a case of a woman with CLL who developed HL during the course of her disease

Case report: An 81-year-old woman with CLL, on follow-up for the last 40 years, presented with shortness of breath, confusion, elevated LDH and pancytopenia. Magnetic resonance imaging (MRI) and positron emission tomography/computed tomography (PET-CT) showed extensive nodal disease above and below the diaphragm with involvement of liver, spleen and bone marrow. The bone marrow trephine showed large areas of CD68-positive epithelioid histiocytes forming granulomas interspersed with Hodgkin Reed-Sternberg cells which were positive for CD30, MUM1 and EBER, weakly positive for PAX5 and negative for CD20 and CD3. The residual bone marrow showed mild suppression of haemopoiesis, and the background showed CD20, CD23, CD5 positive and Cyclin-D1 negative small cells in keeping with residual CLL. With these findings, a diagnosis of Richter's transformation to classical Hodgkin lymphoma in a background CLL was made. Despite the standard treatment of six cycles of adriamycin, bleomycin, vinblastin and dacarbazine, the patient sadly passed away due to disease progression.

Discussion and conclusion: Clinical suspicion of Richter's transformation is crucial whenever there is unresponsiveness to the standard treatment for CLL in its course. Detection of transformation into HL implies poor clinical outcomes despite various modalities of treatment. Further research is needed to develop novel therapeutic agents to improve the outcome.

Keywords: chronic lymphocytic leukaemia, Hodgkin lymphoma, Richter transformation.

CR 33: A rare case of myeloid sarcoma presenting as bilateral testicular masses and multiple soft tissue nodules in an elderly male

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Introduction: Myeloid sarcoma is a tumour mass consisting of myeloblasts with or without maturation occurring at an anatomical site other than bone marrow. By definition, it should efface the normal tissue architecture. This rare disease is reported in patients with acute myeloid leukaemia (AML) but may also present as a transformation of other myeloid neoplasms, including myeloproliferative neoplasm.

Case report: A 74-year-old man presented with bilateral testicular masses and two soft tissue masses involving the left thigh and back of the chest. Core biopsy of the left thigh mass was suggestive of a high-grade non-Hodgkin lymphoma (NHL). However, tissue was inadequate for immunohistochemical studies. A wide local excision was done. There was a globular firm mass measuring 35x35x30mm with whitish cut surfaces. Histology revealed an infiltrating tumour composed of sheets of discohesive neoplastic cells with enlarged vesicular nuclei, convoluted nuclear membranes, fine nuclear chromatin and scanty eosinophilic cytoplasm. Mitoses were numerous. The differential diagnoses were high-grade NHL, myeloid sarcoma and metastatic deposits of a poorly differentiated carcinoma. Neoplastic cells showed diffuse membrane staining for LCA and patchy, strong cytoplasmic staining for myeloperoxidase. Few scattered neoplastic cells were positive for CD34, CD56 and CD117. Ki 67 index was 70%. CD3, CD20, CD79a, TdT, AE1/AE3, and CD99 were negative. Diagnosis of myeloid sarcoma was confirmed and the patient was referred for bone marrow biopsy, which revealed a myeloproliferative neoplasm (unclassifiable). The patient responded to treatment with hydroxyurea and his testicular masses and chest wall nodule disappeared following therapy.

Discussion and conclusion: Myeloid sarcoma could be the first presentation of AML or other myeloid neoplasms. A comprehensive evaluation with genetic studies is needed for correct classification, prognostication and therapy planning.

Keywords: Myeloid sarcoma, acute myeloid leukaemia, testicular mass

CR 34: B lymphoblastic lymphoma presenting as a spinal extradural mass

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Introduction: Lymphoblastic lymphoma is a rare aggressive neoplasm of T-cell or B-cell precursors in which the B cell type is uncommon and extra-nodal presentation is rare. Occurrence of these lymphomas primarily in the extradural space without other previously detected lymphomatous foci is extremely rare. A single case is reported in the literature of a B-lymphoblastic lymphoma presenting as a spinal extradural lesion.

Case report: A 10-year-old, previously healthy boy presented with right thigh pain for two months The pain worsened with walking. Magnetic resonant imaging (MRI) showed an extradural spinal mass involving the lower lumbosacral spine (L4 -S4). Multiple tissue fragments from the mass were received for imprint cytology and histology. Imprint cytology revealed a small round blue cell tumour. Histology revealed a proliferation of small to medium sized monomorphic cells with hyperchromatic nuclei with condensed chromatin and scanty cytoplasm. Mitoses were frequent. Our differential diagnoses were lymphoma, Ewings sarcoma and nephroblastoma. The cells showed strong and diffuse cell membrane positivity with LCA, CD20, CD99 and nuclear positivity with TdT. The background cells were highlighted by CD3. They were negative for synaptophysin. Blood picture and the bone marrow did not show features of a lymphoproliferative neoplasm.

Discussion and conclusion: Lymphoblastic lymphoma presenting as a spinal extradural mass lesion in children is exceptionally rare. The clinical, radiological, and histological features can sometimes closely resemble those of other conditions that also manifest as extradural mass lesions. Therefore, considering lymphoblastic lymphoma as a potential differential diagnosis when evaluating a child with such symptoms can lead to early diagnosis and prompt initiation of treatment, ultimately resulting in a better prognosis.

Keywords: B lymphoblastic lymphoma, spinal extradural lesion

CR 35: CD20 negative diffuse large B cell lymphoma; a diagnostic pitfall

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Introduction: CD 20 and CD79a are the most commonly used markers to identify B cell lineage in lymphomas. However, aggressive subtypes of diffuse large B cell lymphoma (DLBCL), terminally differentiated B cell lymphomas, and rituximab therapy can cause a loss of CD 20 expression, leading to diagnostic difficulties. We report a case of CD20 and CD79a negative DLBCL.

Case report: A 75-year-old woman presented with right axillary lymph node enlargement. Contrast enhanced computed tomography (CECT) showed para-aortic lymphadenopathy. Histology of the lymph node biopsy revealed lymph nodal tissue with completely effaced architecture due to an infiltrating tumour which was composed of sheets of large atypical lymphoid cells with pleomorphic nuclei and pale eosinophilic to clear cytoplasm. Mitotic activity was brisk. The tumour cells were negative for CD20, CD79a, CD3, CD5, CD10, and CD30; Ki67 index was 80%. Subsequently, PAX5 was performed and revealed moderate to weak nuclear positivity in atypical cells, which confirmed the B cell origin. Accordingly, the diagnosis of DLBCL was made.

Discussion and conclusion: When handling large cell lymphomas, the existence of CD 20 and other membrane and cytoplasmic B cell marker negative DLBCLs should also be considered. However, at least one B cell transcription antigens such as PAX5, OCT-1, and BOB2 is usually retained in these tumours. CD 20 negative DLBCLs have aggressive behaviours with often extra-nodal spread and resistance to rituximab. CD 20 negative DLBCL should not be missed and B cell transcription markers should be done in suspicious cases.

Keywords: diffuse large B cell lymphoma, CD20 negative

CR 36: Primary ileal follicular lymphoma manifesting as a stricture

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Introduction: Primary gastrointestinal non-Hodgkin Lymphoma (NHL) is rare compared to secondary gastrointestinal NHL. The most common subtypes are mucosa associated lymphoid tissue lymphoma and diffuse large B cell lymphoma. Follicular lymphoma is relatively rare and frequently affects the small bowel. It usually presents as nodules, masses or polyps while other morphologies are exceedingly rare. Here we report small bowel follicular lymphoma presenting as a stricture with bowel obstruction.

Case report: A 59-year-old previously well man presented with vomiting and constipation for three days. A clinical diagnosis of intestinal obstruction was made. Peripheral lymphadenopathy was not present. Exploratory laparotomy revealed a small intestinal stricture. The resected specimen of small intestine showed an annular ulcer with ileal wall thickening which extended up to the ileocecal junction. Histology of the stricture revealed a diffusely infiltrating tumour composed of small, mature, atypical lymphocytes resembling centrocytes with occasional centroblasts arranged in scattered follicles. Diffuse regions were not present. Mucosal erosions and ulcerations were present with scattered residual viable crypts. Immunohistochemically, these cells were positive for CD20, CD10 and BCL2 and negative for CD3, CD5 and cyclin D1. CD23 highlighted the follicular dendritic cell meshwork. Ki 67 was 20%. Accordingly, a diagnosis of follicular lymphoma grade I to II was made. The tumour had spread to regional mesenteric lymph nodes.

Discussion and conclusion: Small intestinal strictures are commonly due to Crohn's disease, tuberculosis, neuroendocrine tumours and adenocarcinoma. Follicular lymphoma is an extremely rare cause of bowel strictures. The presence of dense mural lymphocytic infiltration should be handled cautiously and possibility of lymphoma should be considered.

Keywords: small bowel follicular lymphoma, ileal stricture

CR 37: Lipofibroadenoma of thymus with an associated Type B1 thymoma

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Introduction: Lipofibroadenoma is a rare benign tumour of the thymus resembling fibroadenoma of the breast localized to the anterior mediastinum. Of the six reported cases so far, three were associated with type B1 thymoma. The neoplastic nature of the epithelial and lipofibromatous components remains unclear, suggesting that a thymic epithelial cell precursor may contribute to tumour development. Some consider it to be a hamartoma. In this report, we present a rare case of thymic lipofibroadenoma associated with type B1 thymoma.

Case report: A 15-year-old girl presented with fever, cough and shortness of breath. Computed tomography (CT) revealed a large lobulated anterior mediastinal mass measuring 18 x 15 x 10 cm. The tumour was excised along with the thymus and was received in several pieces. Sectioning showed a yellowish brown, solid and lobulated surface. Microscopy revealed thymic tissue with a tumour composed of narrow strands of bland looking epithelial cells surrounded by fibrotic and hyalinized stroma. The stroma contained foci of multiple adipocytes. This area amounted to 60% of the total tumour mass. Admixed with this tumour, areas with lobules of thymic cortex-like-tissue separated by thin fibrous septae were seen. This area contained scattered epithelial cells within densely packed small lymphocytes. Multiple Hassall's corpuscles were identified. Due to the fragmented nature of the specimen, margin involvement could not be assessed. The strands of bland looking epithelial cells and clusters of thymic epithelial cells were highlighted by pancytokeratin. The lymphocytes were positive for TdT and CD3. A diagnosis of a lipofibroadenoma with an associated type B1 thymoma was made.

Discussion and conclusion: Lipofibroadenomas are rare tumours that resemble fibroadenomas of the breast in low power view, with predominance of fibrous tissue over adipocytes and delicate strands of epithelial cells lacking a myoepithelial cell layer. Three of six reported cases were associated with an adjacent type B1 thymoma. Identifying the benign nature of the lipofibroadenoma component is important. The diagnosis relies on identifying pancytokeratin-positive epithelial strands in a fibrous stroma containing adipocytes. Lipofibroadenomas are rare tumours of the thymus and may be associated with type B1 thymoma. Reporting such rare cases is essential to raise awareness and avoid misdiagnosis.

Keywords: lipofibroadenoma, type B1 thymoma

CR 38: Nevus lipomatosus superficialis and its potential association with metabolic syndrome: a case series

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Introduction: Nevus lipomatosus superficialis (NLS) is a rare naevoid anomaly characterised by nodules containing ectopic fatty tissue in the corium. The aetiology of NLS remains unknown. This case series describes the epidemiological, clinical, and histopathological features of NLS and explores its potential relationship with metabolic syndrome.

Case series: Nine cases of histopathologically confirmed NLS presenting to the District General Hospital Kilinochchi over two years (January 2021 to December 2022) were reviewed. Among the nine cases analysed, 55.5% (5/9) were females, and the duration of the lesions ranged from three to 25 years. The size of lesions varied from 03 x 02 cm to 10 x 07 cm, with locations including the buttocks (4/9), shoulder (2/9), back of the neck (1/9), back of the chest (1/9), and thigh (1/9). The mean age of the patients was 32.2 years, ranging from 14 to 45 years. Fasting blood sugar (FBS) levels were available for seven patients (57.1%), and four of them were receiving treatment for diabetes mellitus. Total cholesterol levels had been performed in only two patients, both of whom showed levels exceeding the upper normal limit. There was no reported familial tendency among the patients.

Discussion and conclusion: Our findings suggest an association between NLS and FBS and total cholesterol levels, raising the possibility of a link between NLS and metabolic syndrome. However, due to the retrospective nature and limitations in data collection, further studies are warranted to explore this association more comprehensively.

Keywords: nevus lipomatosus cutaneous superficialis, papules, metabolic syndrome, ectopic fatty tissue.

CR 39: Angiomyomatous hamartoma of the lymph node; a rare cause of isolated lymphadenopathy

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Introduction: Angiomyomatous hamartoma is a benign vascular lesion of lymph node of unknown aetiology. It may represent a previous inflammatory process or chronic blockade of lymphatic flow. It is characterized by replacement of the lymph node by the smooth muscle cells, blood vessels of varying calibre and fibrous tissue. It is usually solitary and commonly involves the inguinal and femoral lymph nodes. It is asymptomatic and rarely causes lymphoedema of the lymph node. Only a few cases have been reported in the literature.

Case report: A 31-year-old man presented with a gradually enlarging right inguinal mass for three months. He had no other lymphadenopathy or associated symptoms. Excision biopsy was done. The mass was firm to hard in consistency and measured 30x25x10 mm. The cut surface was homogenously whitish. Microscopy revealed a lymph node with altered architecture. The parenchyma of the node was replaced by fibrous tissue. There were blood vessels of varying calibre and a smooth muscle proliferation. Residual lymphoid follicles were noted at the periphery of the cortex. The capsule was thickened and no subcapsular or medullary sinuses were seen. There were no atypical cells or mitoses.

Discussion and conclusion: Differential diagnoses for AMH include angiomyolipoma and vascular transformation of lymph node sinuses. The smooth muscle in AMH is positive for SMA and desmin. The vascular endothelial cells are positive for CD 34. Angiomyolipoma shows positivity for HMB 45 in the spindle cell component. However, these benign entities can be differentiated by careful microscopic assessment. It is important to consider AMH when evaluating an isolated lymphadenopathy with vascular proliferation.

Keywords: angiomyomatous hamartoma, lymphadenopathy

CR 40: Ovarian adult granulosa cell tumour associated with endometrioid carcinoma within an endometrial polyp

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Introduction: Adult granulosa cell tumour (AGCT) is the commonest sex cord-stromal tumour which accounts for 1% of all ovarian tumours. Rarely, AGCT is known to be associated with endometrial carcinoma (ECA).

Case report: A 72-year-old woman presented with lower abdominal pain and postmenopausal bleeding of two months. The ultrasound scan revealed a left ovarian tumour. She underwent a total abdominal hysterectomy and bilateral salpingo-oophorectomy. Macroscopy revealed an endometrial polyp measuring 40x22x18 mm with a tan cut surface and filling the endometrial cavity. The intact left ovary was 35x25x18 mm. It showed a soft, friable, tan colour tumour with cystic areas, measuring 30x22x15 mm. Microscopy revealed solid sheets, nests, and a trabecular and gyriform arrangement of tumour cells surrounded by fibrous stroma and focal cystic areas. The tumour cells had round to ovoid, pale, irregular nuclei with nuclear grooves, pale scanty cytoplasm and a mitotic count of 4/10 high power fields. High-grade tumour cells were not seen. The reticulin stain was seen around groups of cells. The tumour cells showed diffuse positivity for calretinin. These features were compatible with AGCT: FIGO stage IA. The endometrial polyp showed tubular and branched endometrial glands. There were focal closely packed glands with cribriform areas, and the lining epithelium showed mild atypia, compatible with well-differentiated ECA in the background of endometrial hyperplasia, confined to the endometrial polyp (FIGO stage IA). The right ovary was normal.

Discussion and conclusion: The occurrence of ECA is most likely due to the oestrogenic manifestations of the AGCT. Although endometrial hyperplasia is reported in around 1/3 of patients with AGCT, ECA is reported in less than 5% of cases with most being well-differentiated tumours, as was in this patient.

Keywords: adult granulosa cell tumour, endometrioid carcinoma

CR 41: Endometrioid borderline tumour; a rare ovarian tumour

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Introduction: Borderline tumours (BT) of the ovary have uncertain clinical behaviour. The endometrioid-type BT is rare, comprising only 0.2% of ovarian epithelial neoplasms. Up to 40% of cases have co-existing endometriosis.

Case report: A 44-year-old woman presented with abdominal pain for two months. The ultrasound scan revealed a left ovarian cyst, and a left-side salpingo-oophorectomy was performed. Macroscopy revealed an intact, multilocular cyst measuring 100x60x35 mm, predominantly showing a thin wall of 2-6 mm in thickness. There was a focal tan coloured papillaroid area measuring 10x7x6 mm. The fallopian tube was unremarkable. Microscopically, the papillaroid area showed intracystic papillary projections with fibrovascular cores. The fibrous ovarian cyst wall showed lobules of closely packed irregular glands and papillae. These papillae and glands were lined by stratified, columnar epithelium showing mild to moderate nuclear atypia. High-grade nuclear features were not present. Increased mitoses were seen focally. Some areas showed mucinous metaplasia. There was no evidence of squamous differentiation. The cyst lining of the other parts showed a similar stratified columnar epithelium. There was no evidence of confluent or destructive-type invasion. The histomorphological features of the ovarian cyst were in favour of endometrioid BT having both intracystic and adenofibromatous growth patterns. Endometriotic foci were not seen. The patient is being followed up currently.

Discussion and conclusion: There was no evidence of endometriosis seen in this specimen. Close follow-up was advised as endometrioid-type BT can be bilateral and around 40 % can have co-existing endometrial hyperplasia and/or endometrial endometrioid carcinoma.

Keywords: endometrioid, borderline tumour, ovary

CR 42: A foetus with Edward syndrome; a postmortem study of a second-trimester miscarriage

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Introduction: Trisomy 18/Edward syndrome (ES) occurs in around 1 in 6000 new-borns and is associated with a variable combination of multiple congenital abnormalities.

Case report: A 30-year-old woman in her first pregnancy underwent an antenatal ultrasound scan at a period of amenorrhoea of 21 weeks. It revealed choroid plexus cysts, open spina bifida, and an omphalocele in the foetus. Amniocentesis was performed and the fluorescence in situ hybridization (FISH) showed three hybridization signals for chromosome 18. Ten days later, a missed miscarriage was diagnosed, and a female foetus, weighing 240g, was delivered by assisted vaginal delivery. A pathological post-mortem was performed. The crown heel length and the foot length were compatible with the period of gestation. External examination revealed clenched fists with overriding fingers of both hands and spina bifida in the lumbar region. Internal examination revealed intact tan, thin-walled cysts in both lateral ventricles of the brain, measuring 19x6x5 mm and 16x7x5 mm. Both cysts contained clear fluid, and the inner surfaces showed minute papillae. An omphalocele was not present. The umbilical cord contained only two vessels. Microscopically, cysts in both ventricles showed papillary structures with thin fibrovascular cores lined by a single layer of cuboidal to columnar epithelium with regular round nuclei. Counselling was arranged for the parents.

Discussion and conclusion: ES has a high risk of foetal demise and around 1% recurrent risk in subsequent pregnancies. Choroid plexus cysts are reported in 1-2% of foetuses in the second trimester and a third of these are associated with ES. Spina bifida is reported in around 6% of cases and a single umbilical artery in one-third of cases. Post-mortem findings confirm the true constellation of abnormalities.

Keywords: Edward syndrome, choroid plexus cysts, spina bifida

CR 43: Squamoid ductal eccrine carcinoma

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Introduction: Squamoid ductal eccrine carcinoma is an uncommon sweat gland malignancy, characterised by squamous and ductal differentiation. Its rarity and the deep-seated location of the ductal component, render its diagnosis challenging. We report a case of squamoid ductal eccrine carcinoma to underscore its distinctive histopathological features and diagnostic implications.

Case report: A 78-year-old man presented with a three-month history of a gradually enlarging scalp lump. Macroscopic examination revealed fragmented tissue. Microscopic examination showed skin and subcutaneous tissue with an invasive carcinoma within the dermis, extending to the subcutaneous tissue. There was superficial squamous differentiation in most of the fragments with deep-seated ductal differentiation in a few fragments. The ducts were lined by cuboidal cells with cytological atypia. The stroma was desmoplastic and harboured a dense inflammatory cell infiltrate. Immunostaining with EMA highlighted the ductal component with strong membrane positivity seen in ductal epithelial cells.

Discussion and conclusion: Squamoid ductal eccrine carcinoma is a rare variant of sweat gland carcinoma, primarily affecting the head and neck region of elderly men. Its histological features, including the biphasic appearance with squamous and ductal differentiation, pose diagnostic challenges. It may be indistinguishable from invasive squamous cell carcinoma, if the deep-seated ductal component is not included in the biopsy. Immunostaining with EMA confirms the eccrine differentiation. Absence of cytological atypia and lack of areas resembling squamous cell carcinoma distinguished this from microcystic adnexal carcinoma. Optimal management entails wide local excision with adjuvant therapy in advanced cases.

Keywords: eccrine carcinoma, sweat gland tumour, ductal differentiation

CR 44: Ureteric leiomyoma; a rare case

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Introduction and objectives: Ureteric leiomyoma is a rare benign tumour originating from smooth muscle cells of the ureter. While typically asymptomatic, it can present with symptoms such as flank pain, haematuria, or urinary tract obstruction.

Case report: A 38-year-old woman presented with complaints of left side loin pain for a few weeks. Upon detailed history taking, there were no significant past medical or surgical interventions related to the urinary tract. Laboratory investigations including renal function tests were within normal limits. Surgical excision of the lesion was performed, and macroscopic examination revealed a well-defined mass within the distal left ureter with a whorled and white cut surface. Microscopic examination showed interlacing bundles of smooth muscle cells within a collagenous stroma, compatible with a leiomyoma. Notably, no atypical features were observed.

Discussion and conclusion: Ureteric leiomyomas are uncommon entities and pose diagnostic challenges due to their nonspecific clinical presentation. Imaging modalities such as CT urography play a crucial role in delineating the extent and characteristics of the lesion. Histopathological examination remains the gold standard for definitive diagnosis, characterized by the presence of smooth muscle bundles without cytologic atypia, increased mitotic activity or tumour necrosis. This case underscores the importance of considering ureteric leiomyoma in the differential diagnosis of patients presenting with loin pain and urinary tract obstruction. Timely diagnosis and appropriate management are essential to alleviate symptoms and prevent complications associated with ureteric leiomyomas.

Keywords: leiomyoma, ureter

CR 45: Epithelioid angiomyolipoma; a case report highlighting morphological features and differential diagnosis

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Introduction: Angiomyolipomas are a group of mesenchymal tumours categorised under the perivascular epithelioid cell phenotype consisting of adipose tissue, smooth muscle and thick-walled vessels. In contrast to the classic type, epithelioid angiomyolipoma (EAML) is a distinct rare subtype containing minimal fat and epithelioid cells over 80%. EAML has the potential to be malignant, recur and metastasize. It can mimic renal cell carcinoma radiologically. Here we report a rare case of sporadic EAML.

Case report: A 64-year-old mentally subnormal woman with congenital hypothyroidism and a history of breast carcinoma was found to have a right renal mass during a routine follow-up. Contrast enhanced computed tomography (CECT) abdomen showed an exophytic renal cortical mass in the upper pole of the right kidney suggestive of renal cell carcinoma. A radical nephrectomy showed a friable, fragmented tumour measuring 35x30x20 mm. Histology revealed a well-defined tumour comprising plump spindle cells, sheets of epithelioid cells, mature adipose tissue, and dysmorphic, thick-walled hyalinized blood vessels lacking elastic lamina. No abnormal mitoses or necrosis were seen. Epithelial cells constituted about 80% of the tumour. The tumour cells were positive for HMB45 and negative for PAX8 and pancytokeratin, consistent with an EAML.

Discussion and conclusion: Histological differentials for renal EAML include renal cell carcinoma, adrenal cortical neoplasms, melanoma, epithelioid gastrointestinal stromal tumours, and metastatic hepatocellular carcinoma. EAML shows co-expression of melanocytic and myoid markers, with negative cytokeratin and EMA reactivity. Inhibin and calretinin are useful in the diagnosis particularly for differentiating EAML from adrenal cortical tumours, which are also cytokeratin-negative and positive for melanocytic markers. In this case histomorphology and immunophenotyping was consistent with EAML excluding the main differential diagnosis of clear cell renal cell carcinoma.

Keywords: kidney, epithelioid angiomyolipoma

CR 46: Giant cell tumour of femur following denosumab therapy; histological features and diagnostic pitfalls

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Introduction: Denosumab is a relatively new targeted therapy for locally advanced, recurrent and metastatic giant cell tumour of bone (GCTB). Denosumab inhibits the receptor activator of nuclear factor kappa-B ligand (RANKL), which causes a reduction in monocyte recruitment and osteoclast-like giant cell (OLGC) formation, limiting bone destruction. Denosumab-treated GCTB (DT-GCBT) exhibits diverse morphological features which can pose diagnostic challenges.

Case report: We received a surgically resected right distal femur of a 31-year-old man who had a prior radiological and tissue diagnosis of conventional GCTB of the right femur, three- months back. The distal epiphyseal-metaphyseal region showed a cystic-solid lesion with haemorrhage. Histology showed sheets of uniform mononuclear cells, focal spindle-storiform areas, osteoid and peripheral new bone formation. OLGC with few nuclei were noted sparsely. Extensive sampling did not show areas of conventional GCTB. There was no cellular atypia, increased mitoses, neoplastic bone formation or curvilinear bone trabeculae. The history of three-months pre-treatment with denosumab therapy led to the histological diagnosis of DT-GCTB.

Discussion and conclusion: DT-GCTB shows many histological deviations from conventional GCTB including absence/reduction of OLGCs, maturation of stromal cells towards osteoblasts and tumour replacement by fibrous and osteoid matrix. DT-GCTB generally lacks nuclear atypia, increased mitoses, atypical mitoses, extensive necrosis, and bone invasion. The absence or sparsity of OLGC can be a diagnostic challenge in cases of DT-GCTB. The clinicians should inform the pathologist about the pre-treatment and the pathologist should be aware of the spectrum of histological changes in DT-GCTB, to prevent potential diagnostic pitfalls as it poses therapeutic and prognostic implications.

Keywords: denosumab therapy, giant cell tumour of bone

CR 47: Splenic lymphangioma in an adult; a rare entity

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Introduction: Splenic lymphangiomas are rare benign vascular lesions, primarily manifested in children. We present a case of splenic lymphangioma incidentally found in a 68-year-old woman with multiple comorbidities. She initially presented with a right lower abdominal pain, which led to the discovery of the splenic lesion through imaging studies.

Case report: A 68-year-old woman with a medical history of diabetes mellitus, hypertension, ischemic heart disease, and chronic kidney disease presented with a right lower abdominal pain. Ultrasound revealed a heterogeneous mass-like lesion near the spleen. Contrast-enhanced computed tomography (CECT) showed multiple ill-defined hypo-enhancing focal lesions within the splenic parenchyma. No other abdominal abnormalities were noted on imaging, and there were no clinical features suggestive of malignancy or infection. Splenectomy was then performed due to the suspicion of a neoplastic or an inflammatory aetiology. Macroscopically, the spleen measured 120x65x45mm, with the outer surface showing multiple, white-coloured lesions. On sectioning, multiple cystic lesions ranging from 3 to 18mm in diameter were observed underneath the capsule, some of which contained gelatinous material. Microscopic examination revealed cysts composed of vascular channels lined by a single layer of endothelial cells, filled with eosinophilic amorphous proteinaceous contents. Adjacent splenic parenchyma appeared unremarkable, with no evidence of calcification, atypia, or malignancy. Histopathological features were consistent with a diagnosis of splenic lymphangioma.

Discussion and conclusion: Splenic lymphangiomas are congenital anomalies of the lymphatic system, with a predilection for paediatric populations, and are exceptionally rare in adults. The prognosis following complete resection is generally favourable. Post-operative surveillance should focus on monitoring for complications related to splenectomy.

Keywords: splenic lymphangioma, benign vascular lesions

CR 48: Leukaemia cutis in myelodysplastic syndrome

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Introduction: Leukaemia cutis is the cutaneous infiltration of neoplastic leukocytes or their precursors, causing clinically detectable skin lesions. It usually occurs in the setting of a previously diagnosed systemic leukaemia or lymphoproliferative disorder/myelodysplastic syndrome(MDS).

Case report: A 60-year-old man presented with a left leg non-resolving ulcer of three months duration. He was found to have MDS 6 months back, following the incidental finding of pancytopenia. An incisional biopsy was done, and the histology revealed an ulcerated epidermis and subepidermal grenz zone. The dermis and subcutis displayed a diffuse sheet like infiltrate of round to oval atypical cells with vesicular nuclei, irregular nuclear membranes, prominent single nucleoli and ill-defined cytoplasm. There were frequent mitotic figures with atypical forms. These atypical cells were positive for myeloperoxidase and negative for CD3 and CD 20, confirming the diagnosis of myeloid leukaemia cutis.

Discussion and conclusion: Though the cutaneous involvement of leukaemic cells in patients of MDS is a rare phenomenon, the index of suspicion should be very high when examining dense cutaneous infiltrates of inflammatory cells in the setting of MDS. Leukaemia cutis can be confused with other inflammatory conditions and cutaneous lymphomas both clinically and histologically. Hence clinical correlation, careful histological assessment of the infiltrate and immunohistochemistry are important in determining the correct diagnosis in these cases. The early and accurate detection of leukaemia cutis in patients with MDS is crucial as this is indicative of concomitant or impending acute leukemic transformation, hence can have significant prognostic implications.

Keywords: myelodysplastic syndrome, leukaemia cutis, cutaneous lymphoma

CR 49: A rare case of complex fibroadenoma with squamous metaplasia

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Introduction: Fibroadenoma is the most common breast neoplasm in adolescent and young women. Complex fibroadenoma is a fibroadenoma with cysts >3 mm, sclerosing adenosis, calcifications or papillary apocrine metaplasia. Although fibroadenomas can show wide variations in morphology, squamous metaplasia is an uncommon finding.

Case report: A 35-year-old woman presented with a painless, firm, mobile lump in the right breast of two months duration. Ultrasound scan of the right breast showed a round hypoechoic BIRADS 4a lesion with no axillary lymph node enlargement. She underwent a core biopsy that was reported as "benign breast lesion, however possibility of a phyllodes tumour need to be excluded - B3". The wide local excision specimen showed a circumscribed whitish solid lesion with cystic areas. Microscopy revealed a benign fibroepithelial lesion with cysts > 3 mm and a few dilated ducts that were lined by benign stratified squamous epithelium and filled with keratinous material. Epithelial or stromal cell atypia, increased stromal cellularity, subepithelial accentuation of stroma, stromal overgrowth, carcinoma in situ or invasive malignancy were not identified despite thorough sampling.

Discussion and conclusion: Squamous cells can be seen in a number of breast lesions including phyllodes tumour, nipple adenoma, metaplastic carcinoma and fibroadenoma. Although rare, the distinction between fibroadenoma with squamous metaplasia and above-mentioned differential diagnoses is important due to the differences in their biological behaviour and treatment modalities. Therefore, adequate sampling, careful morphological assessment and clinicopathological correlation is paramount for a definitive diagnosis. Squamous metaplasia in a fibroadenoma is a rare finding which poses diagnostic challenges since it may raise suspicion for malignancy.

Keywords: complex fibroadenoma, squamous metaplasia, breast lesions, differential diagnoses

CR 50: Scrotal calcinosis; a rare occurrence

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Introduction: Scrotal calcinosis is a rare and benign condition characterised by multiple calcified nodular deposits in scrotal skin.

Case report: A 36-year-old man presented with multiple, cutaneous nodules of scrotal skin for three years that recently increased in size. The nodules were bilateral with no discharge or inflammatory signs. There was no history of itching, ulceration, infection, trauma or metabolic disease. Renal function tests were normal. Surgery was performed. The operative specimen included fragments of skin with multiple calcified nodules measuring 2 mm to 5 mm. Microscopy revealed multiple globular calcified nodules devoid of a lining epithelium, within the dermis. A few epidermoid cysts were also seen with intact epithelium. The surrounding stroma was fibrosed and showed collections of foreign body type giant cells. Inflammation was minimal. Granulomata were not seen. The epidermis was histologically unremarkable. The final diagnosis was scrotal calcinosis probably due to dystrophic calcification of epidermoid cysts. Recurrence of nodules with similar morphology was reported eight after months of surgery.

Discussion and conclusion: Scrotal calcinosis usually gives rise to few symptoms, and the impact is mainly functional and aesthetic. Although pathogenesis is controversial, calcification of pre-existent epidermoid cysts appears to be the most likely. In this case, the spectrum of changes found in histology, coupled with clinical findings support the theory of dystrophic calcification of epidermoid cysts. Surgical management is the treatment of choice that provides excellent results. Recurrences have been described but malignant transformation has not been reported to date.

Keywords: scrotum, scrotal calcinosis, dystrophic calcification, epidermoid cyst

CR 51: Multilocular cystic renal neoplasm with low malignant potential

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Introduction: Multilocular cystic renal neoplasm with low malignant potential (MCNLMP) is a renal cortical neoplasm with a distinct multilocular gross appearance and a low-grade clear cell lining.

Case report: A 45-year-old man was investigated for right iliac fossa pain. Contrast enhanced computed tomography (CECT) revealed a Bosniak type IV renal cyst in the right kidney with no evidence of metastasis. Right nephrectomy was done. Macroscopy revealed a multilocular, collapsed cyst measuring 80 x 80 x 50 mm occupying the entire lower pole and mid zone of the kidney. Papillary structures or solid areas were not seen. Extensive sampling was done. Microscopy revealed an entirely cystic neoplasm composed of multiple cysts of varying sizes. The cysts were separated by septae containing tumour cells clusters without expansile growth. The constituent polygonal cells showed uniform, hyperchromatic nuclei, inconspicuous nucleoli (WHO/ ISUP nuclear grade 1), and abundant clear cytoplasm with distinct cell borders. Mitoses were sparse. Haemorrhage was seen within the cyst lumina. The ureteric, perinephric and renal vessel resection margins were free of tumour. Necrosis or lympho-vascular tumour emboli were not seen. The final diagnosis was MCNLMP. Two years following surgery, the patient is well with no evidence of recurrence or metastasis.

Discussion and conclusion: MCNLMP is a tumour composed of numerous cysts, the septa of which contain groups of clear cells indistinguishable from grade I clear cell renal cell carcinoma (CCRCC). According to available literature, MCNLMPs has an excellent prognosis, when compared with other variants of RCC. There are no reports of progression, metastasis or cancer related death with long term follow up. Recurrences are reported very rarely. Accordingly, nephron sparing surgery is recommended as a therapeutic strategy.

Keywords: multilocular cystic renal neoplasm with low malignant potential, Bosniak type, clear cell renal cell carcinoma

CR 52: Apocrine carcinoma of the breast; a rare occurrence

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Introduction: Apocrine carcinoma of the breast is a rare morphological entity with a specific hormonal profile.

Case report: A 62-year-old woman, presented with a self-detected lumpy area in her left breast. Mammogram revealed a BIRADS IVa hypoechoic lesion in the periareolar region measuring 10.2x9.2 mm. Core biopsy showed an infiltrating carcinoma composed of glandular structures and single cells in a densely fibrotic stroma. The constituent cells showed moderate nuclear pleomorphism, prominent nucleoli and abundant eosinophilic cytoplasm. Following core biopsy, she underwent left radical mastectomy and level 2 axillary clearance. The cytomorphological features were similar to the core biopsy. Foci of intermediate grade cribriform type DCIS were seen. Cytoarchitectural features placed the tumour in the Nottingham grade II category. Lymphovascular tumour emboli were identified. 1/16 axillary lymph nodes showed tumour deposits. Tumour cells showed strong, diffuse nuclear positivity for androgen receptors with negative staining for ER and HER2 immunohistochemical stains. Ki67 proliferation index was less than 2%. The final diagnosis was apocrine carcinoma of the breast. She is currently doing well with chemotherapy, radiotherapy and supportive care.

Discussion and conclusion: Apocrine carcinoma of breast is a rare subtype of invasive breast carcinoma with a distinct morphological appearance and hormonal pattern. It should be diagnosed as a separate entity, as it shows different clinical behaviour with a unique response to androgens.

Keywords: breast apocrine carcinoma, androgen receptors, chemotherapy, radiotherapy, androgen receptors

CR 53: Cribriform morular thyroid carcinoma; a rare type of thyroid cancer

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Introduction: Cribriform morular thyroid carcinoma (CMTC) is a rare malignant thyroid neoplasm, frequently associated with familial adenomatous polyposis (FAP). It can occur as a sporadic neoplasm.

Case report: A 19-year-old girl who was a diagnosed with FAP was found to have a painless neck mass. Ultrasonography revealed a TIRADS IV nodule in the left lobe of the thyroid gland. Fine needle aspiration cytology (FNAC) confirmed the presence of malignant cells (Thy 5/ Bethesda category 6), favouring papillary thyroid carcinoma. Histology of the total thyroidectomy specimen revealed a multifocal tumour comprising well-formed papillae, follicular and cribriform structures lined by cuboidal epithelial cells with mildly enlarged vesicular nuclei containing nuclear grooves and pseudo inclusions. Occasional squamous morules were seen. The tumour cells showed strong, diffuse, nuclear and cytoplasmic positivity with beta catenin. Occasional squamous morules were highlighted with CK5/6. Diagnosis of multifocal CMTC of both lobes was made. This patient was born to a family affected by FAP. She had undergone total colectomy at the age of 17 years and was diagnosed with multiple tubular adenomata with no evidence of high-grade dysplasia or invasive malignancy. She has completed radioactive iodine therapy and is being followed up.

Discussion and conclusion: CMTCs are associated with a favourable prognosis compared to other types of thyroid cancer. However, the presence of FAP may increase the risk of developing other malignancies, necessitating long term follow up and surveillance.

Keywords: cribriform morular thyroid carcinoma, familial adenomatous polyposis, beta-catenin, squamous morules

CR 54: Differentiated high grade thyroid carcinoma; the first experience of a newly classified entity

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Introduction: Differentiated high grade thyroid carcinoma (DHGTC) is a high-grade carcinoma, still differentiated and retaining architectural and cytological features of a well differentiated carcinoma of follicular cell origin.

Case report: A 42-year-old man, was investigated for an anterior neck lump. Ultrasonography revealed a TIRADS 5 nodule in the right lobe. FNAC revealed a Thy 5, Bethesda category 6 lesion with differential diagnosis of anaplastic thyroid carcinoma and medullary thyroid carcinoma. He underwent total thyroidectomy, and the right thyroid lobe showed a nodule measuring 4.5x4x3cm. Gross extrathyroidal extension of the tumour was not seen. The isthmus and left lobe were macroscopically unremarkable. Microscopy revealed a multifocal thyroid carcinoma with the largest focus in the right lobe, composed of papillary structures lined by cuboidal cells showing papillary thyroid carcinoma nuclear features. Mitotic count was 1/2mm^2. Large areas of tumour necrosis were seen. A tumour with similar morphology was seen in the isthmus and left lobe. Lymphovascular tumour emboli were seen. Uninvolved thyroid tissue showed chronic lymphocytic thyroiditis. One of six pretracheal lymph nodes showed tumour deposits. He received radioactive iodine therapy and is on regular follow up.

Discussion and conclusion: DHGTC is a newly classified entity in 2022 WHO classification of endocrine tumours and has intermediate prognosis. The hallmark of DHGTC is necrosis and/or high mitotic activity. Vascular, lymphatic and extrathyroidal extension are common. High grade follicular derived tumours are resistant to conventional radioactive iodine therapy and require new treatment modalities.

Keywords: differentiated high grade thyroid carcinoma, papillary thyroid carcinoma, chronic autoimmune thyroiditis

CR 55: Primary thyroid teratoma in a child; a rare occurrence

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Introduction: Teratomas comprise the most common extra gonadal germ cell tumours in childhood, pathologically defined by the presence of tissue from all three germ cell layers. Thyroid teratoma represents <0.1% of all primary thyroid gland neoplasms.

Case report: A 12-year-old boy presented with an anterior neck lump for two years. Thyroid ultrasonography revealed an enlarged left lobe with a complex colloid cyst. The right lobe was normal. Fine needle aspiration cytology was not performed, and patient underwent left thyroid lobectomy. The cut surface of the left lobe revealed a cystic lesion with a focal solid area. The cyst was filled with a yellow coloured, semisolid material. The entire specimen was processed and examined. Microscopy revealed a mature cystic teratoma composed of structures derived from all three germ cell layers. There were cysts lined by stratified squamous epithelium with associated adnexal structures, foci containing nerve, skeletal muscle, fibrous tissue, adipose tissue, glands with goblet cells, pancreatic tissue and cysts lined by respiratory epithelium. Immature elements and other germ cell elements were not seen. The rest of the thyroid tissue was infarcted with evidence of bleeding. This case was concluded as a mature cystic teratoma of thyroid gland. Two years after surgery the patient is doing well.

Discussion and conclusion: Thyroid teratomas are rare thyroid neoplasms and are usually benign. However, some thyroid teratomas are malignant and inclined to relapse. Thyroid teratoma in children should be included in the differential diagnosis of cystic lesions located in the head and neck area. Complete resection is essential for good outcome.

Keywords: thyroid, teratoma, germ cell tumour, thyroid lobectomy

CR 56: Primary neuroendocrine tumour of breast; a rare case

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Introduction: Primary breast neuroendocrine tumours (NET) are rare, representing <1% of all breast cancers.

Case report: A-73-year-old woman presented with a right breast lump. She underwent right mastectomy and level II axillary clearance. A tumor measuring 19x18x16 mm was identified in upper outer quadrant. Microscopy showed a densely cellular neoplasm composed of solid and cribriform nests of tumor cells infiltrating a collagenous stroma. The constituent cells were monomorphic throughout with focal rosette formation. They showed oval, regular nuclei with salt and pepper type stippled chromatin. Mitotic activity was 22/2 mm². Foci of ductal carcinoma in situ (DCIS) were seem. Areas of tumor resembling small or large cell carcinoma, areas showing solid growth with interspersed fibrovascular cores or mucin pools were not seen. Axillary lymph nodes were free of metastasis. More than 90% of neoplastic cells showed strong and diffuse membrane and cytoplasmic staining for synaptophysin. The tumor was ER (oestrogen receptor) and PR (progesterone receptor) positive (8/8) and Her-2 negative. Ki 67 proliferative index was 30%.

Discussion and conclusion: This is a pure neuroendocrine neoplasm as there was neuroendocrine morphology throughout with positive neuroendocrine markers and no features of solid papillary or mucinous carcinoma. It is a NET and not a neuroendocrine carcinoma, as there were no features of high grade small or large cell carcinoma. Presence of foci of DCIS and ER, PR positivity are supportive evidence for primary breast NET. The prognostic relevance of NET of breast is still debated due to the lack of evidence, however mitotic count and Ki-67 proliferative index are used as markers of aggressive behaviour. Vigilant histo-morphological assessment followed by immunohistochemical confirmation is the key to diagnosis of tumours with well-acquainted morphology in rare locations.

Keywords: neuroendocrine tumor, neuroendocrine carcinoma, breast

CR 57: Primary bilateral breast lymphoma; a rare case

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Introduction: Primary breast lymphoma (PBL) is a rare form of lymphoma confined to the breast, with or without axillary lymph node involvement and without distant disease at presentation or a prior history of lymphoma. Reported cases of PBL are rare in Sri Lanka. We present a case of PBL in a middle-aged woman.

Case report: A 52-year-old previously healthy woman presented with a palpable left breast lump of two months duration. Her haematological and biochemical investigations were unremarkable. Radiological examination revealed bilateral BIRADS IV lesions and fine needle aspiration cytology was done which showed a few atypical cells. Histology of both lesions revealed diffusely infiltrating large cells with prominent nucleoli and mitotic activity. No definite tubule formation was identified. Immunohistochemistry showed positivity for LCA, CD20, BCL2, BCL6, and CD5, with a Ki67 proliferative index of 86% and negativity for pancytokeratin, CD23, Cyclin D1, CD10, and CD3 (MUM 1 – was not performed as it was not available), confirming the diagnosis of diffuse large B-cell lymphoma (DLBCL). Given the unremarkable haematological assessment and no past history of lymphoma, primary DLBCL of the breast was diagnosed. The patient was referred to the oncology team and received chemotherapy. She is currently doing well.

Discussion and conclusion: PBL is an uncommon condition that must be distinguished from secondary breast involvement by lymphoma originating from another primary site. The most common types of PBL include DLBCL, follicular lymphoma, MALT lymphoma, and Burkitt lymphoma. Immunohistochemistry is essential for differentiating PBL from poorly differentiated carcinoma. Awareness of PBL is crucial for accurate diagnosis and appropriate management, thereby avoiding unnecessary surgery.

Keywords: lymphoma, breast, DLBCL

CR 58: Occipital bone manifestation of primary extranodal Rosai-Dorfman disease

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Introduction: Rosai-Dorfman disease (RDD) is a rare benign histiocytic disorder commonly presenting with painless cervical lymphadenopathy. Primary bone RDD in the absence of nodal disease is extremely rare.

Case report: A 11-year-old child presented with a painless occipital lump for six months duration. There was no history of lymphadenopathy. Magnetic resonance imaging revealed a well-defined lesion involving both the inner and outer tables of the left occipital bone with extradural and subcutaneous extension. Frozen cytology revealed a few bony fragments and fibrous tissue only. Histology showed fibrous tissue with collections of foamy histiocytes, evidence of emperipolesis and dense lympho-plasmacytic cellular infiltrate in a storiform fibrotic background. Foamy histiocytes showed nuclear and cytoplasmic positivity with S100 and nuclear positivity with cyclinD1.

Discussion and conclusion: RDD is a rare non-Langerhans histiocytosis. The aetiology of RDD is unclear. Some hypotheses have been proposed with the involvement of human herpesvirus 6, Epstein–Barr virus, immunological disorders, and neoplastic transformation of histiocytes (mutations in the MAPK pathway and Cyclin D1 activation). The differential diagnosis of RDD in the bone includes osteomyelitis, Langerhans cell histiocytosis, lymphoma, immunoglobulin 4 (IgG4)-related disease, primary bone sarcoma, and lytic bone metastases. It has a self-limiting course in majority of the patients. In our case, the patient underwent surgical excision of the lesion. Rarely it can undergo malignant transformations such as lymphoma and histiocytic sarcoma.

Keywords: Rosai–Dorfman disease, Cyclin D1

CR 59: A case report of persistent Mullerian duct syndrome

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Introduction and objectives: Persistent Müllerian duct syndrome (PMDS) is a disorder of sexual development affecting males, who have normal male reproductive organs as well as uterus and fallopian tubes, which are derived from the Müllerian duct (MD). The MD usually breaks down during early development in males, but it is retained in these patients. Affected individuals have a male chromosomal pattern (46, XY).

Case report: A 49-year-old phenotypic man with a history of hypogonadism on testosterone, presented with lower abdominal pain with constipation for four months duration. Examination revealed a palpable intra-abdominal mass with bilateral empty scrotum and radiology revealed a mass in the right flank and pelvis. Serum lactate dehydrogenase was high. Macroscopy of the mass revealed a solid white surface. Histology confirmed a classic seminoma, attached to the serosa of the sigmoid colon, with a metastatic deposit in the omentum (pT4 pN3 pM1b). Six months later, he was found to have a left undescended testis in inguinal canal. Resection revealed a small piece of fibrous tissue. Microscopy showed endo-myometrium, fallopian tube, epididymal tissue and vas deference.

Discussion and conclusion: PMDS occurs due to a defect in the synthesis of anti Müllerian hormone (AMH) or AMH receptor function. Infertility is a common complication. The commonest associated malignancy is seminoma. Diagnosis is based on a combination of anatomical and clinical findings with confirmatory karyotyping. The treatment of a patient with PMDS is to manage undescended testes and Mullerian duct derivatives, to prevent malignancy, and preserve fertility. Being aware of this condition is important in histopathology practice.

Keywords: persistent Müllerian duct syndrome, seminoma.

CR 60: Secretory meningioma; a rare tumour

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Introduction: Secretory meningioma is an uncommon meningioma, grade 1 according to recent central nervous system (CNS) World Health Organization (WHO) classification. It has a benign behaviour, representing 1-3% of all meningiomas. It is more common in women and may have an elevated serum carcinoembryonic antigen (CEA).

Case report: A 51-year-old woman presented with visual disturbance for two months. Magnetic resonance imaging (MRI) showed a suprasellar mass lesion compressing the optic chiasm with a dural tail. Intraoperative crush smears revealed a meningioma. Histology showed a proliferation of meningothelial cells composed of round to oval cells with intervening collagen deposition and a few psammoma bodies. Numerous eosinophilic granular globules were seen within the cells and within gland-like spaces. The morphological diagnosis was secretory meningioma, which was confirmed by special stains (the eosinophilic granular globules were strongly positive with periodic acid-Schiff (PAS) and diastase-resistant). Necrosis, mitoses and brain invasion were not seen.

Discussion and conclusion: Secretory meningioma is a CNS WHO grade 1 tumour which has a benign course. It has been known to be associated with severe cerebral oedema. It can mimic carcinoma metastases due to epithelial differentiation and can be confused with microcystic meningiomas (CEA-negative). A combination of KLF4 and TRAF7 mutation is characteristic of secretory meningioma. Prognosis is related to completeness of surgical excision and surgical risk factors. The residual tumour grows slowly and reacts well to gamma knife therapy.

Keywords: secretory meningioma

CR 61: Gliosarcoma; a rare aggressive brain tumour

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Introduction: Gliosarcoma is a rare variant of IDH wildtype primary glioblastoma (CNS WHO grade 4), observed in adults aged between 40 to 60 years. It is rarely seen in children. It can occur de novo or secondarily after adjuvant treatment of a high-grade glial tumour.

Case report: A 63-year-old man presented with recent onset reduced level of consciousness and expressive aphasia. Magnetic resonance imaging showed a round supratentorial intra-axial solid lesion in the left inferior temporal gyrus. Cytology/crushed smear revealed malignant cells favouring a metastatic carcinoma over a primary brain neoplasm. Histology showed brain tissue with a biphasic tumour composed of sarcomatous and gliomatous elements. Sarcomatous areas contained malignant spindle cells, highlighted by reticulin stain and gilomatous areas showed nests of pleomorphic glial cells. Necrosis was seen. Vimentin and GFAP stains showed positivity in sarcomatous and gliomatous components respectively. AE1/AE3 was negative. Ki 67 index was 60 -75%.

Discussion and conclusion: Gliosarcomas are highly malignant and rare tumours of the central nervous system associated with aggressive clinical course and poor outcome. Some authors have suggested that the sarcomatous components originate from neoplastic transformation of hyperplastic blood vessels commonly found in high-grade gliomas. Differential diagnosis includes glioblastoma with meningeal invasion, primary sarcomas of central nervous system (CNS) and metastatic sarcomas. In the new CNS classification, it is considered a subtype of IDH wild type glioblastoma and does not show an IDH1 or IDH2 mutation. Treatment includes surgical resection, followed by radiotherapy and chemotherapy. However mean survival rate is less than a year.

Keywords: gliosarcoma, biphasic morphology

CR 62: Renal heavy-and light-chain amyloidosis: a rare form of immunoglobulin derived amyloidosis

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Introduction: Renal heavy-and light-chain amyloidosis is an extremely rare subtype of immunoglobulin-derived amyloidosis, with only a few published cases worldwide.

Case report: A 50-year-old previously healthy woman presented with nephrotic range proteinuria with no active sediments in urine. Serum C3 and C4 levels were normal. Serum protein electrophoresis showed a monoclonal band in the beta region, consistent with monoclonal gammopathy. Histology of the renal biopsy showed viable glomeruli with a homogenous, weakly eosinophilic, material deposited in the mesangium. This material was weakly positive with periodic-acid Schiff (PAS) stain, negative with silver stain and strongly positive with Congo red stain showing apple-green birefringence under polarised light. One glomerulus showed a cellular crescent, otherwise no cellular proliferation was seen. No evidence of cast nephropathy was seen. Immunofluorescence showed intense (3+) homogeneous staining with IgA in the mesangium. IgG, IgM, C3 and C1q were negative. Immunohistochemistry showed lambda light chains deposited in the mesangium whilst kappa was negative. The biopsy was concluded as renal amyloidosis, favouring heavy-and light-chain (IgA-Lambda) amyloidosis. Subsequent serum immunofixation confirmed the presence of excess IgA and lambda light chains. Bone marrow aspiration showed excess plasma cells consistent with plasma cell myeloma.

Discussion and conclusion: Heavy-and light-chain amyloidosis is found to have a more favourable clinical course and better response to treatment than light-chain amyloidosis. In this case, the diagnosis was made by the presence of amyloid, and confirmation of IgA heavy chains and lambda light chains by immunostaining. Subtyping of amyloidosis is of vital importance to prevent underdiagnosis of this uncommon entity, as it has a more favourable prognosis.

Keywords: heavy-and light-chain amyloidosis, renal

CR 63: Primary extra-uterine mullerian adenosarcoma of the fallopian tube

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Introduction: Primary extra-uterine mullerian adenosarcoma (PEMAS) is an extremely rare tumour with only 41 published cases. We report a PEMAS arising from the fallopian tube with high grade sarcomatous overgrowth.

Case report: A 52-year-old woman presented with lower abdominal pain of three months duration. Imaging revealed a pelvic mass. A mass arising from the right fallopian tube was found during surgery. A total abdominal hysterectomy, bilateral salpingo-oophorectomy and infra-colic omentectomy were done. On examination, there was a tumour arising from the right fallopian tube. The rest of the specimen was macroscopically unremarkable. Histology of the tubal mass revealed a lesion comprising phylloidiform, cleftlike glands and rigid cysts surrounded by fascicles of spindle cells showing moderate nuclear atypia. The lining epithelium of the glands showed mild-moderate cytological atypia. Additionally, there was a high grade sarcomatoid component (approximately 50%) composed of atypical spindle cells showing brisk mitotic activity, areas of necrosis and interspersed multinucleated giant cells in keeping with transformation to a high-grade sarcoma. Adenofibromatous areas and multiple foci of endometriosis were present in the background. Uterus, cervix, bilateral ovaries and left fallopian tube were free of tumour.

Discussion and conclusion: Although pure PEMAS has an indolent behaviour, sarcomatoid overgrowth carries a dismal prognosis. PEMAS often arises in association with endometriosis. The presence of endometriosis and adenofibromatous areas in the background, in cases such as the present case, may lead to it being misdiagnosed as benign unless careful macroscopic examination and stringent sampling is performed to capture the malignant areas.

Keywords: primary extra-uterine mullerian adenosarcoma , fallopian tubes

CR 64: Water clear cell adenoma of parathyroid gland; a rare case report of a well-known entity

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Introduction: Water clear cell adenoma (WCCA) of the parathyroid gland (PTG) is a rare neoplasm with only 24 published cases.

Case report: A 50-year-old woman with hyperparathyroidism was found to have a left parathyroid growth radiologically suggestive of a parathyroid adenoma, which was excised. A significant reduction of intraoperative parathyroid hormone (PTH) levels was noted after the excision. The PTG measured 40x25x10 mm, had a smooth outer surface and weighed 7.6 g. Histology revealed a thinly encapsulated lesion composed of nests of water clear cells (WCC) separated by thin-walled blood vessels. The WCC contained relatively uniform, dark nuclei, prominent cell membranes and clear, foamy, vacuolated cytoplasm. Mitotic activity was 0/10 mm^2. There was no necrosis, capsular penetration or vascular/perineural invasion. A compressed rim of normal parathyroid tissue was seen at the periphery of the lesion. In view of the distinct morphology and the reduced postoperative PTH levels, the diagnosis of a WCCA was made. The patient is normocalcaemic six months following surgery.

Discussion and conclusion: WCCA is documented to show low endocrine activity, hyperparathyroidism occurring only when the lesion is relatively larger, as seen in our case. The presence of an exclusive population of clear cells in a neck lump raises the differential diagnosis of paraganglioma as well as metastatic deposits of a clear cell tumour including tumours of renal, adrenal, lung , salivary or thyroid origin. Close clinical correlation and appropriate use of immunohistochemistry excludes these possibilities. Since water clear cell hyperplasia is commoner than WCCA, lesions diagnosed as WCCA need to be followed up more vigilantly to rule out previously undetected hyperplasia of the remaining PTGs.

Keywords: water clear cell hyperplasia, parathyroid gland

CR 65: Primary goblet cell adenocarcinoma of transverse colon in a background of Crohn's disease; a rare occurrence

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Introduction: Goblet cell adenocarcinoma (GCA) is a rare malignant tumour occurring in the digestive tract and is mainly seen in the appendix. GCA shows hybrid features of epithelial and neuroendocrine differentiation.

Case report: A 67-year-old man presented with intestinal obstruction. The radiology showed mural thickening in the mid-transverse colon. The extended right hemicolectomy specimen showed a stricture in the distal part of the transverse colon. Fat wrapping and focal mucosal flattening were noted. The histology of the stricture revealed clusters, nests, acinar structures and cords of tumour cells exhibiting compressed nuclei containing intracytoplasmic mucin simulating goblet cells. The tumour showed strong diffuse positivity for CK20, CDX2, synaptophysin, chromogranin and CD 56. There was strong focal positivity for TTF1. CK7 was negative. All 33 lymph nodes were negative. A diagnosis of Grade 2 GCA infiltrating beyond the serosa (pT4a) was made. The appendix was normal. In the terminal ileum and the rest of the colon, there were focal/discontinuous microscopic features consistent with Crohn's disease (glandular distortion, moderate to marked chronic inflammation, focal active inflammation, focal transmural chronic inflammation with fissuring ulcers and sub-serosal lymphoid follicles in the colon). No dysplasia was seen in the background.

Discussion and conclusion: Only a few cases of primary GCA of the colon have been reported in the literature. None had occurred in the background of Crohn's disease. Signet ring cell-rich adenocarcinoma was excluded, as this was positive for neuroendocrine markers. Molecular markers were not performed. The patient is being followed up by the surgical and oncology team. Although rare, GCA can occur in the colon without involving the appendix. Background colonic tissue should be microscopically examined to exclude any other associated pathology in patients with primary colonic carcinoma.

Keywords: goblet cell adenocarcinoma, Crohn's disease

CR 67: Calcifying aponeurotic fibroma; a rare presentation in an elderly patient

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Introduction: Calcifying aponeurotic fibroma is a rare tumor of children and adolescents that involves the distal extremities, arising in association with aponeuroses, tendons and fascia. They are benign, painless masses. Its presentation in the elderly is rare.

Case report: A 62-year-old woman presented with a painless lump in the dorsum of the right hand. The lump gradually increased in size over two months. It was clinically benign and was suspected to be a ganglion. Radiological studies were not performed prior to surgery. The surgical specimen comprised multiple firm pieces of white tissue. Microscopic examination showed a tumour with a biphasic pattern with spindled fibroblasts and areas of calcification. Small areas of cartilaginous metaplasia with osteoclast type giant cells were seen in the adjacent areas. The spindle cells showed no significant mitotic activity.

Discussion and conclusion: Calcifying aponeurotic fibroma occurs in patients over a wide age range with a predominance seen in children and adolescents. It is poorly circumscribed and is often attached to the aponeurosis, tendons or fascia. Two components are seen on histological examination of the lesion - fibromatosis like spindle cells and nodules of calcification with epithelioid cells and osteoclast like giant cells. The treatment of choice is complete local excision. When occurring in the elderly it is important to exclude tenosynovial giant cell tumour. This lesion can be under diagnosed or misdiagnosed leading to unnecessary amputations. Though rare, this entity should be considered in the differential diagnoses of elderly patients with a calcified soft tissue mass, in particular in the finger or hand.

Keywords: calcifying aponeurotic fibroma

CR 68: Conventional papillary carcinoma arising within a follicular adenoma in a thyroid; a rare collision tumour

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Introduction: Papillary thyroid carcinoma (PTC) is the commonest carcinoma in the thyroid gland (80%-85%). PTC arising in a follicular adenoma (FA) is a rare occurrence. It shows nuclear features of PTC within a FA.

Case report: A 22-year-old woman presented with a nodule in the right lobe of the thyroid. Fine needle aspiration cytology was suspicious for a PTC and thyroidectomy was performed. The isthmus showed a pale coloured circumscribed lesion with a thick fibrous capsule measuring 12x11x7 mm. On microscopic examination half of the lesion was composed of microfollicles and scattered macrofollicles lined by flat to cuboidal regular thyroid epithelium. The other half of the lesion showed papillae with true fibrovascular cores. The papillae were lined by neoplastic cells with round to oval enlarged nuclei. Nuclear clearing, overlapping and nuclear grooves were seen. Scattered giant cells were also present. A clear demarcation was present between the two areas of tumour with follicular and papillary architectural patterns. There was no evidence of capsular and vascular invasion. The background thyroid showed features of a colloid goitre. Immunohistochemistry with CK19 showed strong cytoplasmic positivity in the area with papillary structures supporting the diagnosis of papillary carcinoma. The follicles were negative for CK 19, The patient is now on thyroxine and awaiting radioactive treatment.

Discussion and conclusion: PTC arising within an otherwise benign follicular adenoma is unusual and accounts for <1% of all PTCs. PTC commonly exhibits BRAF V600E mutation (40%-80%) while FA predominantly shows RAS mutation .

Keywords: papillary carcinoma, follicular adenoma, immunohistochemistry

CR 69: Seromucinous borderline tumour; an uncommon ovarian neoplasm

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Introduction: Seromucinous borderline tumours (SBT) are uncommon, architecturally complex papillary ovarian neoplasms frequently associated with endometriosis. They commonly affect women in the reproductive age group. Malignant behaviour has not been reported and the prognosis is excellent.

Case report: A 36-year-old woman presented with abdominal distension and discomfort of one-month duration. The ultrasound scan revealed a multilocular right ovarian cyst. Macroscopically, the right ovarian tumour measured 145x110x85mm. The outer surface was smooth. A multilocular cyst with gelatinous, mucinous material and friable papillary excrescences involving the inner cyst lining was noted on sectioning. Microscopy revealed a SBT composed of complex papillae exhibiting hierarchical branching, with variably swollen, oedematous and fibrous stromal cores. The stroma of the papillae showed a neutrophil infiltrate. The epithelium lining the papillae was cytologically bland, stratified and tufted. Endocervical type columnar epithelial cells and nondescript eosinophilic cells lined most of the cyst wall and papillae. Hobnailed epithelium lined areas and serous epithelium lined areas were evident focally. Microinvasion or confluent/ destructive invasion was not seen. Endometriosis was not present. Omental fat was free of tumour. Repeat ultrasound scan done after three months was unremarkable.

Discussion and conclusion: Establishing the diagnosis of SBT is challenging radiologically and clinically as there are no specific findings and histological diagnosis remains the gold standard. Although these tumours are generally positive for PAX8, ER and PR, these markers were not performed in this case and the diagnosis of SBT was made on the presence of classic morphology. It is important to identify these cases as they can cause rare extra ovarian disease emphasizing the necessity to follow up.

Keywords: ovarian, seromucinous, borderline

CR 70: Congenital melanocytic nevus with proliferative nodules; a diagnostic pitfall

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Introduction: Congenital nevus is a benign melanocytic tumour found in 1-2% of newborns. Rarely, congenital nevi can develop proliferating nodules which can mimic melanoma clinically and histologically.

Case report: A two-year-old boy presented with recent rapid enlargement of a nodular pigmented lesion on the right shoulder that had been present since birth. Macroscopic examination of the excision specimen revealed a sharply demarcated pigmented lesion measuring 50x50x16 mm in size. Microscopic examination revealed a dermal lesion composed of nests of bland nevus cells with cytoplasmic melanin indicative of a benign dermal nevus. Beneath the nevus, there were two well circumscribed nodules (2.8x1.5 mm and 1x0.7 mm) involving the deep dermis and subcutaneous tissue. They were hypercellular and composed of nevus cells with mildly pleomorphic nuclei. The cytoplasm was pale and scanty with indistinct cell borders. Mitosis, necrosis and haemorrhage were not identified. Maturation was present at the peripheries. The margins showed focal merging with the dermal lesion. Ki67 proliferation index was 5%. The final diagnosis was benign congenital nevus with a proliferative nodule and a satellite nodule.

Discussion and conclusion: Proliferative nodules in congenital nevi are benign but can mimic a melanoma due to cellular atypia which is occasionally significant, prominent mitotic activity, satellite lesions and even more rarely necrosis with ulceration. The presence of each feature alone does not indicate a melanoma; however, a combination of them should raise the possibility of a melanoma which is exceedingly rare in childhood. Awareness of proliferative nodules occurring in congenital nevi and their histomorphology would prevent misdiagnosis of these benign lesions as malignant.

Keywords: congenital nevus, proliferative nodules, melanoma

CR 71: A large cell neuroendocrine carcinoma in the pelvis

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Introduction : Large cell neuroendocrine carcinoma (LCNEC) of the female genital tract is a rare, aggressive tumour commonly arising in the cervix with a high rate of metastasis and mortality.

Case report: A 64-year-old postmenopausal woman presented with vaginal bleeding. Contrast enhanced computed tomography (CECT) revealed an irregular mass occupying the entire cervix, extending to the parametria. Adnexa, rectum, anus, pelvic and para-aortic lymph nodes were free of invasion. Distal metastasis was absent. A biopsy from the pelvic mass revealed sheets of large, atypical cells with prominent nucleoli. Brisk mitotic activity and multifocal tumour necrosis were evident. The Ki67 proliferative index was 80% (high). Special stains [Periodic acid Schiff/diastase (PAS/D) and Acian blue] were negative. The cells were negative for the first panel of CK5/6, CK7, CK20, ER, PR, chromogranin, synaptophysin and vimentin. However, as the nuclear features were suggestive of a neuroendocrine nature, a second panel was done and showed positive CD56, NSE and pan cytokeratin staining supporting a diagnosis of LCNEC. The patient underwent palliative chemotherapy but passed away.

Discussion and conclusion: The differential diagnoses were poorly differentiated squamous cell carcinoma, adenocarcinoma and neuroendocrine carcinoma. Negativity for CK5/6, CK7 and special stains excluded the first two. The final diagnosis of LCNEC was made based on histomorphological and immunohistochemical correlation. The cervix is the commonest site of LCNEC in the female genital tract. Other sites include the endometrium, ovary, fallopian tubes, vulva, vagina, colon, rectum and anus. LCNEC should be considered in the differential diagnosis of poorly differentiated carcinoma of the cervix.

Keywords: large cell neuroendocrine carcinoma, female genital tract

CR 72: Craniofacial chordoma presenting as an orbital tumour

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Introduction: Chordomas are a family of primary malignant bone neoplasms demonstrating notochordal differentiation. They almost always arise within the axial skeleton particularly in the skull base and sacrococcygeal region. This is a rare case originating in the right superior orbit.

Case report: A 20-year-old woman presented with right eye proptosis, epiphora, vomiting and blurred vision of one-week duration. Magnetic resonance imaging of the brain and orbits revealed an extraconal supraorbital mass lesion in the right orbit extending intracranially. Macroscopy revealed multiple cystic fragments. Microscopically the tumour was composed of a prominent myxoid stroma with hypo and hypercellular areas arranged in lobules and cords. The constituent cells were large with clear to pale eosinophilic vacuolated cytoplasm (physaliphorous cells). Nuclear atypia was minimal. Mitoses and necrosis were not seen. The tumour was eroding into the adjacent bony trabeculae. The physaliphorous cells showed diffuse and strong cytoplasmic positivity for EMA and patchy cytoplasmic positivity for pancytokeratin and S100. The tumour cells were negative for CD34. The tumour was diagnosed as a conventional chordoma.

Discussion and conclusion: Chordomas can occur at all ages. In this case the immuno-morphological features were compatible with a conventional chordoma presenting as an orbital tumour. Chordoid meningioma is the main differential diagnosis. It has a similar morphology but presents as a large supratentorial dural based tumour. Chordoid meningioma has a higher rate of recurrence and therefore is categorized as a CNS WHO grade 2 tumour. Chordomas are rare tumours amounting to 0.5% of all primary central nervous system tumours. Careful examination is important to differentiate from a chordoid meningioma.

Keywords: conventional chordoma, orbital tumour

CR 73: Papillary thyroid carcinoma Warthin-like subtype: a rare variant

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Introduction: Papillary thyroid carcinoma (PTC), Warthin-like subtype (WL-PTC) is a rare entity with an incidence of 0.06-1.9% of all PTCs.

Case report: A 43-year-old woman presented with an anterior neck lump. Ultrasound scan neck revealed a TIRADS V lesion in the left thyroid lobe. Fine needle aspiration cytology(FNAC) was reported as Bethesda category VI, consistent with PTC. The thyroidectomy specimen showed a white solid lesion involving the left upper and mid pole measuring 7x5x12mm. Histology showed papillae lined by cuboidal to columnar cells with a heavy infiltrate of lympho-plasmacytic cells in the stroma. There was a population of tall cells involving <30% of the area. These cells showed nuclear overlapping and moulding with chromatin clearing, anisonucleosis and thick nuclear membranes. The cytoplasm was abundant, granular and eosinophilic. Mitoses, necrosis and lymphovascular invasion were not seen. The non-neoplastic thyroid tissue showed mild to moderate autoimmune thyroiditis.

Discussion and conclusion: WL-PTC presents as a well-circumscribed or infiltrative tumour and shares morphologic similarities with Warthin-like tumour of the salivary gland. It occurs in a background of severe chronic lymphocytic thyroiditis, hence differentiating it from altered epithelial cells of autoimmune thyroiditis is challenging in FNAC. Transition to tall cell-PTC can occur in WL-PTC and it is found at the invasive edge of the tumour. Awareness of this rare variant is important as it can be easily overlooked in the low power due to the background of chronic autoimmune thyroiditis. Distinguishing it from high-grade variants is also important as it has a favourable prognosis similar to classic PTC.

Keywords: Warthin-like papillary thyroid

CR 74: Fulminant pseudomembranous colitis complicated by toxic megacolon

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Introduction: Pseudomembranous colitis (PMC) is a severe inflammatory condition. *Clostridium difficile* overgrowth following broad spectrum antibiotic use is the commonest cause. Complications such as fulminant PMC and toxic megacolon (TM) are rare.

Case report: A 61-year- old man was treated with a broad-spectrum antibiotic for cellulitis. Following four days of antibiotic treatment, he presented with severe diarrhoea and vomiting. He looked very ill, and his abdomen was distended with reduced bowel sounds. X-ray abdomen revealed distended bowel loops and contrast enhanced computed tomography (CECT) showed features of TM. He underwent colectomy. Macroscopically, the entire colon was distended up to 65 mm in diameter. Perforations were not present. The mucosa showed a characteristic pale, friable exudate resembling pseudo-membranes throughout the colon. Mass lesions were not present. Microscopy revealed extensive mucosal ulceration due to coagulative necrosis of crypts. The ulcers were covered with fibrino-purulent exudate and necrotic debris forming "pseudo-membranes". The damaged viable crypts showed a "volcanic eruption" like inflammatory exudate. The submucosa was markedly oedematous and the muscularis propria was significantly attenuated. Features of inflammatory bowel disease (IBD) or collagenous colitis were not present. Accordingly, diagnosis of fulminant PMC with TM was made.

Discussion and conclusion: TM is a fatal complication that occurs as a result of severe transmural inflammation leading to paralysis of the muscularis propria and massive distension of the colon. IBD is the commonest cause of TM. However, it can also occur due to other transmural inflammatory conditions. Awareness, close observation of morphology and correlation with clinical details are important for correct diagnosis of these uncommon conditions.

Keywords: toxic megacolon, pseudomembranous colitis, fulminant colitis

CR 75: Disseminated primary cutaneous diffuse large B cell lymphoma-leg type

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Introduction: Primary cutaneous diffuse large B cell lymphoma- leg type (PCDLBCL - leg type) is an uncommon aggressive tumour typically affecting elderly women.

Case report: A 69-year-old woman presented with skin plaques on left thigh for one month and left scapula for two weeks. Both plaques were violaceous, raised and had a nodular surface without ulceration. Histology of both these lesions showed a tumour composed of sheets of large pleomorphic lymphoid cells, extensively infiltrating the subcutaneous tissue; small lymphocytes were sparse. Apoptotic and mitotic activity were high. In the thigh, the tumour infiltrated the skin without epidermotrophism. The epidermis was intact with a grenz zone. CD 20 showed weak membrane positivity. CD 79a, PAX5, BCL2 and MUM-1 were strongly positive. CD3, CD5, and CD 43 highlighted a few background reactive T lymphocytes. Ki67 was 70%. Accordingly, a diagnosis of PCDLBCL - leg type was made. She underwent multiagent chemotherapy regimens with a significant reduction in tumour size.

Discussion and conclusion: The main differential diagnosis of PCDLBCL - leg type are primary cutaneous follicular centre lymphoma (PCFCL) and secondary cutaneous infiltration by systemic DLBCL. The first appearance of the thigh nodule excludes secondary skin involvement by DLBCL and the overall clinical presentation, morphological features and immunoprofile are not in favour of PCFCL. This case highlights the importance of correlation of clinical details, histomorphology and immunohistochemistry in the diagnosis of PCDLBCL - leg type

Keywords: primary cutaneous DLBCL leg type

CR 76: Giant cell tumour of soft tissue; a rare entity

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Introduction: Giant cell tumour of soft tissue (GCT-ST) is an unusual soft tissue malignancy occurring in the fifth decade. Differentiating these uncommon neoplasms from other tumours with giant cell rich morphology could be a diagnostic challenge.

Case report: A 72-year-old woman presented with a knee lump for a duration of one year. Radiology showed an exophytic soft tissue lesion arising from proximal leg, without tendon or bone involvement. The resection revealed a nodular tan coloured soft tissue tumour eroding the skin. The tumour had a multinodular architecture, separated by fibrous septae containing hemosiderin-laden macrophages. The nodules were composed of mononuclear cells, fascicles of spindle cells and evenly distributed osteoclast-like multinucleated giant cells. Xanthoma cells or a significant bone involvement was not identified. Mitoses were 9/10 HPFs. Tumour necrosis was identified. CD 68 was strongly and diffusely positive with focal positivity for SMA in the spindle cells. Desmin and S100 were negative. Ki 67 proliferation index was 2%.

Discussion and conclusion: GCT-ST is an intermediate (borderline) malignant tumour, categorized under the fibrohistiocytic tumors. Upper and lower extremities are the commonest locations. The tumours are painless and grow rapidly within a short period of time. Histology is essential to differentiate it from other giant cell rich soft tissue tumours. Necrosis and haemorrhage can be seen in high grade tumours. Since GCT-ST is rare, it can be initially misdiagnosed. Radiology, immunohistochemistry and molecular studies can be helpful. Radical resection is the main stay of treatment. Due to the intermediate nature, close clinical follow-up for local recurrence and metastasis is mandatory.

Keywords: giant cell tumour of soft tissue, soft tissue sarcoma

CR 77: Lupus nephritis clinically misdiagnosed as infection related glomerulonephritis

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Introduction: Kidney involvement is seen in 20 to 65% of patients diagnosed with systemic lupus erythematosus (SLE). It is associated with activation of classic complement pathway and presents as glomerular, tubular, interstitial or vascular disease, significantly increasing their morbidity and mortality.

Case report: A 17-year-old girl presented with generalized body swelling and low-grade fever with a history of preceding sore throat. She was managed as post streptococcal glomerulonephritis. Her ASOT level was less than 200. She subsequently developed a urinary tract infection. Since she was not responding to treatment, a renal biopsy was performed. Renal biopsy showed a diffuse proliferative glomerulonephritis with mesangial and endocapillary cellularity. Cellular crescents were seen with wire loops, hyaline thrombi and fibrinoid necrosis. Basement membranes were thickened with focal spike formation confirmed on silver stain. The tubulointerstitium showed extensive mixed inflammation with marked interstitial oedema. Blood vessels showed transmural inflammation. Immunofluorescence for IgM, Ig A, C3 and C1q showed strong positivity in glomerular basement membrane, mesangium and in tubules. IgG showed trace positivity in basement membranes. With the developing clinical features of alopecia and arthritis with antinuclear antibody (ANA) and anti-Ro antibody positivity, low C3, C4 levels and other supporting investigations, a diagnosis of SLE was made. Class IV+V lupus nephritis with an acute interstitial nephritis and vasculitis was diagnosed on renal biopsy.

Discussion and conclusion: A high index of suspicion for SLE is needed with unresolving renal disease in a young female patient. Once severity and activity of lupus nephritis and extent of chronic damage to kidney has been defined, anti-inflammatory and immunosuppressive agents are the mainstay of therapy. The management of this patient was challenging due to the presence of ongoing infection with lupus nephritis and the need for treatment with both intravenous antibiotics and steroids. The patient expired while awaiting plasma exchange.

Keywords: lupus nephritis, systemic lupus erythematosus

CR 78: IgA nephropathy in a renal transplant patient

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Introduction: IgA nephropathy (IgAN) is the most common type of primary glomerular disease worldwide with 30% of cases developing end stage kidney disease (ESKD) approximately two decades after initial diagnosis. Kidney transplantation is the treatment of choice for these patients. The recurrence of IgAN after kidney transplantation occurs in about 20% to 60% of patients.

Case report: A 46-year-old man who underwent a kidney transplantation from his identical twin two years back, presented with a rising serum creatinine and microscopic haematuria. The pretransplant diagnosis of the cause of kidney disease was unknown. He had reperfusion injury at the time of transplant. Renal biopsy was performed. Hypercellular glomeruli with increase in mesangial cells and matrix were seen. Endocapillary cellularity was seen with infiltration by polymorphs. Basement membranes were not thickened. There were no crescents. Mild peritubular capillaritis was seen. Interstitial fibrosis and tubular atrophy accounted for 10% of the biopsy. Immunofluorescence for IgA and C3 showed strong positivity in glomerular basement membranes.C4d was negative. The overall appearances were consistent with IgAN in the graft biopsy, either of denovo or recurrent type.

Discussion and conclusion: Recurrence of previous kidney disease is an important differential diagnosis to keep in mind, when assessing transplant kidney especially when pretransplant diagnosis is unknown. Complete work up with immunofluorescence and correlation with history is very important. Electron microscopy is useful but not essential in a resource poor setting most of the time.

Keywords: IgA nephropathy, transplant

CR 79: SMARCB1 deficient sinonasal carcinoma

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Introduction: SMARCB1 deficient sinonasal carcinoma is an aggressive tumour defined by inactivation of SMARCB1 gene. It is characterized by loss of INI 1 immunohistochemical marker. These tumours are of high grade but morphologically they demonstrate cytological uniformity.

Case report: A 26-year-old previously healthy woman presented with a single episode of nasal bleeding. Non-contrast computed tomography (NCCT) showed a mass arising from the right sphenoid sinus. Excision biopsy was performed and showed multiple fragments of a tumour composed of sheets of medium to large polygonal cells with moderately pleomorphic vesicular nuclei, prominent nucleoli, moderate eosinophilic to vacuolated cytoplasm and indistinct cell borders. Mitoses were present with abnormal forms. Necrosis was not seen. The tumour showed diffuse positivity for pancytokeratin and patchy positivity for CK 5/6. The tumour cells were negative for synaptophysin and chromogranin. An olfactory neuroblastoma and a sinonasal undifferentiated carcinoma were excluded with the above immunohistochemistry stains. The tumour cells were positive for P 40, CD 99 (patchy) and negative for GATA 3, ALK, S100 and CD 45. Immunohistochemical markers, INI 1 and NUT were recommended to exclude SMARCB1 deficient sinonasal carcinoma and NUT midline carcinoma. The tumour showed INI 1 loss. This case was diagnosed as SMARCB1 deficient sinonasal carcinoma. Post resection magnetic resonance imaging scan showed no residual lesions, and she is currently awaiting radiotherapy.

Discussion and conclusion: Very few cases of SMARCB1 deficient sinonasal carcinoma have been reported in the literature and the prognosis is considered to be poor.

Keywords: SMARCB1, INI1, sinonasal carcinoma

CR 80: A giant scrotal neurofibroma in a child masquerading as filariasis: an uncommon presentation of a common disease

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Introduction: The spermatic cord and epididymis are the major sites of extratesticular scrotal tumours. Leiomyoma, fibroma, lipoma, and haemangioma are the most frequent benign mesenchymal scrotal tumours. Neurofibroma must be considered in the differential diagnosis of scrotal tumours despite its exceptional rarity. We report an extremely uncommon case of a giant scrotal neurofibroma in a child that was clinically masquerading as scrotal filariasis. The clinical, cytological, histomorphology, and immunohistochemical findings are described.

Case report: A 17-year-old boy was evaluated for an isolated, painless, hanging giant scrotal mass measuring 33x10x6 cm. It had been present for ten years and progressively increased in size. Ultrasonography revealed a giant hetero-echoic extratesticular mass lesion arising from the left scrotum. A provisional diagnosis of scrotal filariasis was made based on clinical and radiological evaluation. Fine needle aspiration cytology from the mass showed cellular smears, displaying bland monomorphic spindle-shaped cells with wavy nuclei. Complete excision of the left scrotal mass was performed. Histopathological examination revealed a tumour comprising uniformly dispersed monomorphic spindle-shaped cells with wavy nuclei and bland chromatin, embedded in a stroma that showed sclerosis at places. Immunohistochemical examination of the tumour showed positive expression of S100 and vimentin. A definitive diagnosis of neurofibroma was established on the basis of cytology, histomorphology, and immunophenotypic findings.

Discussion and conclusion: To the best of our knowledge, solitary scrotal neurofibroma in children without a link to neurofibromatosis type 1 (NF1) is extremely unusual.

Keywords: neurofibroma, neurofibromatosis type I, scrotum, scrotal mass

CR 81: Osseous metaplasia in a follicular adenoma of thyroid gland; a rare finding

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Introduction: Thyroid nodules are often accompanied by degenerative changes like haemorrhage, fibrosis, cystic change and calcification. True bone formation is a rare occurrence. We report a rare case of a follicular adenoma with osseous metaplasia.

Case report: A 37-year-old woman presented with a nodule in the right lobe of the thyroid. Thyroid function tests were normal. Thyroid ultrasound scan demonstrated a TR3 nodule in the right lobe. Fine needle aspiration cytology of the nodule was reported as Bethesda category III (atypia of undetermined significance-other) due to the presence of few repetitive microfollicles. Right side lobectomy showed a well demarcated tan coloured hard nodule (15x15x12mm) in the lower pole. The entire nodule was processed and examined after decalcification. Microscopy revealed a well circumscribed encapsulated lesion composed of colloid storing thyroid follicles merging with areas containing mature bone trabeculae and bone marrow. The follicles were lined by follicular epithelial cells devoid of papillary carcinoma like nuclear features. Neither capsular nor vascular invasion was present. The background thyroid tissue showed features of chronic lymphocytic thyroiditis. Malignancy was not present. A diagnosis of a follicular adenoma with osseous metaplasia was made.

Discussion and conclusion: Osseous metaplasia in thyroid nodules is known to be a result of activation of osteoinductive bone morphogenic factor. Although osseous metaplasia with or without extramedullary haematopoiesis has been identified in malignant neoplasms, it is uncommon in benign pathologies including follicular adenoma.

Keywords: osseous metaplasia, follicular adenoma

CR 82: Mature ovarian teratoma with predominant glial tissue simulating a low-grade glioma

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Introduction and objectives: 30-50% of mature ovarian teratomas (MOT) may contain varying quantities of differentiated neural tissue. The diagnostic significance of the presence of immature neuroectodermal tissue in immature teratomas is well established, but the histological significance of the cellular neuroglial tissue (CNT) without distinct neuroepithelial tubules is not well described. The presence of CNT in a MOT warrants the exclusion of malignant transformation into a glioma.

Case report: A 31-year-old unmarried woman presented with left-sided abdominal pain for five months. Radiology revealed a left-side solid and cystic ovarian mass. The left ovarian cystectomy showed a cyst (18 cm) with 40% solid component containing fatty, sebaceous, bony and brain-like areas. Microscopy revealed a teratoma comprising mature tissues derived from all three germ layers. A significant quantity (60%) of neural tissue including mature glial tissue, ganglion cells, nerve bundles, and cerebellar tissue were seen in both the solid and cystic areas. There were areas with CNT, however, there was no evidence of nuclear pleomorphism, increased mitoses, coagulative necrosis, microvascular proliferation or immature neuroepithelium. The Ki67 proliferative index was 0.4%. Therefore, the tumour was classified as MOT with extensive proliferation of mature CNT.

Discussion and conclusion: Literature on the malignant transformation of glial elements into low-grade gliomas in MOT and the histological characteristics and behaviour of CNT in the absence of neuroepithelial tubules are limited due to their rarity. Therefore, extensive sampling, avoidance of extensive surgery, and vigilant conservative management with careful long-term follow-up are paramount in teratomas with abundant CNT, especially in young females.

Keywords: mature ovarian teratoma, cellular neuroglial tissue, glioma

CR 83: Dedifferentiated chordoma: a rare entity

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Introduction: Dedifferentiated chordoma (DC) is a rare biphasic tumour composed of conventional chordoma (CC) and high-grade sarcoma. DC is genetically and clinically distinct from CC, exhibiting frequent SMARCB1 alterations and an aggressive clinical course.

Case report: A 74-year-old man presented with a hard sacrococcygeal lump for two months. Radiology was suggestive of an adult sacrococcygeal teratoma or chordoma. Macroscopic examination revealed a capsulated, lobulated mass with focally attached bone. The cut surface was solid-white with areas of haemorrhage and myxoid change. Microscopic examination showed a component of conventional chordoma composed of multiple lobules of physaliphorous cells arranged in cords, nests and singly in a myxoid matrix, separated by fibrous septa. A dedifferentiated component comprising hypocellular areas with loosely arranged spindle cells in an oedematous myxoid stroma and hypercellular areas with fascicles of spindle cells in a sclerotic stroma was identified. The cells in the dedifferentiated component were moderately pleomorphic with hyperchromatic nuclei. The mitotic count was 7/10hpf. Tumour giant cells and bizarre cells were present. Necrotic areas accounted for less than 30% of the tumour volume. Lymphovascular or perineural invasion were not identified. There were no heterologous elements. The tumour cells showed diffuse cytoplasmic positivity for EMA, S100 and pancytokeratin. Brachyury was positive in the conventional component. A diagnosis of dedifferentiated chordoma was made. The patient underwent complete excision with en-bloc resection followed by radiotherapy.

Discussion and conclusion: The presence of physaliphorous cells and the characteristic immunophenotype were supportive of the diagnosis of dedifferentiated chordoma and excluded myxoid chondrosarcoma and metastatic deposits of a mucinous carcinoma. Treatment of DC is based on algorithms developed for CC and includes surgery with adjuvant radiation therapy. DC exhibits higher rates of metastases and shorter overall survival rates compared to CC due to poor response to both chemotherapy and radiotherapy.

Keywords: dedifferentiated chordoma, conventional chordoma, brachyury, EMA, S100, pancytokeratin

CR 84: A rare case of bowel perforation in a 25-year-old man with vascular Ehlers-Danlos syndrome

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Introduction: Ehlers-Danlos syndrome, vascular type(vEDS) is an autosomal dominant connective tissue disorder caused by mutation in the type III collagen gene. Adult patients with vEDS usually present with vascular rupture/dissection, gastrointestinal tract perforation or uterine rupture as blood vessels, intestines and uterus are rich in type III collagen.

Case report: This 25-year-old man, previously diagnosed with vEDS who had a COL3A1 gene mutation presented with features of bowel perforation. Computed tomography (CT) scan showed a splenic flexure perforation. Subtotal colectomy was performed. Macroscopically, the colon showed perforation and multiple diverticulae like outpouchings near as well as away from the perforated site. Microscopy showed ulceration, granulation tissue and serositis around the site of perforation. Muscularis propria was absent at the perforation site. Diverticulae like foci showed gross attenuation of the muscularis propria with areas where the bowel wall was completely devoid of muscularis propria with replacement by fibrous connective tissue. The bowel perforation was attributed to vEDS. He also had a history of right internal carotid artery dissection and bilateral vertebral artery aneurysm.

Discussion and conclusion: Around 35 cases of bowel perforation in vEDS have been reported in the literature. In one review study, the mean age of perforation was 28 years, and the common site of perforation was the sigmoid colon. vEDS should be suspected in young patients with gastrointestinal perforation without any obvious cause. Other causes of bowel perforation in young patients are infection, obstruction and trauma. Careful microscopic examination of abnormal looking areas away from perforation will help to identify a defective muscular layer and therefore raise suspicion of vEDS in undiagnosed patients. vEDS is different to other benign forms of EDS and should be managed carefully.

Keywords: Ehlers-Danlos syndrome, bowel perforation

CR 85: Metastasizing testicular mixed germ cell tumor presenting as an intra-abdominal mass

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Introduction: Presentation of a metastasizing testicular mixed germ cell tumor as an intra-abdominal mass is very rare. Due to the potential for undetected growth in the abdominal cavity, these tumors are often discovered as large masses.

Case report: A 30-year-old man presented with abdominal pressure symptoms and a rapidly enlarging abdominal mass. Contrast enhanced computed tomography (CECT) revealed two solid-cystic masses in the abdomen and pelvis with lung metastasis. No para-aortic lymph node involvement was seen. He underwent exploratory laparotomy. The specimen was an irregular, solid-cystic mass measuring 300x 280x 160 mm with extensive hemorrhage and necrosis. Microscopy revealed immature neuroepithelium with rosettes, pseudo rosettes and primitive tubules. Mature elements arising from all three germ cell layers were identified. A few foci suspicious of yolk sac tumor were seen. No lymphoid tissue was identified despite extensive sampling. A diagnostic dilemma occurred about the origin of the tumour, whether it was of primary abdominal origin or a metastasis from a testicular germ cell tumor. On retrospective inquiry, the patient mentioned a history of an orchidectomy two years ago with incomplete chemotherapy cycles and defaulted follow up. Tracing the previous histology report revealed a diagnosis of a mixed germ cell tumor with elements of teratoma and yolk sac tumor of the left testis.

Discussion and conclusion: Most reports of distant metastases of immature teratoma are to the liver, lung, brain and para-aortic lymph nodes. Intra-abdominal metastases are rare. Obtaining a proper history plays a crucial role in resolving a diagnostic dilemma and in patient management, especially when the presentation is unusual.

Keywords: intra-abdominal metastasis, teratoma

CR 86: Synchronous multifocal preinvasive papillary neoplasms of gallbladder and bile ducts mimicking carcinoma: a rare occurrence

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Introduction: Intracholecystic papillary neoplasms (ICPN) and intraductal papillary neoplasms of the bile ducts (IPNB) are preinvasive, grossly visible neoplasms arising from the mucosa of the gallbladder and bile ducts, respectively.

Case report: A 58-year-old woman presented with jaundice and fever and was managed for cholangitis. Upper gastrointestinal endoscopy (UGIE) showed a bulge at the ampulla. A CT scan revealed a dilated biliary tree and gallbladder, with distal common bile duct (CBD) stricture suggesting a periampullary malignant neoplasm. A pancreatoduodenectomy was performed. Macroscopically, the biliary tract was distended, with multifocal, varying-sized exophytic lesions featuring friable excrescences protruding into the lumen, causing focal complete occlusion of the biliary tract. Microscopically, these lesions displayed papillary, villous, and tubular architecture. The CBD lesions were predominantly lined by intestinal-type epithelium, while the lesions at the cystic duct and gallbladder were lined by gastric foveolar-type epithelium. All lesions showed low-grade dysplasia with focal areas of high-grade dysplasia. Despite extensive sampling, there was no evidence of invasive carcinoma. Based on histology, the diagnosis of ICPN and IPNB with low-grade dysplasia, showing focal high-grade dysplasia without invasive carcinoma, was made.

Discussion and conclusion: Both ICPN and IPNB are benign neoplasms within the same morphological spectrum, although their simultaneous occurrence is very uncommon. Radiologically, half of these cases are misdiagnosed as gallbladder cancer. However, both ICPN and IPNB can be associated with invasive carcinomas with relatively indolent behaviour. Therefore, meticulous pathological analysis is essential for an accurate diagnosis.

Keywords: intracholecystic papillary neoplasm, intraductal papillary neoplasm of the bile ducts, dysplasia , invasive carcinoma.

CR 87: Diffuse high grade glioma with mesenchymal and epithelial metaplasia; a rare phenomenon of a common neoplasm

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Introduction and objectives: Diffuse gliomas are morphologically heterogeneous tumours. Some of them exhibit metaplastic changes which contribute to the morphological diversity.

Case report: A 49-year-old man presented with sudden onset headache and vomiting. Magnetic resonance imaging (MRI) features were suggestive of a multifocal high-grade glioma predominantly involving right frontal and parietal lobes with intralesional and intraventricular subacute haemorrhages. A craniotomy was performed, and multiple brain tissue fragments were received for histological evaluation. Microscopically, the tumour showed a diffusely infiltrating highly cellular glioma composed of malignant astrocytes showing marked pleomorphism and brisk mitotic activity. Small foci of necrosis were also present. Some areas showed fascicles of pleomorphic spindle cells having brisk mitotic activity. Other areas showed cohesive sheets of atypical squamous cells with keratin pearls. Immunohistochemically the glial component showed intense cytoplasmic staining for GFAP. The sarcomatous component lacked expression of GFAP and showed diffuse cytoplasmic positivity for vimentin. The squamous component showed strong positivity for CK5/6.

Discussion and conclusion: Diffuse high-grade gliomas (CNS WHO Grade 4) exhibiting sarcomatous metaplasia usually take the form of fibrosarcoma or pleomorphic spindle cell carcinoma. Osseous, chondroid, adipocytic, or myogenic differentiation are rare. True epithelial metaplasia is a very uncommon morphological variant of high-grade glioma, most often showing adenomatous differentiation and less frequently squamous differentiation. This possibility should be kept in mind in the diagnostic evaluation of such cases to avoid misdiagnosing these cases as metastases to the brain.

Keywords: diffuse high-grade gliomas, sarcomatous metaplasia, epithelial metaplasia

CR 88: Congenital giant immature teratoma of the neck; a perinatal autopsy examination

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Introduction: Teratomas are germ cell tumours composed of tissues from the three embryonic germ layers: ectoderm, mesoderm and endoderm. They usually arise in a para-axial or midline location, including the brain, sacrum, and gonads. These tumours are rare in the neck region.

Case report: A 31-year-old P1C0 mother, had an antenatal ultrasound scan diagnosis of cervical teratoma of the foetus, and delivery of the baby was planned at 37 weeks of period of amenorrhoea (POA) in liaison with the neonatology team and the paediatric surgeon. However, she presented with reduced foetal movements and went into preterm labour at 35 weeks of POA. Emergency caesarean section was performed. The baby did not cry at birth and despite several attempts at intubation and resuscitation and the involvement of the neonatology team, the baby expired a few minutes later due to respiratory insufficiency. Autopsy findings of the neonate included a large nodular mass involving the neck, measuring 30x22x13cm. The clinical differentials included lymphangioma, haemangioma, congenital thyroid goitre, branchial cyst, neuroblastoma and soft tissue sarcoma. Microscopy revealed mature tissue types and five low-power microscopic fields containing aggregated immature neuroepithelium in one slide, consistent with a grade 3 immature teratoma. Other congenital abnormalities were not present.

Discussion and conclusion: Congenital immature teratoma of the neck is a very rare entity. Immature teratomas may also be a component of a malignant germ cell tumour of mixed histology. Prenatal sonography is a choice for prenatal screening of cervical teratomas. These infants can present with foetal polyhydramnios, obstruction of the airway, or preterm labour. Some cases of cervical immature teratomas can be treated with surgery. Cervical teratomas are associated with a high perinatal mortality rate. Therefore, multi-disciplinary approach is a vital part in the management. Histological examination is essential to confirm the diagnosis of an immature teratoma.

Keywords: cervical teratoma, immature, congenital

CR 89: Ovarian dermoid cyst containing a poorly differentiated thyroid carcinoma

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Introduction: Approximately 15% of ovarian dermoid cysts contain thyroid tissue but malignant transformation of this ectopic thyroid tissue is extremely rare.

Case report: A 48–year-old woman with a radiologically diagnosed dermoid cyst underwent salpingo-oophorectomy. Grossly, the tumour was multicystic, measuring 110x70x60 mm, with predominant sebaceous material and hair. It contained a solid white-tan area measuring 40x30x30 mm accounting for 35% of the total volume. Microscopy of this area showed thyroid tissue alongside a tumour with trabecular and insular growth patterns, without necrosis and containing cells with hyperchromatic convoluted nuclei. The mitotic count was 5/2mm^2. The cystic regions showed mature tissues comprising squamous epithelium and skin adnexa. The differential diagnosis was between a carcinoid and poorly differentiated thyroid carcinoma (PDTC). Immunohistochemical stains were diffusely positive for thyroglobulin and negative for CD56. The Ki-67 proliferation index was 7%. Subsequently, the patient underwent hysterectomy and contralateral salpingo-oophorectomy, along with a total thyroidectomy to exclude a primary thyroid cancer. No further pathology was identified. She is awaiting a radioactive iodine scan and is under close follow-up.

Discussion and conclusion: PDTC is rare among primary thyroid cancers, extremely rare in struma ovarii (teratomas with over 50% thyroid tissue), and exceptional in mature cystic teratomas. PDTC has a poorer prognosis than well-differentiated thyroid carcinoma. The patient may benefit from aggressive treatment and requires long-term follow-up. It is known that somatic-type malignant tumours, such as cancers and sarcomas, rarely arise from dermoid cysts. Somatic-type malignant tumours in teratomas could be either primary or secondary deposits. Immunohistochemistry is helpful to confirm the diagnosis.

Keywords: ovary, poorly differentiated thyroid carcinoma

CR 90: Invasive breast carcinoma arising within a malignant phyllodes tumour

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Introduction: Phyllodes tumour (PT) account for less than 1% of breast malignancies. An invasive carcinoma arising within a PT is extremely rare. This case represents the combination of both tumours.

Case report: A 60-year-old woman presented with a 30-year history of a painless mass, which had increased in size over a period of three months. Sonographic examination revealed a 10x12 cm sized lobulated mass. Computed tomography findings were indicative of a malignant PT with axillary lymphadenopathy. Mastectomy with lymph node dissection was performed. The excised mass (140x130x90mm) exhibited lobulation and a fleshy cut surface. Histologically, the tumour showed characteristics of a malignant PT: stroma with high cellularity, stromal overgrowth, moderate nuclear atypia, increased mitotic activity (11/10hpf) and tumour necrosis. A part of the tumour revealed an invasive breast carcinoma no special type (IBC-NST), (12 mm in size), comprising invading tubules (60%) with moderate nuclear grade and high mitotic activity (15/HPF). Solid pattern ductal carcinoma in-situ with intermediate grade nuclei was identified (10% of the tumor). There was no evidence of lymphovascular invasion. All 15 lymph nodes were free from metastatic deposits. Immunohistochemical staining of CK5/6 demonstrated a lack of myoepithelial cells within the invasive carcinoma. The tumor cells were immunoreactive for ER (8/8) and PR (8/8) and negative for HER-2/neu (0/3). Stromal cells forming the malignant PT were positive for CD34. Positive CD34, coupled with negative CK5/6 expression and positive ER and PR, effectively ruled out the possibility of metaplastic carcinoma of the breast.

Discussion and conclusion: IBC occurring within a malignant PT is exceptionally rare. PT gives rise to metastases by haematogenous spread. However, in the presence of IBC, it can give rise to lymph node metastases, which affect the management and prognosis of the patient. Therefore, meticulous examination of the PT is essential to avoid missing and IBC component.

Keywords: Phyllodes tumor, invasive carcinoma, immunohistochemistry

CR 91: Microcystic/reticular schwannoma of stomach; a rare histological subtype

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Introduction: Schwannoma is a benign nerve sheath tumour usually occurring in head and neck region and extremities with several morphological subtypes including ancient, cellular, plexiform, epithelioid and microcystic/reticular. Microcystic reticular sub-type is the rarest subtype among those preferentially arising in visceral sites, most commonly in the gastrointestinal (GI) tract.

Case report: A 62-year-old woman, underwent upper GI endoscopy for non-specific GI symptoms with positive faecal immunochemical test and was found to have a 2.4x2.68cm hypoechoic well-circumscribed lesion in the gastric body. The mass was excised. On gross examination it was a submucosal 3 x 3 x 2cm well-defined nodule having a whitish yellow, solid, rubbery cut surface with a myxoid appearance. Microscopically, it showed a spindle cell lesion with areas of microcystic and reticular growth pattern in a myxoid and collagenous/hyalinized stroma. No cytologic atypia, necrosis, or mitosis was observed. The tumour was positive for S100 (diffuse strong) CD56, SOX10, and CD117 (weak, patchy) and negative for DOG-1 and AE1/AE3. Ki67 was <1%. The immunohistochemical profile excluded the possibility of reticular perineurioma (S100 & SOX10 negative). Immunohistochemical negativity for DOG-1 and positivity for S100 and SOX10 with the absence of KIT or PDGFR mutation excluded the diagnosis of gastrointestinal stromal tumour.

Discussion and conclusion: Microcystic/reticular schwannoma is a distinctive histological variant of schwannoma with a benign clinical course. Its microcystic structures closely imitate small tubular structures, cribriform pattern and signet ring cells and can mimic mucinous carcinoma especially on small biopsies resulting in diagnostic difficulties. Awareness of this distinct entity is essential to avoid confusion with carcinoma especially in GI tract.

Keywords: schwannoma, microcystic, reticular

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