

RP 1

**Distinguishing the tall cell from other subtypes of papillary thyroid carcinoma on fine needle aspiration: a morphometric and cytological study**

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**Introduction and objective:** Tall cell subtype of papillary thyroid carcinoma (T-PTC) is defined by the presence of tumour cells with a height: breadth ratio of  $>3$ . We aimed to determine if the cytomorphological features are sufficiently characteristic to enable its distinction from classic and other aggressive subtypes of PTC on fine needle aspiration cytology (FNAC).

**Methodology:** The cytological features of 20 cases of histologically proven T-PTC were compared with 20 cases of classic PTC (C-PTC). Three cases of columnar PTC (CC-PTC) and hobnail PTC (H-PTC) were also included. The presence of tall cells (height: breadth ratio  $>3$ ) was confirmed by morphometry. Thirty-seven parameters were analysed using a semi-quantitative scoring system, including background, architecture, cellular, and nuclear features. Fisher's probability test and Chi-square test were used in the statistical analysis.

**Results:** Isolated tumour cells, spindle cells, tall cells, and tail-like cells were seen in a significantly higher number of cases of T-PTC than C-PTC ( $p < 0.05$ ). The sensitivity, specificity, positive predictive value and negative predictive value of these features in identifying T-PTC ranged from 90-100% and approached 100% when all four features were present in a given case.

**Discussion:** The cytomorphological characteristics of T-PTC, H-PTC, and CC-PTC are distinctly different. Key features distinguishing T-PTC from C-PTC include tall cells, spindle-shaped cells, and tail-like cells with irregular nuclear contours. CC-PTC is characterized by columnar cells with elongated, pseudostratified nuclei. H-PTC is defined by clusters of cells with knobby contours and large, round cells exhibiting abundant cytoplasm.

**Conclusions:** These distinctive cytomorphological attributes can aid cytopathologists in differentiating these aggressive PTC subtypes from the classic subtype during preoperative FNAC.

**Keywords:** papillary carcinoma thyroid, tall cell, FNAC, cytomorphology, morphometry

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RP 4

**Incidence and temporal trends of lymphoma in Sri Lanka, 2005–2021: an analysis of National Cancer Registry data**

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**Introduction and objectives:** Globally, the incidence of lymphoma has been increasing, with regional and gender-specific variations. Understanding these patterns in a developing country like Sri Lanka is critical to guide cancer prevention and control strategies. This study aims to describe the incidence and temporal trends of lymphoma in Sri Lanka from 2005 to 2021.

**Methodology:** A retrospective analysis was conducted using population-based cancer incidence and mortality data from the National Cancer Control Programme (NCCP) registries. Age-standardized rates (ASR) were calculated, and temporal trends were assessed using join point regression to estimate annual percent change (APC) and average annual percent change (AAPC).

**Results:** A total of 15,577 lymphoma cases were reported, with a male predominance (60%: 9,346 males; 6,231 females). The overall incidence increased significantly over 16 years (AAPC: 4.1%;  $p < 0.05$ ), with a 1.4-fold rise in both sexes and a marked rise among 0–19-year-olds, exclusively post-2019 (females: 2.5-fold, males: 4.5-fold;  $p < 0.05$ ). Non-Hodgkin lymphoma (NHL) accounted for 79% and showed the most significant and consistent increase (AAPC: 3.2%;  $p < 0.05$ ), with a two-fold rise in both genders. Hodgkin lymphoma (HL) comprised 21%, with a three-fold rise in females but an overall non-significant trend. NHL mortality rose significantly in males ( $p < 0.05$ ), while female mortality remained stable.

**Discussion:** The increasing lymphoma burden, particularly among males and older adults, may reflect both genuine rises in disease and improvements in diagnostics and reporting.

**Conclusion:** Lymphoma incidence in Sri Lanka is rising, underscoring the need for strengthened surveillance, early detection, and tailored cancer control strategies.

**Keywords:** incidence, lymphoma, mortality, Sri Lanka

## Complete audit cycle on completeness of documentation and concordance of diagnosis of frozen sections

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**Introduction:** Frozen section (FS) is a vital diagnostic procedure for immediate clinical decision making. Accuracy of diagnosis and proper documentation are essential for ensuring continuity of care, quality assurance and medicolegal purposes.

**Objective:** To evaluate the completeness of documentation and concordance of diagnosis of FS in a tertiary care centre.

**Methodology:** Completeness of FS reporting was assessed using five parameters. Pathology reports of FS performed during January to September 2024 were audited. Types of FS included in the audit and re-audit were sentinel lymph nodes, resection margins, brain smears, and ganglion assessment in bowel. Components of a complete FS report including the patient identification number (PIN), imaging findings, specimen receipt time (RT), time of informing diagnosis (informed time - IT) and diagnostic concordance between the FS and final histological diagnosis were documented. Re-audit was performed from October 2024 to May 2025, after introducing a rubber stamp on the request form containing all the components to be filled by a doctor.

**Results:** A total of fifty-seven FS were evaluated in the first audit cycle. All request forms contained PIN (100%). The rates of documenting imaging findings, RT, IT, concordance, were 80% (46/57), 14% (8/57), 36% (21/57) and (96% (55/57) respectively. PIN, RT, and IT were present in all forty-six reports (100%) included in the re-audit. Imaging findings and concordance were documented in forty-one (89%) and forty-five (97%) respectively.

**Conclusion:** Documentation of FS details improved significantly after introducing a rubber stamp. However, 100% concordance could not be achieved due to the requirement of immunohistochemistry in some cases. Documentation of imaging findings was the least improved component owing to lack of information provided from wards/theatres. Proper advising of clinical staff will minimise information gaps in the future.

**Keywords:** documentation, frozen sections

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## RP 6

### Audit on completeness of reporting core data items of thyroid malignancies

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**Introduction and objective:** The Royal College of Pathologists (RCPATH) provides a core dataset for histopathological reporting of thyroid malignancies to ensure diagnostic accuracy and consistency. This audit evaluated the completeness of thyroid cancer histology reports at National Hospital Kandy, focusing on adherence to RCPATH's core data elements.

**Methodology:** Eighty-nine thyroid cancer reports, issued from January 1 to December 31, 2024, were included in the audit. Each report was evaluated against RCPATH core dataset criteria, including operative procedure, intraoperative findings, specimen submitted, tumour site, histologic type, tumour size, focality, histological grade, tumour circumscription, capsular invasion, extrathyroidal extension, lymphovascular invasion, margin status, lymph node status, mitotic activity, necrosis, coexisting pathology, and parathyroid status. Reports with confirmed distant metastasis were excluded. Completeness of reporting core data items was analysed.

**Results:** Specimen details, operative procedure, specimen submitted, tumour site, focality, tumour size, histologic type, capsular invasion, margin status, and lymph node status were documented in all reports. Tumor circumscription (98.87%), coexisting pathology (97.75%), lymphovascular invasion (95.50%), and extrathyroidal extension (89.88%) were well-reported. Presence of mitotic activity and necrosis was mentioned in 79.97% of reports. However, histological grade and parathyroid status were missing in 88.70% and 42.69% of reports, respectively. Intraoperative findings were inconsistently documented. Only 42.69% of reports included all required core elements.

**Discussion:** While most RCPATH elements were documented, significant gaps in reporting of histological grade and parathyroid status suggest a need for standardized reporting and improved availability of clinical data.

**Conclusion:** Although compliance was high, report completeness remains suboptimal. Structured templates and targeted training are recommended to improve adherence to guidelines and report quality.

**Keywords:** thyroid malignancies, core data, audit

## A descriptive cross-sectional study on clinicopathological features of osteosarcoma diagnosed at a tertiary care centre

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**Introduction and objective:** Osteosarcoma (OS) is the commonest primary malignant bone tumour worldwide.

**Method:** Clinicopathological features of all OS cases diagnosed at Departments of Histopathology, Faculty of Medicine, Colombo, National Hospital of Sri Lanka and Lady Ridgeway Hospital from January 2021- December 2023 were reviewed.

**Results:** Sixty-five cases were included (34 biopsies; 21 post-neoadjuvant chemotherapy (PNAC) en bloc excisions; 10 PNAC amputations). Male: female ratio was 1.5:1. 72.3% (47/65) patients were between 10-19 years (mean age-17.32). Majority (97%,63/65) affected long bones (femur-32/65, tibia-23/65, humerus-5/65; fibula-2/65; radius-1/65). Meta-diaphysis was commonly affected (47/63;74.6%) followed by metaphysis (14/63;22.2%) and meta-epiphysis (2/63; 3.1%). Clinical presentations included lump/swelling (51/65;78.4%) and pain (14/65;21.5%). The majority were identified as OS on radiology (94%,61/65) and others as Ewing sarcoma (1/65), giant cell tumour (1/65) and malignant without a definite diagnosis (2/65). All 65 cases were conventional OS comprising osteoblastic (33/63;), chondroblastic (27/63), fibroblastic (1/63), telangiectatic OS(2/63), chondromyxoid fibroma-like (1/63) and chondroblastoma-like (1/63) patterns. Malignant osteoid (MO) was mostly lace-like (60/65;92.3%), followed by trabecular (26/65;30.7%), filigree (18/65;27.6%), nodular (17/65;26.1%), and broad sheet-like (3/65;4.6%). MO was extensive in 53 (53/65;81.5%) and focal in 12 (12/65;18.4%). Predominant cell types were spindled (43/65;66.1%) and epithelioid (22/65;33.8%) followed by small (3/65;4.6%), plasmacytoid (3/65;4.6%) and giant cells (GC) (9/65;13.8%). Additional features included tumour scaffolding (27/65;41.5%), normalization of atypia (15/65;23%), haemangiopericytomatous vessels (8/65;12.3%) and non-neoplastic GC (14/65;21.5%). Tumour necrosis following NAC ranged from 7-100% (mean 44%). Huvos grading was I (1/31), II (9/31), III (11/31) and IV (10/31%).

**Discussion and conclusion:** The clinical characteristics are similar to international data. Uncommon morphological features observed were haemangiopericytomatous vessels, broad sheet-like malignant osteoid and non-neoplastic giant cells. Nearly 1/3 of cases showed >90% response to neo-adjuvant chemotherapy.

**Keywords:** osteosarcoma

## Uncommon histological features of giant cell tumours of bone which may lead to misdiagnosis: a review of clinicopathological features of 59 cases

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**Introduction and objectives:** Giant cell tumour of bone (GCTB) is a locally aggressive, rarely metastasizing neoplasm. This study highlights the clinicopathological features of GCTB, with emphasis on uncommon histological features.

**Methodology:** All GCTB cases diagnosed at Departments of Histopathology, Faculty of Medicine, Colombo and National Hospital of Sri Lanka from January 2021- December 2023 were reviewed.

**Result:** The 59 cases included seven biopsies, 33 curettings and 19 en-bloc excisions (one post-denosunab excision). Male: female ratio was 1.2:1. The 20-39 age group was most commonly affected (29/59; 49.1%; mean age - 36.2). 76.2% (45/59) involved long bones (femur-21/59, tibia-12/59, radius-7/59, humerus-5/59). Meta-epiphysis (32/45;71.1%) was most commonly affected. 55(93.2%) cases were called GCT on imaging. Four (6.7%) were called aneurysmal bone cysts. The denosumab-treated case showed abundant reactive osteoid (RO) without viable tumour (1/59). Irregular GC distribution (24/58; 41.3%) and spindled tumour cells (42/58;72.4%) were not uncommon. Uncommon histological features included; storiform growth (16/58;27.5%), stromal overgrowth (5/58;8.6%), irregular nuclear contours (2/58; 3.4%), haemangiopericytomatous vessels (25/58;43.1%), clear cells (5/58;8.6%), chondroid metaplasia (3/58;5.1%), variably sized GC (2/58;3.4%) and vascular spaces around tumour cells (9/58;15.5%). Forty-two (72.4%) cases showed focal RO (nodular-25/42, trabecular-15/42). Lace-like osteoid was rare (2/42). Mitoses ranged from 1-36 per 2mm<sup>2</sup> (mean-6.1). Four showed vascular invasion (4/58;6.8%). All 18 untreated excisions showed soft tissue extension. Permeative growth and malignant transformation were absent.

**Discussion and conclusion:** Clinical characteristics align with international data. Awareness of the uncommon histological features will help to avoid misdiagnosis of GCTB especially in scanty specimens.

**Keywords:** Giant cell tumour of bone, pathology

**An audit of diagnostic adequacy in renal biopsies based on international standards**L.J. De Silva<sup>1</sup>, L.S.D. De Silva<sup>2</sup>, A.A.H. Priyani<sup>1</sup><sup>1</sup>Department of Pathology, Faculty of Medicine, University of Colombo, Sri Lanka<sup>2</sup>Research Unit, Ministry of Health, Sri Lanka[lanidesilva7@gmail.com](mailto:lanidesilva7@gmail.com)

**Introduction and objectives:** Renal biopsy is a critical diagnostic procedure in nephrology. The adequacy of biopsy samples, measured by the glomerular yield, directly impacts diagnostic accuracy and patient management. This audit aimed to evaluate the adequacy of renal biopsy specimens received at a tertiary care histopathology unit over a one-year period.

**Methodology:** A retrospective audit was conducted on all renal biopsies received between 1<sup>st</sup> January to 31<sup>st</sup> December 2023. Adequacy was assessed based on international/Banff criteria: a minimum of 10 glomeruli for native renal biopsies and at least 10 glomeruli plus two arteries for transplant biopsies. Data were extracted from histopathology reports and analysed using descriptive statistics.

**Results:** A total of 188 biopsies were evaluated, including 158 native (84.0%) and 30 transplant (16.0%) biopsies. The mean age was 43.57 years (SD14.36), and 55.3% (n=104) were male. The mean total core length was 11.20mm (SD6.67) and greater in transplant (12.67 mm, SD6.64) than native (10.92 mm, SD6.64) biopsies. The mean glomerular count was 8.69 (SD7.43), with transplant biopsies yielding slightly more glomeruli ( $\bar{x}$  9.17) than native ( $\bar{x}$  8.60). Only 39.2% (n=62) of native biopsies and 30% (n=9) of transplant biopsies met adequacy criteria. Approximately half of the native biopsies (53.1%, n=84) contained at least seven glomeruli, while 46.7% (n=14) of transplant biopsies had at least seven glomeruli plus one artery.

**Discussion and conclusion:** A substantial proportion of renal biopsies did not meet adequacy criteria, potentially limiting diagnostic accuracy. Enhancing biopsy technique, standardizing protocols, and providing targeted training are recommended to improve glomerular yield and reduce repeat procedures. Regular audits can help drive continuous quality improvement in renal biopsy services.

**Keywords:** renal biopsy, adequacy, transplant, audit

**Defining the optimal core length for renal biopsy adequacy: a data-driven threshold from a Sri Lankan perspective**L.J. De Silva, L.S.D. De Silva<sup>2</sup>, A.A.H. Priyani<sup>1</sup><sup>1</sup>Department of Pathology, Faculty of Medicine, University of Colombo, Sri Lanka<sup>2</sup>Research Unit, Ministry of Health, Sri Lanka[lanidesilva7@gmail.com](mailto:lanidesilva7@gmail.com)

**Introduction and objectives:** Adequate tissue sampling is essential for accurate histopathological diagnosis in renal biopsies. Insufficient samples may compromise diagnostic accuracy and necessitate repeat procedures. This study aimed to evaluate the relationship between biopsy core length and diagnostic adequacy and to determine an optimal cut-off length that maximizes diagnostic yield.

**Methodology:** A retrospective analysis was conducted on all renal biopsy samples obtained between January 2023 and December 2024 at a tertiary care centre. Biopsy adequacy was recorded as a binary outcome, and core lengths were measured in millimetres. Adequacy was assessed based on international /Banff criteria: a minimum of 10 glomeruli for native renal biopsies and at least 10 glomeruli plus 2 arteries for transplant biopsies. Receiver operating characteristic (ROC) curve analysis was used to evaluate the predictive ability of core length, and the optimal cut-off was determined using the Youden Index (sensitivity+specificity-1).

**Results:** Of the total 351 specimens, 284 (80.91%) were native and 67 (19.09%) were transplant biopsies. Majority was male (n=183, 52.14%). Approximately a third (n=128, 36.5%) was deemed adequate and 223 (63.5%) inadequate. The mean core length was 11.67mm (SD=6.56 mm). ROC analysis demonstrated fair discriminative ability, with an area under the curve of 0.71 (95% CI:0.65-0.76). The optimal cut-off length was 11.5mm, corresponding to a sensitivity of 60.9%, specificity of 70.9%, and a maximum Youden Index of 0.318.

**Discussion and conclusion:** A renal biopsy core length of  $\geq 11.5$  mm is associated with improved diagnostic adequacy for both native and transplant biopsies. This cut-off serves as a practical benchmark for clinicians performing biopsies, particularly in settings where on-site adequacy assessment is not available.

**Keywords:** renal biopsy, core length, diagnostic adequacy, ROC analysis, Youden Index

## RP 11

**Diagnostic role of Bmi1 in oesophageal squamous cell carcinoma**

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**Introduction and objectives:** Oesophageal squamous cell carcinoma (OSCC) is one of the most common malignancies worldwide. Despite being an aggressive malignancy, a reliable minimally or non-invasive serological marker for diagnosis is still elusive. In the present study, we intend to study the diagnostic role of Bmi1 in OSCC.

**Methodology:** Fifty-one (51) consecutive biopsy-proven cases of OSCC and age and sex matched symptomatic, endoscopy/biopsy-negative controls were included. Serum levels of autoantibodies against Bmi1 were measured by reverse capture enzyme-linked immunosorbent assay (ELISA). Serum levels were correlated with age, gender, site, differentiation, stage, and overall survival.

**Results:** Patients (aged 28-81 years) showed a male predominance. Serum autoantibody levels against Bmi1 were significantly higher in OSCC patients than controls (median 220.8 vs 98.0,  $p < 0.05$ ). A Bmi1 level  $\geq 220.8$  yielded an area under the curve (AUC) of 0.85, with 85.0% sensitivity and 84.0% specificity. Elevated Bmi1 was significantly associated with nodal metastasis ( $p = 0.014$ ), advanced stage ( $p = 0.035$ ) and reduced mean survival (27.14 months). On univariate analysis, poor differentiation ( $p = 0.002$ ) and advanced stage ( $p = 0.013$ ) were significant risk factors.

**Discussion and conclusion:** High Bmi1 expression correlates with poor differentiation, advanced stage, and reduced survival, highlighting its potential as a diagnostic and prognostic biomarker. It offers a non-invasive method for the early detection of oesophageal squamous cell carcinoma. Its role in cancer stem cell regulation and therapy resistance further supports its use in targeted screening and diagnostic panels.

**Keywords:** Bmi1, oesophageal squamous cell carcinoma, ELISA

## RP 12

**Solitary plasmacytoma: journey through bone and beyond, a retrospective clinicopathological study from a tertiary care cancer centre in India**I. Dhal<sup>1</sup>, S. Agarwal<sup>1</sup>, S. Nanda<sup>2</sup>, Z. Chowdhury<sup>1</sup>, N. Singh<sup>1</sup>, A. Singh<sup>3</sup><sup>1</sup>Department of Onco Pathology, Homi Bhabha Cancer Hospital, Varanasi, India<sup>2</sup>Department of Radiation Oncology, Homi Bhabha Cancer Hospital, Varanasi, India<sup>3</sup>Department of Medical Oncology, Homi Bhabha Cancer Hospital, Varanasi, India[dripsitadhal@gmail.com](mailto:dripsitadhal@gmail.com)

**Introduction and objective:** Solitary plasmacytoma (SP), a rare plasma cell neoplasm, is characterised by localised clonal plasma cell proliferation without systemic involvement. It manifests as solitary plasmacytoma of bone (SPB) or extramedullary plasmacytoma (EMP). Limited data exist on SP from Indian cohorts. The objective of this study was to describe the clinicopathological features of solitary plasmacytoma at a tertiary care centre.

**Methods:** This was a retrospective study of 24 cases of SP identified from a cohort of 799 plasma cell neoplasms. Clinical records, histopathological and immunohistochemical profiles, and laboratory investigations were reviewed. Treatment strategies included radiotherapy, surgical excision, and/or systemic chemotherapy depending on anatomical location and disease burden. Patient outcomes were assessed in terms of overall survival (OS) and disease-free survival (DFS). Ethical approval was obtained from the Institutional Ethics Committee (IEC no. 11000801).

**Results:** Of the 24 cases of SP 15 (62.5%) were SPB and 9 (37.5%) were EMP. The median age at presentation was 62.5 years, with a male predominance (male: female ratio 8:1). The vertebrae and pelvic bones were the most frequently involved sites in SPB, while EMP predominantly involved the upper aerodigestive tract. Pain was the most common presentation. Serum M protein was detected in 17 (70.8%) patients. Radiotherapy, particularly with volumetric modulated arc therapy (VMAT), was the primary treatment modality in 75% (n=18) of patients. At six months, OS and DFS were 87.7% and 61.7%, respectively. Disease progression occurred in nine (37.5%) patients, with four (16.7%) progressing to multiple myeloma.

**Conclusion:** SP constitutes a distinct clinicopathologic entity within plasma cell neoplasms, with heterogeneous anatomical presentations and potential for progression to multiple myeloma. Timely diagnosis, site-specific radiotherapy, and rigorous long-term surveillance are essential. This study augments limited Indian data and highlights the need for standardized therapeutic protocols.

**Keywords:** solitary plasmacytoma, multiple myeloma, radiotherapy

## RP 13

**An audit of reporting of thyroid cytology specimens and their correlation with thyroid histology**

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**Introduction and objectives:** The Royal College of Pathologists recommends assigning Thy categories in thyroid cytology for consistent reporting and audit. This audit aimed to assess (1) the proportion of reports with a Thy category, (2) distribution across Thy categories, (3) correlation with histology, and (4) referral patterns to multidisciplinary team (MDT) or specialist centres.

**Methodology:** A retrospective review of 100 thyroid cytology cases (2024) at Cumberland Infirmary was performed. Distribution by Thy category was assessed against national data. Where available, histology was used to calculate positive predictive value (PPV). Referrals to thyroid cancer MDT and for specialist opinions were reviewed.

**Results:** Thy categories were assigned in 98% of reports. Distribution aligned 50% with national data. Higher-than-expected Thy1/1c (34%) and Thy3a (26%) rates were noted. Histological correlation was available in 24 cases. PPVs were 100% for Thy4 and Thy5, 60% for Thy3f, and 23% for Thy3a. All Thy5 and most Thy4 cases were referred to MDT. Despite tertiary advice, 32% of Thy3 cases were referred.

**Discussion:** Good compliance with RCPATH guidance was observed. Overrepresentation of Thy1 and Thy3a categories may reflect local sampling or interpretive practices. PPVs were within or above national ranges. Referral of Thy3 cases varied from tertiary expectations.

**Conclusion:** This audit supports high standards in cytology reporting but highlights the need for a local protocol on Thy3 referrals. A re-audit is recommended in 12 months.

**Keywords:** thyroid cytology, audit

## RP 14

**Clinical, endoscopic and histomorphological spectrum of immune checkpoint inhibitor - associated colitis**R. Dutta, R. Mannan<sup>2</sup>, S. Lennon<sup>3</sup><sup>1</sup>*Department of Pathology, All India Institute of Medical Sciences, New Delhi, India*<sup>2</sup>*Department of Surgical Pathology, City of Hope, Duarte, California, United States of America*<sup>3</sup>*Department of Pathology, UST, Philippines*[rimleedutta@aaiims.edu](mailto:rimleedutta@aaiims.edu)

**Introduction and objectives:** Immune checkpoint inhibitors (ICPI) significantly improve clinical outcomes in various cancers. However, colitis is one of the most important adverse reactions caused by ICPIs, which are known to elicit variable injury patterns in the gastrointestinal mucosa with corresponding endoscopic abnormalities. In this retrospective study, we tried to analyse and classify the clinical, endoscopic, and histomorphological spectrum of ICPI-associated colitis.

**Methodology:** The institutional database was retrospectively searched for cases of ICPI-associated colitis over a four-year period. Colonic biopsies were reviewed, and histologic patterns of injury were recorded. Relevant clinical and imaging details were gathered.

**Results:** Forty-six patients with ICPI-colitis were identified, following colonoscopy (41/46, 89%) or flexible sigmoidoscopy (5/46, 11%) with biopsy. The most common cause for ICPI-colitis was seen to be pembrolizumab (22/46, 48%) with the predominant presenting symptom being diarrhoea (41/46, 89%) of intermediate grade (CTCAE G2, 17/46, 13.9%). In ICPI colitis attributed to pembrolizumab, most of the cases showed apoptotic colopathy (8/15, 53%) followed by mixed histologic injury patterns (7/17, 41%) comprising apoptotic colopathy and focal or diffuse active colitis. Apoptotic colopathy on biopsy was associated mostly with normal appearing colonic mucosa on colonoscopy. On the other hand, severe ulcerative lesions and pseudomembranous colitis features on colonoscopy corresponded to mostly mixed histologic patterns of injury on biopsies. Refractory ICPI colitis resulting in intestinal rupture led to surgical resection in one case.

**Discussion and conclusion:** ICPI colitis represents a varied spectrum of histologic injury patterns, of which apoptotic colopathy and mixed injury patterns comprising apoptosis and focal/diffuse active colitis, or lymphocytic colitis were the most prevalent in our study cohort.

**Keywords:** immune checkpoint inhibitors, ICPI- associated colitis

## Seropositive versus seronegative autoimmune hepatitis: comparative analyses of histomorphological characteristics in liver biopsies of autoimmune hepatitis patients

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**Introduction and objectives:** Lack of diagnostic biomarkers in conjunction with the wide spectrum of clinical presentations, make the diagnosis of autoimmune hepatitis (AIH) challenging, specifically in seronegative patients. In this regard, apart from clinical features, histological evaluation of liver biopsies is of paramount significance in arriving at the diagnosis. In this study, we tried to compare and evaluate any plausible difference in histomorphological parameters between seropositive and seronegative cases of AIH.

**Methodology:** Cases of AIH were shortlisted by retrospectively searching our computerized database. Stained slides of available cases were then retrieved, reviewed and morphologically graded, based on several histological parameters which included architecture, density of portal tract inflammation (PTI) and composition of inflammatory infiltrate, interface hepatitis, confluent necrosis, lobular inflammation, presence of emperipolesis, acinar transformation, bile ductular proliferation, lymphocytic cholangitis, cholestasis, feathery degeneration, Mallory Denke (MD) bodies, macro-or-microvesicular steatosis, plasma cell or lymphoid clusters, Russell body, endotheliitis, Kupffer-cell hyperplasia, hyaline globules, nuclear glycogenisation, P-I-R score of liver fibrosis, nodule size and septal thickness. Pertinent clinical information was collected. The parameters were compared between the seropositive and seronegative cohorts.

**Results:** Out of 65 AIH-cases, 44(67.6%) were found to be seropositive, while the rest were seronegative. Severity of PTI, lymphocytic cholangitis and endotheliitis were found to be greater in the seropositive group. MD bodies though occasional were also found only in this group.

**Discussion and conclusion:** Seronegative and seropositive AIH showed similar morphological features. Sample size was a limitation. Studies with a larger cohort of seronegative AIH cases may be needed to highlight smaller differences.

**Keywords:** autoimmune hepatitis, seropositive AIH, seronegative AIH, treatment responsive AIH, incomplete response/treatment failure AIH

## Comprehensive histopathological audit of appendectomy specimens: analysis of diagnostic patterns and clinical correlations

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**Introduction and objectives:** Appendectomy is one of the most common surgical procedures worldwide, and histological examination plays a crucial role in diagnostic evaluation and detecting incidental findings that need clinical attention. This audit aims to analyse the spectrum of histopathological findings in appendectomy specimens over a period of 16 months from 2024 to 2025, to evaluate common diagnostic trends, assess the incidence of negative appendectomies and identify rare and clinically significant cases.

**Methodology:** A retrospective audit was conducted on 182 appendectomy cases, categorizing diagnoses into acute appendicitis (AA), lymphoid follicular hyperplasia (LFH), neoplasms (neuroendocrine tumours, sessile serrated lesion, low-grade appendiceal mucinous neoplasms (LAMNs), adenocarcinoma), fibrous obliteration and nonspecific changes. Demographic data (age, gender), diagnostic subcategories (e.g. suppurative, serositis), and unusual findings (parasitic infestations, granulomatous inflammation) were analysed. Statistical evaluation included frequency distribution and age/gender associations.

**Results:** The majority of cases (68%; n=118) were diagnosed as AA with serositis being noted in 55% (n=65) of these. LFH (18%; n=33); was prevalent in paediatric patients (mean age: 12 years). 4% (n=7) of Neoplasms were identified comprising neuroendocrine tumours (n=3), sessile serrated lesions (n=2), LAMN (n=1) and adenocarcinoma (n=1). 10% (n=18) of appendectomies showed nonspecific findings, which was predominant in females (65%, n=12). Rare findings included granulomatous appendicitis (n=2), *Enterobius vermicularis* infestation (n=2), and Crohn-like features (n=1).

**Discussion:** The high rate of serositis-associated appendicitis suggests advanced inflammation at presentation. The predominance of LFH in children correlates with physiological immune responses. The negative appendectomy rate was 10%, which falls within the commonly accepted limit of 10–20% in surgical literature, but it still underscores the ongoing diagnostic challenges in clinically equivocal cases.

**Conclusion:** This audit confirms the critical role of histopathological assessment in appendectomy specimens, particularly in guiding clinical management and detecting unexpected neoplasms. Continued emphasis on thorough pathological examination remains warranted.

**Keywords:** appendectomy, acute appendicitis

**A retrospective analysis of tumour-infiltrating lymphocytes and their association with tumour budding and lymphovascular invasion in colorectal carcinoma**

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**Introduction and objectives:** Colorectal carcinoma (CRC) remains a major cause of cancer morbidity and mortality worldwide. Stromal tumour-infiltrating lymphocytes (TILs) play a critical role in the immune response against CRC, influencing potential tumour behaviour. Tumour budding and lymphovascular invasion (LVI) are also key histological features associated with tumour spread. This study aimed to determine the association between TIL grade and the presence of tumour budding and LVI in resected CRC specimens.

**Methodology:** A retrospective analysis of consecutive 100 CRC specimens (2020-2023) was conducted. Exclusion criteria include specimens with prior chemoradiation and multiple tumours. Data included TIL grade [low (0-10%), intermediate (10-50%), high (50-100%)], tumor budding (present/absent), and LVI status. Statistical analysis was performed to determine associations using chi-square tests and logistic regression.

**Results:** Of the 100 cases, 32% exhibited low TILs, 52% intermediate, and 16% high TILs. Tumor budding was present in 62% of cases, while LVI was observed in 34%. A significant inverse correlation was noted between higher TIL grades (intermediate/high) and tumor budding ( $p < 0.05$ ). Conversely, LVI was more frequent in cases with low TILs (45%) compared to intermediate/high TILs (25%,  $p < 0.01$ ).

**Discussion and conclusion:** This study demonstrates that higher TIL levels are associated with decreased tumour budding suggesting that higher lymphocytic infiltration may suppress tumour budding. Similarly, lymphovascular invasion was less frequent with higher TIL. Thus, these findings may be a good indication that TIL may help suppress tumor aggressiveness through immune surveillance. While limited by its retrospective nature and variable follow-up, these results support the use of TIL grading as a biomarker, but prospective studies would be necessary to explore their clinical applications.

**Keywords:** tumour-infiltrating lymphocytes, tumour budding, lymphovascular invasion

**Association between stromal tumour-infiltrating lymphocytes and pathological stage in colorectal carcinoma: a retrospective study**G. M. D. D. Galagedara, J. Hewavisenthi<sup>1</sup>, T. P. M. Bopagoda<sup>1</sup>, S.M. Fernandopulle<sup>2</sup><sup>1</sup>Department of Pathology, Faculty of Medicine, University of Kelaniya, Sri Lanka<sup>2</sup>Department of Pathology, Colombo North Teaching Hospital, Ragama, Sri Lanka[dilushi.da@gmail.com](mailto:dilushi.da@gmail.com)

**Introduction and objectives:** Stromal tumour-infiltrating lymphocytes (TILs) are a critical component of the immune response against colorectal adenocarcinoma (CRC), influencing disease progression and prognosis. This study aimed to assess the correlation between stromal lymphocyte grade and tumour stage (both tumour T-stage and nodal N-stage) in CRC to determine the potential prognostic significance of TILs.

**Methodology:** The CRC histology reports and slides of 100 patients were analysed retrospectively, focusing on TIL grade (low: 1-10%, intermediate: 10-50%, high: 50-100% stromal TILs), tumour stage (pT1–pT4), and nodal stage (N0–N2). Descriptive statistics and the chi-square tests were used to determine associations between stromal TIL grade and T/N stages.

**Results:** The cohort comprised 56 women and 44 men, with a median age of 62 years. TIL grades were distributed as low (34%), intermediate (52%), and high (14%). Higher TIL grades (intermediate/high) were more frequent in early T-stages (pT1–pT2: 68%) compared to advanced T-stages (pT3–pT4: 45%). A similar trend was observed for N-stage, with higher TIL grades in N0 (65%) versus N1–N2 (48%). The chi-square test revealed a significant inverse correlation between TIL grade and T-stage ( $p < 0.05$ ), but there was no significant association with N-stage ( $p > 0.1$ ).

**Discussion and conclusion:** The findings suggest that higher TIL infiltration is associated with less advanced tumour stages, supporting the role of the immune response in limiting local tumour progression and highlighting its potential as a biomarker for favourable local disease control. The lack of correlation with nodal involvement may result from divergent mechanisms governing lymphatic spread.

**Keywords:** tumour infiltrating lymphocytes, colorectal carcinoma, tumour/nodal stage

**Clinicopathological profile of parotid gland neoplasms in a Sri Lankan oncology referral centre**

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**Introduction and objectives:** Parotid gland tumours comprise a wide spectrum of benign and malignant tumours. This study aimed to evaluate the demographic and histological patterns of parotid tumours at a tertiary care cancer centre in Sri Lanka and compare findings with already existing local and international data.

**Methodology:** A retrospective analysis was performed on the data of patients who underwent surgery for parotid gland tumours at the National Cancer Institute (NCI) from 2021 onwards. Data on age, sex and histological type were analysed and compared with existing literature.

**Results:** Fifty-five cases were included in the analysis. The mean age was 51.35 years (SD=16.892) and 51% of the patients were males. 63.6% (35/55) were malignant tumours, which is significantly higher than the global (15-32%) and previous local data (33-43%). Benign tumours accounted for 36.4% (20/55). Mucoepidermoid carcinoma was the most common malignancy (16/35; 29%), with 75% female predominance. Warthin tumour was the most frequent benign tumour (9/20; 45%).

**Discussion and conclusion:** The elevated malignancy rate may reflect referral bias to a national oncology centre. The higher frequency of Warthin tumours over pleomorphic adenomas contrasts with traditional patterns. Mucoepidermoid carcinoma is the most commonly found malignant tumour among the patients who underwent parotid surgery at NCI - Maharagama, Sri Lanka, whereas Warthin tumour had the highest frequency among benign cases. Establishing tumour registries in island-wide tertiary care institutes would help to better understand the shifting landscapes of parotid gland tumours.

**Keywords:** parotid gland tumours, Sri Lankan oncology referral centre

**An appraisal of the utilization of the International Academy of Cytology Yokohama standardized reporting system for breast fine needle aspiration biopsy cytopathology: a study of diagnostic accuracy, risk of malignancy and histopathological correlation**D. Gupta<sup>1</sup>, N. Bhutani<sup>2</sup>, M. Bhargava<sup>1</sup><sup>1</sup>All India Institute of Medical Sciences, Gorakhpur, Uttar Pradesh, India<sup>2</sup>NDMC and Hindu Rao Hospital, Delhi, India[Deepugupt1989@gmail.com](mailto:Deepugupt1989@gmail.com)

**Introduction and objectives:** Breast carcinoma is the most commonly encountered cancer among women globally. Triple assessment is an important approach in the pre-operative assessment of breast lesions. The International Academy of Cytology (IAC) Yokohama system for reporting breast fine needle aspiration biopsy cytopathology (FNAC) standardises reporting and allows the calculation of risk of malignancy (ROM). The objectives of the present study were to categorize all breast FNAC specimens according to the newly proposed IAC Yokohama reporting system and to determine diagnostic accuracy, ROM for each category, sensitivity, specificity, negative predictive value (NPV) and positive predictive value (PPV) along with cyto-histopathological correlation.

**Methodology:** Nine hundred and forty cases of breast FNAC were retrieved from December 2019 to December 2020, categorized from C1 to C5 according to the new IAC system and analysed to determine diagnostic accuracy, ROM, cyto-histopathological correlation, specificity, sensitivity, NPV, PPV and interobserver variability. Of the 940 cases, details for cyto-histopathological correlation were available in 358.

**Results:** Out of 940 cases, 57 (6%) were categorized as insufficient, 658 (70%) benign; 9 (1%) atypical, probably benign; 28 (3%) suspicious; and 188 (20%) malignant. ROM was calculated as 0% in C1 and 4%, 66%, 83% and 99% in the C2, C3, C4 and C5 categories respectively. Statistical analysis showed 94.5% sensitivity, 98.5% PPV, 95.8% NPV, 98.9% specificity and 97% diagnostic accuracy

**Conclusion:** The new IAC standardized reporting system of breast FNAC evokes the utilization of a rapid, accurate and low-cost diagnostic test and broadens the understanding and application of breast FNAC as a diagnostic tool.

**Keywords:** breast, cytology, International Academy of Cytology Yokohama system

## RP 22

**Audit of turnaround time for intraoperative touch imprint cytology of sentinel lymph nodes in a tertiary care histopathology laboratory with high caseload**

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**Introduction and objectives:** Intraoperative touch imprint cytology of sentinel lymph nodes (SLNs) plays an essential role in real-time decision-making during breast cancer surgery. Timely communication of results is critical to avoid unnecessary intraoperative delays and ensure patient safety. This audit was conducted to evaluate turnaround time (TAT) and identify areas to be improved to enhance intraoperative efficiency in a busy tertiary care histopathology service.

**Methodology:** Twenty breast cancer surgeries with intraoperative SLN assessments were reviewed retrospectively over six months. The following time intervals were documented and analysed: specimen reception, slide preparation, staining, handover of stained slides to the pathologist, and result communication. TAT was measured from specimen arrival to result delivery, with standards of  $\leq 30$  minutes (optimal) and  $\leq 40$  minutes (acceptable). Rapid staining was compared with the ideal 4–6 minutes.

**Results:** The mean TAT was 40.6 minutes (range: 20–97). Eight cases (40%) exceeded 40 minutes and were delayed. Twelve (60%) were within the acceptable limit, of which six (30%) achieved the optimal  $\leq 30$  minutes. The average staining time was 27.6 minutes, while slide preparation and reporting averaged 7 and 6 minutes, respectively. Staining was the main contributor to the delay.

**Discussion and conclusion:** Delays were most evident when the same staff member managed both staining and frozen sections, indicating workload contribution. Staining was the main cause of prolonged TAT. Strategies to improve efficiency include streamlining workflow, training staff on urgent procedures, and enforcing clear protocols. A dedicated workstation is recommended, as using the routine cut-up stations for urgent smears also reduced efficiency. A follow-up audit is planned after introducing corrective measures.

**Keywords:** sentinel lymph node, intraoperative cytology, turnaround time, histopathology, audit

## RP 23

**Retrospective analysis of specialised immunohistochemical markers used at a referral centre for cancer diagnosis in Sri Lanka**B.Y. Hettiarachchi<sup>1</sup>, H.D. Wijesinghe<sup>1,2</sup>, M.V.C. de Silva<sup>1,2</sup><sup>1</sup>Centre for Diagnosis and Research in Cancer, University of Colombo, Sri Lanka<sup>2</sup>Department of Pathology, Faculty of Medicine, University of Colombo, Sri Lanka[buddhinihettiarachchi21@gmail.com](mailto:buddhinihettiarachchi21@gmail.com)

**Introduction and objectives:** Standard immunohistochemical (IHC) panels resolve most cases of cancer diagnosis. However, a subset of diagnostically challenging tumours requires more specialised IHC markers. This study aims to evaluate the utilization of specialised IHC markers at a referral centre in a resource limited setting.

**Methodology:** Of the 100 IHC markers available at the centre, 20 were categorized as specialised markers (IgG4, STAT6, INI1, PD1, CDK4, MDM2, AMACR, BER-EP4, P57, MUC4, C-MYC, beta HCG, Granzyme B, MPO, Glypican 3, SOX10, TLE1, SDHB, ERG, AR). All cases reported at the centre from January 2022 to May 2025 were reviewed for the usage of these markers.

**Results:** Of the 3343 cases reported at the centre, IHC testing of the selected markers was performed in 213 cases (6.37% of all cases; number tests=266). The most frequently utilized markers were SOX10 (n=43), ERG (n=33), IgG4 (n=35), TLE-1 (n=19), STAT6 (n=18), INI1 (n=21), Glypican 3 (n=16) and PD1 (n=16). C-Myc (n=5), MPO (n=4), SDHB (n=3), AR (n=5), beta HCG (n=1) were used less than six times over the three-year period. These markers were used mainly in the diagnosis of soft tissue tumours and lymphomas.

**Discussion and conclusion:** The frequent use of SOX10, ERG and IgG4 suggests that they may need to be more freely available as standard markers. The occasional use of the other 17 markers studied justifies their availability only at referral centres. Raising awareness among pathologists in the country about the availability of these markers in the centre may improve utilization.

**Keywords:** immunohistochemistry, cancer, diagnosis, resource limited setting

**Histological risk classification of Wilms tumor after chemotherapy: a tertiary care centre experience from India**M. Jain<sup>1</sup>, P. Prasad<sup>1</sup>, P. Srivastava<sup>1</sup>, P. Lal<sup>2</sup>, M.S. Ansari<sup>3</sup><sup>1</sup>Department of Pathology, <sup>2</sup>Department of Radiotherapy, <sup>3</sup>Department of Urology, SGP GIMS, Lucknow, India  
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**Introduction and objective:** Wilms tumour (WT) is a malignant renal tumour occurring in childhood. Histologically they are triphasic, biphasic or monophasic incorporating an admixture of blastemal, epithelial and mesenchymal elements. Unfavourable histological features include nuclear enlargement >three times, obvious hyperchromasia and multipolar mitotic figures. The SIOP (International Society of Paediatric Oncology) recommends preoperative chemotherapy followed by surgery. Post chemotherapy induced changes and viable tumour components are assessed on histology. SIOP histological risk classification includes low risk with cystic partially differentiated nephroblastoma/completely necrotic WT, intermediate risk with epithelial, stromal, mixed, regressive/focal anaplasia and high risk with diffuse anaplasia blastemal type on histology. Our objective was to perform histological risk stratification of Wilms tumour (WT) based on the SIOP (International Society of Paediatric Oncology) classification.

**Methods:** Cases of WT reported at a tertiary care centre in India from January 2021 to April 2025 were reviewed and categorized according to histological risk stratification of WT based on SIOP classification.

**Results:** Histological specimens from 49 patients with WT comprising biopsy (11), nephrectomy (24), and biopsy followed by nephrectomy (14) were evaluated. The mean age was 40 months (range 6 to 228 months). The male:female ratio was 32:17. WT involved the right (19; 38.7%), left (19; 38.7%) and bilateral kidneys (11; 22.4%). Thirty-eight (77.6%) received chemotherapy before histological assessment. Unfavourable histology was seen in three patients (6.1%). Diffuse anaplasia was present in one (2.0%) and blastemal type histology in six (12.2%). On SIOP histological risk classification one was low risk (2.0%), 32 were intermediate risk (65.3%), and six were high risk (12.2%). The mean follow-up duration was 21.3 months. During this period two patients died, and one experienced a recurrence. One death and one recurrence were recorded among the high-risk SIOP group.

**Conclusion:** This study summarizes SIOP histological risk classification in post chemotherapy WT patients.

**Keywords:** Wilms tumour, histological risk, classification

**A descriptive study of Gleason pattern 4 in prostatic acinar adenocarcinoma: experience from a tertiary care centre in Sri Lanka**D.T.T Jayasinghe, N.G.P.M Nanayakkara<sup>3</sup>, N.G.S.S Nanayakkara<sup>2</sup>, T.P.M Bopagoda<sup>3</sup>, S Fernandopulle<sup>1</sup>, S.J.De S Hewavisen<sup>1</sup><sup>1</sup>Department of Pathology, Colombo North Teaching Hospital, Ragama, Sri Lanka<sup>2</sup>Department of Mathematics, Faculty of Science, University of Ruhuna, Sri Lanka<sup>3</sup>Department of Pathology, Faculty of Medicine, University of Kelaniya, Sri Lanka[tharakaj.med@gmail.com](mailto:tharakaj.med@gmail.com)

**Introduction and objectives:** Understanding the presence and extent of Gleason pattern 4 helps in risk stratification and treatment planning for prostate cancer. This study describes the prevalence and architectural heterogeneity of Gleason pattern 4 in prostatic carcinoma.

**Methodology:** The study analysed 226 consecutive transrectal ultrasound (TRUS) -guided prostate biopsies reported from January 2020 to January 2025 at the Colombo North Teaching Hospital. Gleason pattern 4 in all prostate cancers was subtyped as cribriform, fused glands, poorly formed glands, and glomeruloid based on WHO/ISUP guidelines. The frequency and distribution of these subtypes was analysed using descriptive statistics.

**Results:** The median age of the patients was 72 years (IQR: 67–75). The overall prevalence of Gleason pattern 4 was 79.20% (179/226) and was associated with the following patterns as the dominant or codominant pattern: 5 – 75/179 (41.89%), 3 – 72/179 (40.22%), and 4 – 31/179 (17.32%). Overall percentage of each subtype was as follows: cribriform 51.06%, fused glands 35.78%, poorly formed glands 11.66% and glomeruloid structures 1.5%. The cribriform subtype was most frequent, in grade group 4 (55.33%), the fused subtype in grade group 5 (39.79%) and the glomeruloid subtype in grade group 2 (2.29%).

**Discussion and conclusion:** Cribriform subtype of Gleason pattern 4 was the most common across all grade groups, differing from global trends that typically report a predominance of the fused glands subtype. The rarity of the glomeruloid pattern aligns with international data. The high prevalence of cribriform architecture, especially in grade 4, is clinically relevant due to its known association with poor prognosis and aggressive behaviour.

**Keywords:** prostate acinar adenocarcinoma, Gleason score, Gleason pattern 4

### Association between clinicopathological features and Gleason grade group with emphasis on Gleason pattern 4 in prostatic adenocarcinoma

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**Introduction and objectives:** Gleason grading is important for risk stratification and management of patients with prostatic carcinoma, and the significance of Gleason pattern 4 is now recognized. This study aims to determine the association of clinicopathological features with both the Gleason grade group (GGG) and architectural subtypes of Gleason pattern 4 in GGG2 and GGG3.

**Methodology:** A total of 226 TRUS-guided prostate biopsies was analysed. Those exhibiting Gleason pattern 4 were subtyped as cribriform, fused, poorly formed and glomeruloid based on WHO criteria. The association between clinicopathological parameters (perineural invasion (PNI), lymphovascular invasion (LVI), intraductal carcinoma, high-grade PIN, extra-prostatic invasion, total tumor burden, prostate specific antigen (PSA) level, and age) and both GGG and the architectural subtypes of Gleason pattern 4 (in GGG 2 and 3) was assessed using the chi square test.

**Results:** A statistically significant association was found between the GGG (1-5), PNI ( $p < 0.001$ ), LVI ( $p = 0.01$ ), and PSA levels ( $p = 0.02$ ). In Gleason pattern 4 cancers [46/226 (20.35%) GGG2 and 30/226 (13.27%) GGG3] the architectural subtypes did not show a significant association with the clinicopathological parameters.

**Discussion and conclusion:** The overall GGG (1-5) was significantly associated with PSA levels and markers of tumor aggression, such as PNI and LVI, consistent with the existing literature. The architectural subtypes of Gleason pattern 4 in GGG2 and GGG3, however, did not show a significant association, suggesting that architectural subtypes of pattern 4, when considered in isolation, may have limited prognostic value. To better understand their clinical relevance, these subtypes should be evaluated against survival.

**Keywords:** prostate, acinar adenocarcinoma, Gleason, pattern 4

### An audit of placental histopathology referrals; are we following the 2022 RCPATH guidelines?

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**Introduction and objectives:** Placental histopathology (PH) plays a crucial role in neonatal care and the management of future pregnancies. The Royal College of Pathologists (RCPATH) guidelines 2022 have stated essential and non-essential criteria for placental specimen referral. This audit is designed to evaluate the adherence to RCPATH 2022 guidelines in routine referrals of placentas for PH at a tertiary care centre.

**Methodology:** The request forms of placentas received within a year, starting from January 2024, were assessed for compliance with the RCPATH 2022 referral criteria, including mandatory data and provision of additional clinical details. Data collected using a proforma was analysed using descriptive statistics.

**Results:** A total of 24 placentas were received. The indications for the referral were documented in 96% of cases (compliance > 90%). Only 75% were referred due to essential criteria, while the indications were non-essential in 25% (limit > 10%). Among the mandatory data, only the mother's name was fully compliant (100%). Patient age (91%), gestational age (70%) and obstetric history (25%) fell below standards. Key details such as the delivery date, birth weight, centile, and baby's sex were not stated in any of the cases (0%). Additional information, such as mode of delivery (79%), patient contact information (54%), and physician's contact information (62%), was reported variably.

**Discussion:** While most referrals included an indication, 25% of these were non-essential, overburdening the pathology services. Lack of clinical information in the majority makes meaningful assessment of PH difficult.

**Conclusion:** Poor adherence to essential referral criteria and limited clinical information in the request forms highlight the need for creating intradepartmental awareness on the referral criteria and the design of a standardised request form. A re-audit will be carried out after implementing the new request form, which is essential to ensure appropriate use of pathology services and to improve the quality of PH assessment.

**Keywords:** placental histopathology, referral, compliance, RCPATH 2022 guidelines

**Audit of colorectal biopsy reporting for inflammatory bowel disease in a specialised gastroenterology centre**

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**Introduction and objectives:** The reporting of colonic biopsies for the diagnosis of inflammatory bowel disease (IBD) was audited based on the audit standards and assessment criteria established by the Royal College of Pathologists (RCPath).

**Methodology:** Twenty-five consecutive cases of IBD reported in the Department of Pathology, Faculty of Medicine, Kelaniya, from January to November 2024 were retrieved. The information in these reports was audited against 24 criteria, under the categories of clinical details and processing (7), macroscopic (2), and microscopic descriptions (8), and the summary/conclusion (7).

**Results:** The reporting of the ten criteria concerning macroscopic and microscopic description showed full compliance. The main area of non-compliance was in the clinical details and processing category, where only the criteria on the site of origin reached the standard (100% compliance). 4/7 criteria in the summary/conclusion category were compliant. The non-compliant criteria in summary/conclusion included, summary of microscopic changes (64%), degree/grade of activity (84%) and turnaround time (TAT) of 18 days (IQR-10-25). Out of all 24 criteria, 15 reached 100% compliance (62.5%). This audit highlighted four good practices.

**Discussion and conclusion:** The audit identified two main weaknesses: the lack of clinical and endoscopic details, and delays in TAT. The possible reasons encountered for the latter were inadequate clinical details, delays in peer review at the departmental level and unexpected trade union action by non-academic staff during the audit period.

It is envisaged that an urgent discussion with the clinical teams and the addition of these details to the web-based reporting system will address this issue to a large extent. A re-audit will be mandatory.

**Keywords:** inflammatory bowel disease reporting, RCPath audit standards

**Histopathological evaluation of regressive features of liver fibrosis**

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**Introduction and objectives:** Liver fibrosis is recognised as a potentially reversible condition. Histopathological evaluation of regression may aid in evaluating therapeutic outcomes. This study aimed to descriptively assess the regressive features of liver fibrosis in liver specimens received at the Department of Histopathology, Faculty of Medicine, Kelaniya.

**Methodology:** A retrospective descriptive cross-sectional study was carried out on liver specimens, which included liver biopsies, resections, and explants received at the centre over a period of five years. The specimens reported to have any degree of fibrosis were selected. Transplant biopsies and poor-quality slides/blocks were excluded. A total of 110 cases were examined by two pathologists. The eight components of the hepatic repair complex (HRC) were assessed using haematoxylin and eosin and Masson's trichrome stains.

**Results:** The male: female ratio was 40:70; median age was 51 years; 104 were biopsies, and six were liver resections. All eight components of the HRC were identified. The three most frequently observed regressive features were perforated delicate septa (90/110; 82%), hepatocytes within portal tracts/split septa (62/110; 56%), and minute regenerative nodules (60/110; 55%). Delicate periportal fibrous spikes were observed in 27/110 (34%) of cases. The other HRC components identified included: isolated thick collagen fibres (2/110; 2%), aberrant parenchymal veins (4/110; 4%), portal tract remnants (2/110; 2%), and hepatic vein remnants (1/110; 1%).

**Discussion and conclusion:** The frequent observation of perforated delicate septa and hepatocytes within portal tracts/split septa in this study aligned with results reported in the literature. However, minute regenerative nodules, rarely noted in previous studies, emerged as one of the three most common HRC features in our study. Isolated portal tracts were identified in only 2%, despite this being a more frequent feature in other studies.

**Keywords:** hepatic repair complex, liver fibrosis, haematoxylin and eosin, Masson's trichrome stain

## RP 30

**Evaluation of an innovative method for teaching drawing of histopathology diagrams to second year MBBS students**

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**Introduction and objectives:** Drawing of factually accurate histopathology diagrams is a challenging task. Apart from being a requirement of the competency-based medical education curriculum, it helps in development of the psychomotor domain of learning. An innovative method to teach drawing of histopathology diagrams to second year MBBS students was introduced and evaluated, and the students' perception of this method was assessed.

**Methodology:** In this interventional study, students were provided with a validated hand-drawn pencil sketch of a histopathology diagram. They traced the outlines on the sketch, coloured it with haematoxylin and eosin pencils, then drew the same diagram independently (method C). Three diagrams were selected, and students drew all three diagrams once, each by a different method. The scores were compared with conventional methods, copying from standard histopathology atlas (method A) and from a hand-drawn colour chart (method B). Inter-group and pair-wise comparisons were done using Kruskal-Wallis test and Mann-Whitney U test respectively, followed by intra-class correlation. Student feedback was obtained using an online pre-validated questionnaire based on a Likert scale.

**Results:** 188 students completed the entire process. The mean score for method C (4.88 [0.16]) was higher than those for method A (3.63 [0.91]) and method B (4.76 [0.30]). There were statistically significant differences between method C and methods A and B ( $p < 0.01$ ). The innovative practice was well-received and contributed to better retention of the topics.

**Discussion and conclusion:** The process of drawing and colouring engages multiple sensory modalities. Creating accurate histopathological diagrams, while also offering a calming and engaging learning experience, aids in the development of spatial awareness. The innovative method resulted in improved diagram quality and greater ease of drawing compared to conventional techniques, highlighting its potential as a more effective educational tool.

**Keywords:** alternative teaching, innovative practice, medical education

## RP 31

**A comparative study of bronchoscopy guided cytology specimens with bronchial biopsies in diagnosing lung malignancies**

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**Introduction and objectives:** Bronchoscopy provides minimally invasive access to respiratory tract lesions, enabling the collection of cytological samples through bronchial wash and brush. This study evaluates the diagnostic efficacy of bronchial wash cytology (BWC), and bronchial brush cytology (BBC) compared to bronchial biopsy, which is considered the gold standard for diagnostic purposes.

**Methodology:** An observational, cross-sectional analytical study was conducted at the National Hospital of Respiratory Diseases, Welisara, from January 2020 to December 2024. A total of 237 consecutive patients with clinical, radiological, or bronchoscopic suspicion of lung cancer were enrolled based on predefined inclusion and exclusion criteria. BW and BB results were compared against biopsy findings, evaluating sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV), and overall diagnostic accuracy (ODA).

**Results:** BWC identified five true positive cases out of 115 biopsy-confirmed malignancies, resulting in a sensitivity of 4.35%. The specificity was 98.36%, with 120 true negatives and only two false positives. PPV was 71.43%, NPV 52.17%, and ODA 52.74%. In contrast, BBC showed a significantly improved diagnostic performance correctly identifying 60 true positives and 103 true negatives, yielding a sensitivity of 52.17% and specificity of 84.43%. The PPV and NPV were 75.95% and 65.19%, respectively, with an ODA of 68.35%.

**Discussion and conclusion:** In resource-limited settings, selecting the most effective technique is crucial, thereby saving time, effort, and cost while ensuring reliable diagnosis and optimal use of available medical resources. BBC demonstrated superior diagnostic sensitivity and accuracy compared to BWC in detecting lung malignancies. These findings support the use of bronchial brushing rather than bronchial washings as a diagnostically more effective cytological tool during bronchoscopy.

**Keywords:** bronchial wash cytology, bronchial brush cytology, sensitivity, specificity, overall diagnostic accuracy

**Evaluation of histopathology reporting practices in hepatoblastoma: a retrospective audit at Lady Ridgeway Hospital, Sri Lanka**S. Nadarajah<sup>1</sup>, S. A. Gunaratne<sup>2</sup><sup>1</sup>National Hospital of Sri Lanka, Sri Lanka, <sup>2</sup>Department of Histopathology, Lady Ridgeway Hospital for Children, Sri Lanka  
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**Introduction and objectives:** Hepatoblastoma is the most common primary malignant liver tumour in children. Accurate histopathological diagnosis of hepatoblastoma is essential for effective management. This audit evaluated the completeness and timeliness of histopathology reports of hepatoblastoma against the College of American Pathologists (CAP) guidelines.

**Methodology:** A retrospective review of 23 histopathology reports (12 excision and 11 core biopsies) of hepatoblastoma issued from January 2021 to December 2024 at Lady Ridgeway Hospital for Children, Colombo, was conducted. Reports were assessed for compliance with CAP standards, and turnaround times.

**Results:** In excision biopsy specimens, procedure, tumour site, and resection margins were documented in 100% of reports. Over 80% of reports included details on tumour size, histologic type, lymphovascular invasion and lymph node status. Details on the macroscopic extent of the tumour at operation, histologic grade, distant metastasis, and staging were absent in all reports. In core biopsies, the procedure type was the only parameter reported in all reports. Tumour site and other pathological findings appeared in over 80%, tumour focality and serum alpha-fetoprotein levels were mentioned in 41.6%, and ancillary studies in 8.3% of reports. The mean turnaround time was three days for core-cut biopsies and 10 days for excision biopsies, with only 63% of excision biopsies reported within seven days.

**Conclusion:** The audit revealed underreporting of essential oncologic parameters, particularly in excision specimens. Delayed reporting may adversely affect multidisciplinary treatment planning. Standardized reporting templates will be implemented to enhance the completeness and efficiency of reporting, and a re-audit will be carried out in one year.

**Keywords:** hepatoblastoma, audit

**Validation of a novel artificial intelligence-based tool for Ki-67 quantification in breast cancer: enhanced accuracy, reproducibility and efficiency in resource limited setting**A.P. Nelliela<sup>1</sup>, R.M.N.D. Rathnayake<sup>2</sup>, N.J. Asanthi<sup>3</sup>, V.C. Bandaranayake<sup>1</sup>, A. Ramanan<sup>2</sup>, K. Thanikasalam<sup>2</sup>, M. Senarathna<sup>4</sup>, M.P.G.N.S. Jayawardhana<sup>3</sup><sup>1</sup>Department of Surgical Oncology, <sup>3</sup>Department of Histopathology, Teaching Hospital Anuradhapura, Sri Lanka<sup>2</sup>University of Jaffna, Department of Computer Science, Jaffna, Sri Lanka<sup>4</sup>University of Peradeniya, Postgraduate Institute of Science, Kandy, Sri Lanka[javanjana\\_asanthi@yahoo.com](mailto:javanjana_asanthi@yahoo.com)

**Introduction and objectives:** Ki-67 proliferation index is important in guiding breast cancer treatment. The International Ki-67 Working Group (IKWG) recommends hot-spot (HS), and the global scoring (GS) methods to quantify Ki-67, which is categorized as low (<5%), intermediate (6–29%), and high (>30%). The manual methods are time-consuming, prone to inter-observer variability and potential sampling bias based on selected microscopic fields. This study aimed to validate a novel artificial intelligence (AI)-based tool and evaluate its accuracy and efficiency compared to manual scoring.

**Methodology:** An AI model was developed using EfficientNetV2 architecture, incorporating distance transformation and watershed algorithms for precise cell segmentation. The AI tool captures high-power digital images of the entire Ki-67 immunohistochemically stained slide in real time as it is moved on the stage of the microscope and automatically computes the Ki-67 proliferation index. The model was trained on 350 digital images annotated by pathologists and validated with an additional 350 images. AI-derived Ki-67 indices of 20 cases were compared with blinded manual scores by two pathologists using HS and GS methods. Agreement was analysed using intraclass correlation coefficient (ICC) and Bland-Altman plots. Assessment efficiency was compared by measuring evaluation time.

**Results:** The AI model showed 94.3% accuracy in cell-to-cell identification against pathologist annotations. ICC analysis indicated excellent reproducibility between AI and manual methods for HS (ICC=0.946, 95% CI:0.672–0.984) and GS method (ICC=0.963, 95% CI:0.879–0.987). Bland-Altman analysis confirmed strong agreement without significant systematic bias. The AI method significantly reduced evaluation time compared to manual scoring by pathologists (HSt:AI mean=25.5s, pathologist mean=152.2s,  $p<0.01$ ,  $t=-7.38$ ; GS:AI mean=250.8s, pathologist mean=455.1s,  $p<0.01$ ,  $t=-6.96$ ).

**Conclusion:** The AI-based tool offers accurate, reproducible, and significantly more efficient Ki-67 quantification, representing a reliable, standardized alternative to manual methods. It eases workload and reduces diagnostic turnaround times in resource-limited settings. Limitations include dependence on digital microscopy and high-quality slide preparation.

**Keywords:** Ki 67 index, AI tool, breast cancer

**Correlation in benign uterine conditions: a retrospective study from a tertiary care centre in Sri Lanka**

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**Introduction and objectives:** Benign uterine conditions (BUCs) are common causes of morbidity and infertility among women. Regular clinicopathological correlation provides valuable insights into diagnostic challenges, improving diagnostic accuracy and management. This study aimed to assess the concordance between clinical and histopathological diagnoses of BUCs and to evaluate symptom patterns in patients without a definitive clinical diagnosis.

**Methodology:** A retrospective, descriptive cross-sectional study was conducted from November 2023 to November 2024 at a tertiary care centre. Histologically confirmed BUCs were analysed using histopathology reports, requisition forms and bed head tickets. For cases with definitive clinical diagnoses, concordance, sensitivity, specificity, positive and negative predictive value were calculated. In cases without a clinical diagnosis, symptom patterns were cross tabulated with the final histopathological findings.

**Results:** A total of 366 patients were studied: 76.2% (n=279) had a definitive clinical diagnosis, while 23.8% (n=87) did not have a clinical diagnosis. Most patients were perimenopausal (54.09%; n=198). The overall clinicopathological concordance was 84.3%. Uterine fibroids were the most frequently diagnosed condition both clinically and histopathologically (concordance 77.7%, sensitivity 77.1%). Endometrial hyperplasia had the highest concordance (96.4%), while adenomyosis showed the lowest (68.4%). Heavy menstrual bleeding (36.7%; n=32) was the most common symptom among patients without a specific clinical diagnosis. Overlapping symptoms among fibroids, adenomyosis and polyps contributed to the clinical diagnostic uncertainty.

**Discussion and conclusion:** The findings underscore the limitations of symptom-based clinical diagnosis in BUCs. Conditions such as adenomyosis and polyps are often underdiagnosed due to overlapping presentations, highlighting the need for histopathological confirmation. Routine clinicopathological correlation is essential for enhancing diagnostic precision and ensuring optimal management of BUCs, particularly in cases with overlapping clinical symptoms.

**Keywords:** benign uterine conditions, clinical diagnosis, histopathological correlation

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**RP 36****PD-L1 immunohistochemistry in gastric and gastro-oesophageal junction adenocarcinoma: comparison of combined positive score across 22C3 and SP263 assays**

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**Introduction and objectives:** Programmed death-ligand-1 (PD-L1) is a potential target for immune checkpoint inhibitors in various cancers. The current study aimed to evaluate the concordance of combined positive score (CPS) across 22C3, and SP263 assays when interpreting PD-L1 immunohistochemistry on oesophageal and gastro-oesophageal junction (GOJ) adenocarcinoma.

**Methodology:** Twenty-two biopsies and eight resection specimens of oesophageal and GOJ adenocarcinoma were evaluated for PD-L1 SP263 expression at the Department of Pathology, Royal Surrey Hospital, over a period of four years (January 2021 to December 2024). These specimens were re-evaluated for PD-L1 22C3 assay at Poundbury Cancer Institute by an independent pathologist blindly to the PD-L1 SP263 assay results. The two results were compared for concordance.

**Results:** 93% (28/30) cases showed a significant concordance between the results of PD-L1 SP263 and 22C3 assay analysis. Two cases showed significant discordance. One case showed a high staining with SP263 compared to the 22C3 assay giving a high PD-L1 count for SP263. The other case showed depleted tumour tissue in the section that was recut for the 22C3 assay giving a low value.

**Discussion and conclusion:** There are three major commercially available immunohistochemistry assays to quantify PD-L1 expression in cancer cells; SP263, 22C3 and 28-8. A CPS  $\geq 1$  is currently used to classify a tumour as PD-L1 positive. According to NICE guidelines, oesophageal or GOJ adenocarcinomas with a PD-L1 CPS  $\geq 5$  is eligible for treatment with nivolumab, while a CPS  $\geq 10$  qualifies for pembrolizumab therapy. This study demonstrated analytical concordance between the SP263 and 22C3 assays when CPS scoring was applied, consistent with previously published data.

**Keywords:** PD-L1 immunohistochemistry, gastric carcinoma, 22C3, SP263

**Morphological predictors of microsatellite instability in Gleason grade 4 and 5 prostate cancers**

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**Introduction and objectives:** Prostate carcinoma (PCa) is the second commonest cancer in men globally and accounts for 6.3% of malignancies in men in Sri Lanka. Microsatellite instability (MSI) is an emerging prognostic and predictive factor in PCa. This study aimed to determine the prevalence of MSI in Gleason grade (GG) 4 and 5 PCa and describe its association with clinical and pathological features in cohort of Sri Lankan men with PCa.

**Methodology:** Fifty-six cases of high-grade (GG 4 and 5) PCa diagnosed at the Department of Pathology, Faculty of Medicine, Colombo were retrieved retrospectively from 30th March 2023. Age and serum PSA levels were obtained from request forms. Haematoxylin and eosin-stained slides were reviewed for GG, tumour morphology (e.g. tumour type, cribriform/fused/ill-formed glands, glomeruloid structures, sheets, singly infiltrating cells, cords), perineural invasion, and tumour burden. Immunohistochemistry for mismatch repair proteins (MMR) (MSH2, MSH6, MLH1, PMS2) was performed on selected blocks. Associations between MMR loss and clinicopathological features were assessed with chi-square test.

**Results:** MMR loss (MSH2 and MSH6) was observed in 5.4% (3/56), all of which were GG 5+5. There was no loss of MLH1 or PMS2. A significant association was found between MMR loss and GG ( $p=0.005$ ). There was no association with other clinicopathological features.

**Discussion and conclusion:** MMR loss was found in 5.4% of high-grade PCa. A significant association with GG 5+5 tumours, compared to 4+4, 4+5 and 5+4 tumours was identified. Currently there are trials to determine efficacy of immunotherapy in high grade carcinomas. Therefore, testing MSI may have therapeutic impact in the future. Low prevalence of MMR loss, loss of MSH2 and MSH6 with preserved MLH1 and PMS2 and association of MMR loss with higher GG are similar to findings in studies done worldwide.

**Key words:** prostate cancer, Gleason grade, microsatellite instability

**Acknowledgement:** This study was funded by National Research Council grant SP 21-01 and the University of Colombo.

**A single centre experience on the utility of fine needle aspiration cytology and the Bethesda system in assessing thyroid nodules**

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**Introduction:** Thyroid nodules are common in clinical practice. Fine Needle Aspiration Cytology (FNAC), guided by the Bethesda System for Reporting Thyroid Cytopathology (TBSRTC), is a standard approach to risk stratification. This study assesses the utility of FNAC and TBSRTC in assessing thyroid nodules in a single centre.

**Methods:** This retrospective study included 250 patients who underwent FNAC followed by histopathological assessment over two years. FNAC results were categorized (I–VI) per TBSRTC. Sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV), diagnostic accuracy, and risk of malignancy (ROM) were calculated. Histopathology was the gold standard; for Category III, ROM was reported due to its equivocal nature.

**Results:** Among 250 cases, Category I (4%) had 70% nondiagnostic histology. In Category II (51.8%), 96.1% were benign; ROM 3.8%. Category III (3%) showed ROM of 53.3%. In Category IV (8.5%), including both follicular adenomas and carcinomas, sensitivity and specificity were 42.9% and 57.1%, with ROM 38%. Category V (12.8%) showed sensitivity 84.4%, corrected specificity 72.2%, ROM 80.6%. Category VI (20%) showed sensitivity 94% and corrected specificity 82.6%, ROM 95%. Overall sensitivity, specificity, and diagnostic accuracy were 92.2%, 72.5%, and 83.5% respectively.

**Conclusion:** FNAC interpreted via TBSRTC offers high sensitivity and acceptable accuracy. Categories III–V remain diagnostic grey zones requiring cautious interpretation. Including ROM improves clinical risk assessment. We can conclude that FNAC continues to be vital in thyroid nodule management.

**Keywords:** thyroid cytology, Bethesda

## RP 40

**Comparison of non-diagnostic rates (Bethesda category I) in thyroid fine needle aspiration cytology between ultrasound-guided and direct techniques: an audit from a tertiary care centre**

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**Introduction and objective:** As defined by Bethesda 2023, sample adequacy of thyroid cytology is determined by evaluating cellular quality, cellularity, and colloid content. Adequate samples must contain at least six clusters of ten well-preserved thyroid follicular epithelial cells, without significant obscuring by blood or air-drying artifacts. Samples that do not meet these standards are classified as non-diagnostic. This audit aims to compare the rate of non-diagnostic smears obtained via ultrasound (US)-guided aspiration versus those collected through direct fine needle aspiration cytology (FNAC).

**Methodology:** A retrospective cohort including all US guided FNAC and direct FNAC cases performed from March 2024 to March 2025 at National Hospital Kandy were analysed and the proportion of non-diagnostic samples was calculated.

**Results:** A total of 527 US-guided thyroid FNACs were performed, of which 134 (25.4%) were reported as non-diagnostic (Bethesda Category I). In comparison, 283 direct (non-ultrasound-guided) FNACs were conducted, with 75 (26.5%) yielding non-diagnostic results.

**Discussion and conclusion:** Both techniques resulted in a high proportion of non-diagnostic smears with ultrasound-guided FNAC demonstrating a slightly lower rate of non-diagnostic results compared to direct FNAC. Factors contributing to the high non-diagnostic rates in both methods may include operator experience, nodule characteristics such as size, depth, and cystic nature, as well as slide preparation techniques. The following recommendations are proposed to address these issues: training programs focused on The Bethesda System for Reporting Thyroid Cytopathology criteria, improving FNAC techniques through structured skill development, establishing standardized protocols for both ultrasound-guided and direct FNAC procedures, incorporating rapid on-site evaluation (ROSE) to assess sample adequacy during the procedure and conducting thorough pre-procedural assessment of nodule characteristics. A follow-up audit is recommended four to six months after implementing these measures to evaluate their effectiveness.

**Keywords:** non-diagnostic percentage, TBSRTC criteria, ultrasound guided FNAC, direct FNAC

## RP 41

**Nottingham grade distribution for breast carcinoma in National Hospital Kandy**

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**Introduction and objectives:** Breast carcinoma (NST) is a common malignancy, and its prognosis is largely determined by tumour grade. The Nottingham grading system is widely used, and its distribution is known to follow an accepted ratio of 2:3:5 for Nottingham Grade 1, Grade 2, and Grade 3, respectively. This audit aims to determine the ratio of Nottingham grades given for the breast carcinoma cases reported in National Hospital Kandy and compare it with the accepted distribution of 2:3:5.

**Methodology:** We analysed the Nottingham grades given for all cases of breast carcinoma (NST) diagnosed on core biopsy (140) in 2025 at the National Hospital Kandy.

**Results:** 24 cases were reported as grade 1, 104 cases were reported as grades 2 and 12 were reported as Nottingham grade 3. The observed ratio for Nottingham grade 1, 2, 3 was 2:9:1. The mean absolute deviation was 0.3 which was significant. According to the chi-square formula there was a statistically significant deviation between the Nottingham ratio and the standard ratio at the 5% significance level.

**Discussion and conclusion:** There was a significant deviation of Nottingham grade ratio from the standard which could be due to subjective intra observer variability, fixation and processing artifacts or real biological or demographic variation. Regular training workshops, use of reference slides, peer review, ensuring strict adherence to protocols and improving tissue processing quality are suggested. The audit reveals the significant deviation from the standard ratio of Nottingham grading in the cases reported in National Hospital Kandy. The possible causes will be analysed and corrected. Reaudit will be done on core biopsies in three months.

**Keywords:** Nottingham grading system, tumour grade, breast carcinoma

## Fallopian tube precursor lesions in high-grade serous carcinoma : insights from a study in a tertiary care centre in Sri Lanka

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**Introduction and objectives:** High-grade serous carcinoma (HGSC) is the most common and lethal form of ovarian cancer. The p53 signature and serous tubal intraepithelial carcinoma (STIC) in the fallopian tube are identified as its precursor lesions. However, data from Sri Lanka on these precursor lesions are limited. This study assessed the prevalence of p53 signature and STIC in women with HGSC, and in those undergoing salpingectomy for benign indications, within a Sri Lankan cohort.

**Methodology:** This retrospective cross-sectional study analysed the fimbriae of fallopian tubes from three groups: Group 1; patients diagnosed with HGSC (n=48) and low-grade serous carcinoma (LGSC) (n = 2), Group 2; women under 55 years undergoing salpingectomy with or without hysterectomy for benign conditions (n = 180) and Group 3; women over 55 years undergoing similar procedures (n = 180). All specimens were evaluated histologically and with p53 immunohistochemistry.

**Results:** Among HGSC cases, 2.08% (n=1) showed p53 signature and 4.1% (n=2) showed STIC. None of the LGSC cases demonstrated either lesion. In Group 2, neither p53 signature nor STIC was detected. In Group 3, 1.1% (n=2) showed p53 signature, while no STIC lesions were observed. The differences in the prevalence of these lesions among HGSC, LGSC and the benign groups were not statistically significant (p > 0.05).

**Discussion and conclusion:** The prevalence of p53 signature and STIC in this study was markedly lower than internationally reported rates. These findings suggest the possibility of population-specific factors influencing HGSC carcinogenesis, warranting further large-scale studies incorporating molecular analysis. Nevertheless, our findings contribute to the ongoing discussion on the potential value of routine opportunistic salpingectomy in Sri Lanka as a preventive strategy.

**Key words:** serous carcinoma, serous tubal intraepithelial carcinoma, p53 signature

**Acknowledgement:** This study was funded by University Research Grant (URG/2022/47/M), University of Peradeniya.

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RP 45

## Expression of vitamin D metabolism and signalling markers in malignant thyroid tumours and benign thyroid lesions

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**Introduction and objective:** Vitamin D exists in several forms, with 1,25-dihydroxyvitamin D<sub>3</sub> [1,25(OH)<sub>2</sub>D<sub>3</sub>] being its biologically active form which exhibits antiproliferative and re-differentiating effects in various cancers, including thyroid cancer. Our objective was to determine the expression of Vitamin D receptor (VDR), CYP24A1, and Ki-67 in malignant and benign thyroid tumours and correlate these findings with histopathological parameters.

**Methodology:** Eighty-eight thyroidectomy specimens (46 benign, 42 malignant) were studied prospectively. Immunohistochemistry staining for VDR, CYP24A1, CYP27B1 was scored from 0-9 based on intensity and percentage of positive cells (score ≥4 - positive). The proportion of Ki67 positive cells was assessed. Associations between marker expression and tumour type were analysed using ANOVA and Pearson's correlation.

**Results:** Among the 88 cases, 32 were papillary thyroid carcinoma of which 81.25% showed high VDR expression (score ≥4), 65.65% showed low CYP24A1 expression (score 2) and 87.5% showed no CYP27B expression (score 0). Among 33 cases diagnosed as multinodular goitre/hyperplastic nodules, 54% exhibited low VDR expression (scores 0–1), 88% showed positive CYP24A1 expression, and 79% had low CYP27B1 expression (score 2). Ki-67 was elevated (30% or higher) in malignant thyroid tumours compared to benign lesions. VDR expression showed a moderate correlation with malignancy (r=0.62) but did not reach statistical significance.

**Conclusion:** The altered expression patterns of VDR, CYP24A1, and Ki-67 in malignant thyroid tumours suggest a possible involvement of vitamin D signalling in thyroid tumorigenesis. Despite lacking statistical significance, the trends indicate a potential role for vitamin D in modulating tumour behaviour, possibly through pathways related to immune regulation and cellular differentiation and warrants further investigation in larger patient cohorts.

**Keywords:** vitamin D receptor, thyroid malignancy

**Acknowledgment:** SDUAHER for funding

## Correlation between radiological and histological diagnosis of breast core needle biopsies in a tertiary care unit in Sri Lanka

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**Introduction and objectives:** Core needle biopsy (CNB) is critical in breast cancer diagnosis. This study evaluates the adequacy of CNB and its diagnostic concordance with the Breast Imaging Reporting and Data System (BIRADS) and the histological biopsy category (B category). In malignant cases, the Nottingham grade (NG) was also reviewed to explore tumour differentiation patterns.

**Methodology:** Data of all breast CNBs received from 01.01.2024 to 31.12.2024 were retrieved. The key variables extracted included the BIRADS category, histological (B) category, and the NG in the malignant biopsies.

**Results:** Of the 94 CNB included in this study, B1, B2, B3, B4 and B5 lesions were 17(18.09%), 24(25.53%), 0(0%), 3(3.14%) and 50 (53.19%), respectively. BIRADS 5 lesions (24/94) showed a strong correlation with B5 lesions, reflecting the effective radiological targeting of malignant lesions (83.3%; 20/24). Of the BIRADS 4 lesions (40/94), 45% (18/40) were B5, 5% (2/40) were B4 and 50% (20/40) were B1 and B2. 25 % of BIRADS 2 lesions (1/4) and 11% of BIRADS 3 lesions (1/9) were B5 lesions. NG in invasive malignancies (Category B5b) was 25.58%, 55.81%, and 18.60% for NG1, NG2 and NG3, respectively. A grading was not assigned in 8.51% (4/47) of B5b cases due to inadequate tumour tissue.

**Discussion:** This study shows a strong correlation between image-guided biopsies and histological diagnoses. Most radiologically suspicious/malignant lesions (BIRADS 4 and 5) were accurately targeted. This supports the effectiveness of imaging-based triage. In our study, NG2 was the most common histological grade. However, NG3 has been reported as the predominant grade in similar studies.

**Conclusions:** This study highlights the strengths of the diagnostic workflow of breast CNBs. However, areas requiring attention include improvement in specimen adequacy, provision of the BIRADS grade in all CNBs and review of the grading protocol.

**Keywords:** core needle biopsy, breast cancer, BIRADS, histological category (B category), Nottingham grade.

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## RP 47

## An audit of fine needle aspiration cytology in a tertiary care centre in Sri Lanka

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**Introduction and objectives:** Fine needle aspiration cytology (FNAC) is a rapid, minimally invasive diagnostic technique used in detection of tumours. This audit aims to evaluate the distribution, diagnostic categories, and adequacy of FNAC at a single tertiary care unit in Sri Lanka.

**Methodology:** The audit included 127 FNAC samples received from 1.1.2024 to 31.12.2024 and reported using standard classification systems: Bethesda (thyroid), C-coding (breast), and Milan (salivary gland (SG)). Lymph nodes (LN) were categorized as non-diagnostic, benign, atypical and malignant. 76.4% (97/127) were ultrasound-guided (USG). 23.6% (30/127) were palpation-guided (PG).

**Results:** Anatomical distribution comprised thyroid 52.8% (67); LN 18.9% (24); breast 18.1% (23); and SG 7.9% (10). Diagnostic categories were Thyroid: non-diagnostic / Bethesda category (BC) I 32.8% (22), benign / BC II 58.2% (39), atypia of undetermined significance / BC III 7.5% (5), follicular neoplasms / BC IV 1.5% (1). LN: non-diagnostic 33.33% (8); benign 37.5% (9), malignant 29.2% (7). Breast: Non-diagnostic/C1 69.6% (16), C2 13.0% (3), C3 13.04% (3), C4 4.3% (1). SG: non-diagnostic/MC I 50% (5), benign neoplasms/MC IVA 30% (3), SG neoplasm of uncertain malignant potential/MC IV B 20% (2). Other sites included chest wall, scalp, and neck abscesses. Non-diagnostic category for USG FNAC was 48.45% (47/97); breast 34.04 % (16/47), thyroid 36.17% (17/47), LN 14.89% (7/47), SG 10.63% (5/47), chest wall 2.12% (1/47) and neck abscess 2.12% (1/47). Non-diagnostic category for PG was 20% (6/30); breast 0%, thyroid 83.33% (5/6), LN 16.66% (1/6) and SG 0%.

**Discussion and conclusion:** The thyroid was the most commonly sampled site, with a majority of benign diagnoses. A significant proportion of non-diagnostic smears, particularly from thyroid and breast, highlight the need for improved sampling techniques. LN FNACs showed a balanced distribution of benign, malignant, and non-diagnostic results. SG aspirates also had a high non-diagnostic rate, indicating sampling challenges. No C5 breast lesions were seen, as BIRADS 4/5 cases were typically referred for core needle biopsies. No Bethesda V or VI thyroid lesions were identified. These findings were reviewed and may be due to inadequate sampling of high-risk nodules, differences in clinicians' FNAC thresholds or selection bias (with suspicious cases referred elsewhere). USG FNAC showed a higher non-diagnostic rate than PG FNAC, especially in breast and thyroid lesions. These findings collectively emphasize the importance of technique refinement, adequate training, and site-specific considerations to enhance diagnostic yield and reduce non-diagnostic rates in FNAC practice.

**Keywords:** fine needle aspiration cytology, tertiary care unit

**Histo-morphological correlation of fine needle cytology diagnosis of thyroiditis in a cohort of patients from Sri Lanka**

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**Introduction and objective:** In the Bethesda system for reporting thyroid cytopathology, thyroiditis falls under the TBSRTC II category and is a common diagnosis. Only a few Sri Lankan studies have explored the correlation between fine needle aspiration cytology (FNAC) and histological findings in thyroiditis. Our study aims to address that gap and enhance the diagnostic accuracy of thyroiditis in cytology.

**Methodology:** Descriptive cross-sectional study of samples received at the Department of Pathology, Faculty of Medicine, Peradeniya in 2018 and 2019. Thirty-eight patients with FNAC-diagnosed thyroiditis who later underwent surgery were analysed, with thirty-eight patients diagnosed with colloid nodules as a control group.

**Results:** Among cases diagnosed by FNAC exclusively as thyroiditis, 19 (50%) were confirmed histologically, while 16 (42.1%) had colloid nodules and three (7.9%) had incidental malignancies. In the control group, 32 (84.2%) had colloid nodules, nine (24%) showed evidence of thyroiditis, and two (5.26%) had exclusive thyroiditis. The sensitivity, specificity, positive predictive value, negative predictive value, and overall accuracy of FNAC for diagnosing thyroiditis were 67.9%, 60.4%, 50%, 76.3%, and 63.1%, respectively.

**Discussion and conclusion:** While the sensitivity observed aligns with international findings (65–98%), specificity was comparatively lower (72–100%). Over diagnoses may stem from inadequate clinical and imaging correlation, poor technique during FNA, and interpretative variability. Improving diagnostic accuracy requires a multidisciplinary approach incorporating clinical, radiological, and laboratory data. Techniques like radiology-guided aspiration, supervised FNAC, adherence to guidelines, regular internal audits, and ongoing professional training are recommended to enhance outcomes.

**Keywords:** fine needle aspiration cytology, thyroiditis