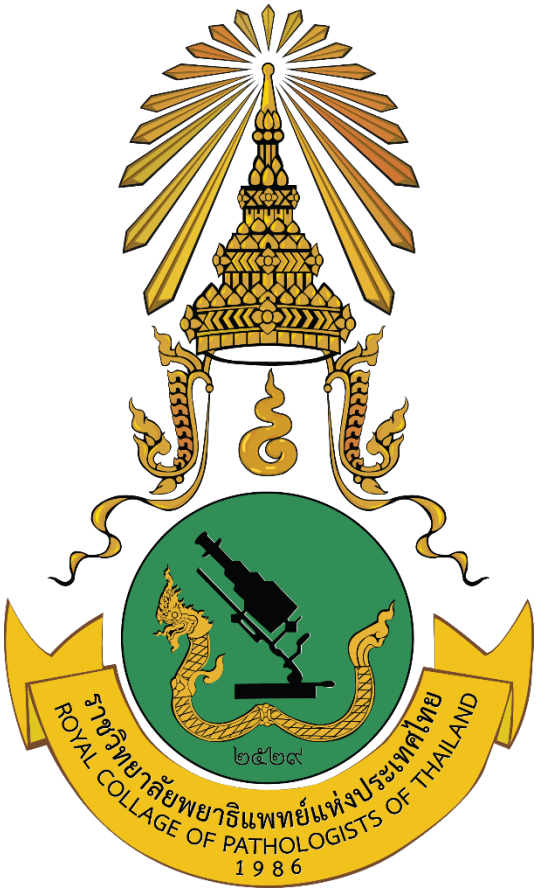
ASIAN ARCHIVES OF PATHOLOGY

THE OFFICIAL JOURNAL OF THE ROYAL COLLEGE OF PATHOLOGISTS OF THAILAND



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ABOUT THE JOURNAL

Aims and Scope

Asian Archives of Pathology (AAP) is an open access, peer-reviewed journal. The journal was first published in 2002 under the Thai name "วารสารราชวิทยาลัยพยาธิแพทย์แห่งประเทศไทย" and English name "Journal of the Royal College of Pathologists of Thailand". The journal is a publication for workers in all disciplines of pathology and forensic medicine. In the first 3 years (volumes), the journal was published every 4 months. Until 2005, the journal has changed its name to be "Asian Archives of Pathology: The Official Journal of the Royal College of Pathologists of Thailand", published quarterly to expand the collaboration among people in the fields of pathology and forensic medicine in the Asia-Pacific regions and the Western countries.

The full articles of the journal are appeared in either Thai or English. However, the abstracts of all Thai articles are published in both Thai and English languages. The journal features letters to the editor, original articles, review articles, case reports, case illustrations, and technical notes. Diagnostic and research areas covered consist of (1) **Anatomical Pathology** (including cellular pathology, cytopathology, haematopathology, histopathology, immunopathology, and surgical pathology); (2) **Clinical Pathology (Laboratory Medicine)** [including blood banking and transfusion medicine, clinical chemistry (chemical pathology or clinical biochemistry), clinical immunology, clinical microbiology, clinical toxicology, cytogenetics, parasitology, and point-of-care testing]; (3) **Forensic Medicine (Legal Medicine or Medical Jurisprudence)** (including forensic science and forensic pathology); (4) **Molecular Medicine** (including molecular genetics, molecular oncology, and molecular pathology); (5) **Pathobiology**; and (6) **Pathophysiology**.

All issues of our journal have been printed in hard copy since the beginning. Around the late 2014, we developed our website (www.asianarchpath.com) in order to increase our visibility. We would like to acknowledge that our journal has been sponsored by the Royal College of Pathologists of Thailand. We have the policy to disseminate the verified scientific knowledge to the public on a non-profit basis. Hence, we have not charged the authors whose manuscripts have been submitted or accepted for publication in our journal.

On the other hand, if any authors request a printed copy of the journal issue containing the articles, each of the copied journals costs 450 bahts for Thai authors and 30 United States dollars (USD) for international authors.

Publication Frequency

Four issues per year

Disclaimer

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ABSTRACTS

[IAP-01] Atrophic kidney like lesion with osseous metaplasia and calcifications- a provisional and rare entity

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Introduction

Atrophic kidney like lesion (AKLL) is a recently introduced provisional entity in the classification of renal neoplasms by the World Health Organization (WHO) in 2016. The classification of renal neoplasms is rapidly evolving with emergence of many new entities. Renal neoplasms with atrophic tubule like features were previously classified under 'Thyroid like follicular carcinoma of kidney' till 2016 WHO classification. Post this classification, they are now reclassified and renamed as Atrophic kidney-like lesions (AKLL), since they differ from Thyroid like follicular carcinoma of kidney (TFRCC).

Case Presentation

A 10-year-old female presented with a right flank pain. Imaging revealed a right renal well-defined 34x27x24mm mass. Histology coupled with immunohistochemistry revealed a follicular architecture with osseous metaplasia with calcifications, leading to a diagnosis of atrophic kidney-like lesion. No adjunct treatment was given. After 9 months of follow-up, there has been no recurrence or metastasis.

Discussion & conclusion

Atrophic kidney like lesion (AKLL) is a provisionally described entity in renal neoplasms after 2016 WHO classification of renal neoplasms. Atrophic kidney like lesion is rare benign neoplasm with indolent behaviour. Although, AKLL is an uncommon lesion, but it needs to be considered as a differential diagnosis in paediatric renal neoplasms. Further cases are required to understand the biological behaviour of this entity and the management protocol.

ABSTRACTS

[IAP-02] Survey of interstitial lung diseases by lung biopsy with surgical specimens

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Background

ILDs are a group of diseases that are often diagnosed late. Our following objectives are to identify types of ILDs detected in pulmonary surgery specimens & provide a more rigorous diagnostic flow chart in clinical practice at PNTH.

Objectives

To identify types of ILDs detected in pulmonary surgery specimens & provide a more rigorous diagnostic flow chart in clinical practice at PNTH

Materials and methods

Materials: ILDs were diagnosed at the departments of thoracic surgery department & pathology with pulmonary surgery specimens (VATS or open pulmonary surgery).

Methods: Retrospective study, cross-sectional descriptive statistics using Excel 2013 software, two-way statistics, with T-Test. The value of <0.05 is considered statistically significant.

Results

General data: Total number ILDs diagnosed with surgical lung biopsy specimens in 2022: 124 cases. Gender: Male: 84 cases (# 67.74%) - Female: 40 cases (# 32.26%). Average age: 59.76 ± 8.33 years old. Surgical methods: VATS: 108 cases # 87.09%, open lung surgery: 16 cases # 12.91%. Distribution ILD cases: UIP 6 cases, NSIP 18 cases, COP 61 cases, RB-ILD 26 cases, PLCH 2 cases, LAM 2 cases, LIP 3 cases, DIP 2 cases.

Conclusion

With surgical lung biopsies, it helps to diagnose many cases of interstitial lung disease at an early stage with no change in respiratory function. There should be strict procedures to avoid missing cases and more effective monitoring of treatment.

ABSTRACTS

[IAP-03] Expression of p53 and Ki67 in low and high-grade non-muscle invasive papillary urothelial carcinoma

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2. Royal Blackburn Hospital, Blackburn, UK.

Background

Histopathological grading is crucial for managing and predicting the prognosis of urothelial carcinoma. However, inter-observer variability is seen in grading of urothelial carcinoma. Some studies suggest that p53 and ki67 immunohistochemistry (IHC) can improve the accuracy of urothelial carcinoma grading.

Objective

To evaluate the expression of p53 and Ki67 IHC as an adjunct to morphology in grading non-muscle invasive papillary urothelial carcinomas (PUC).

Methods

50 cases of papillary urothelial carcinoma were assessed morphologically. IHC for p53 and Ki67 was performed on all non-muscle invasive urothelial carcinomas and was analyzed using the Allred scoring system. Statistical analysis was done using Kendall's tau b test. SPSS version 25 was used.

Results

62% of cases were of high grade and the rest were of low-grade PUC. 50% of cases were staged pTa and 50% staged pT1. Total scores (TS) for p53 and Ki67 were high in high grade tumours while low in low grade tumours. Statistical analysis showed a significant association between proportionate score (p: 0.01) and TS (p: 0.01) indices for p53 and grade of tumour. Similarly, a significant association between PS (p: 0.01) and TS (p: 0.01) for Ki67 with grade was also established.

Conclusion

p53 and Ki67 immunohistochemistry can be used as an adjunct to morphology in grading urothelial carcinomas.

ABSTRACTS

[IAP-04] Synovial sarcoma of the parotid gland: a case report and literature review

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Introduction

Primary synovial sarcoma (SS) of the parotid is rare, accounting for <3% of head and neck SS. It presents as a diagnostic challenge due to its various histologic types, particularly the monophasic and poorly-differentiated types, and its uncommon location. This is the 37th case to be diagnosed since it was first documented in this location in 1982.

Case presentation

A 27-year-old female initially diagnosed with nodular fasciitis underwent superficial parotidectomy but experienced recurrence after seven months, leading to total parotidectomy. Microsections revealed hypocellular and hypercellular areas with bland spindle cells in the superficial parotidectomy slides, while the total parotidectomy microsections exhibited pleomorphic spindle cells, increased mitosis, and necrosis. Immunohistochemical stains showed diffuse positivity for TLE1, patchy positivity for EMA, and negative results for several other markers. Detection of SS18 translocation by Fluorescent in-situ hybridization confirmed the diagnosis of monophasic SS. She subsequently received radiotherapy and chemotherapy (Doxorubicin and Ifosfamide). On surveillance, PET-CT scan revealed findings suggestive of metastatic disease.

Discussion and conclusion

The unusual location and histologic overlap with other tumours make recognition of primary SS challenging, necessitating immunohistochemical and cytogenetic studies for accurate diagnosis. These require aggressive management, including surgical resection with or without radio/chemotherapy, and close follow-up due to their high recurrence rate.

ABSTRACTS

[IAP-05] Interdigitating dendritic cell sarcoma precedes synchronous T/myeloid mixed phenotypic acute leukemia; the first case report and review literature

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Introduction

Interdigitating dendritic cell sarcoma (IDCS) is a rare tumour originating from the classic dendritic cells in bone marrow. They usually are reported to occur after the presence of low-grade B-cell lymphoma. There is only one case occurring after T-acute lymphoblastic leukemia/lymphoblastic lymphoma (T-ALL) in 1993. They have been proved to have clonal relationship that is suggestive of transdifferentiation of the tumour. The synchronous IDCS and T/myeloid mixed phenotype acute leukemia (MPAL-T/M) have not been reported.

Case presentation

A middle-aged male presented with painful cervical node enlargement. The biopsy showed pleomorphic epithelioid cells with S100 expression. Immunohistochemistry excluded other dendritic cell tumours and melanoma and settled IDCS as a diagnosis. Four months later after treatment, he got generalized lymphadenopathy and found small immature T/myeloid cells aggregating among the IDCS cells in the lymph nodes and bone marrow. Genetic study found NRAS in IDCS, but not in MPAL-T/M. While TCR gene rearrangement is present in MPAL-T/M, but not in IDCS.

Discussion and conclusion

IDCS possibly could transdifferentiate to be leukemia; not only lymphomas or leukemias that can transdifferentiate to be IDCS as previously reported. Unfortunately, we have no definite proof of transdifferentiation or relationship of these two tumours.

ABSTRACTS

[IAP-06] Establishment of an institutional morphologic control for gleason scoring of prostatic adenocarcinoma in prostate needle biopsy specimens at West Visayas State University Medical Center

Ray V. Olac, Jr. M.D., DPSP[1]; Margie S. Gayapa M.D. DPSP[1]

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Background

Gleason scoring is the most powerful prognosticator in prostate adenocarcinoma. However, this is fraught with interrater variability. With such an important aspect, improving interrater agreement will also increase diagnostic accuracy. However, with the lack of a set of morphologic controls to compare the problematic cases, tumour grading and diagnostic accuracy may be compromised.

Objectives

This study was conducted to establish a morphologic control for Gleason scoring of prostate adenocarcinoma in needle biopsy specimens.

Materials and Methods

This document concordance review study utilized 27 slides processed at the same hospital. The slides were sent to be reviewed by eight surgical pathologists. Krippendorff alpha was used to measure the overall agreement. Spearman rank correlation was used to determine correlation among primary and secondary patterns, Gleason score and group grade.

Results

The interobserver agreement is low with a Krippendorff alpha of <0.67. The evaluators more frequently undergraded at 25.92% compared to overgrading at 15.74%. Gleason 8 was most commonly undergraded at 34.48% (22/64) while Gleason 7 was most commonly overgraded at 25.40% (16/63).

Conclusion

Variability stemmed from limited tumour or tissue volume, interpretation and translation of ISUP consensus guidelines on histologic parameters, and level of comfort and exposure of pathologists

ABSTRACTS

[IAP-07] Increase from baseline mean platelet volume as a prognostic marker in patients with sepsis

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Background

The incidence of sepsis occurs in not less than 300 cases per 100,000 people yearly. Hence a timely diagnosis is essential for a favorable outcome. Available biomarkers may be costly, sophisticated or fastidious. More accessible options should be made available without sacrificing accuracy.

Objectives

This study was conducted to determine whether an increase from baseline mean platelet volume in septic patients is associated with an adverse outcome.

Materials and Methods

This is an observational, prospective cohort study. Patients with bacterial blood culture growth were included and followed until 28 days of admission. The initial and MPV after 72 hours were recorded. Logistic regression analysis determined if a higher increase in MPV correlates with outcome.

Results

One hundred seventy-seven patients were included. Of these, 121 (68.4%) are survivors. MPV difference significantly correlates with outcome [$\chi 2(2) = 43.452$, $p < .0001$]. Furthermore, a higher increase in MPV is associated with an adverse outcome, such that for every one unit, the possibility of adverse outcome increases by 476.7%

Conclusion

An increase from baseline MPV is associated with adverse outcomes in septic patients. Measurement of MPV on the day of admission and after 72 hours allows for institution of early goal-directed therapy.

ABSTRACTS

[IAP-08] A rare case of lung gout

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Introduction

Gout is an inflammatory disease caused by the accumulation of uric acid crystals in all tissues of the body1. Serum uric acid level greater than 7 mg/dL is the greatest risk factor for gout2. If it occurs with chronic underlying diseases such as hypertension, atherosclerosis, and chronic obstructive pulmonary disease, it is called secondary gout. We present a rare case of a 69-year-old man diagnosed with pulmonary gout confirmed biopsy.

Case presentation

A 69-year-old man, with history of arterial hypertension, had chest pain, bloody sputum and shortness of breath. On the CT, thick-walled, infiltrative change in the right middle lobe. He was admitted to the State Third Central Hospital and received right middle lobectomy. In micro, nodular, homogeneous eosinophilic, no cellular accumulations contained crystals with polarization, surrounded by foreign body giant cells, were confirmed as gout tophus. The patient was discharged from the hospital without any complication.

Discussion and conclusion

Yang H et.al found that serum uric acid levels were higher in COPD patients compared to non-COPD6. We present a rare case of secondary gout confirmed biopsy. Gout is a chronic inflammatory disease that occurs not only in joints but also secondary to underlying disease in other organ systems.

ABSTRACTS

[IAP-09] Estrogen receptor expression pattern in follicular thyroid cancers: a 23 years retrospective multi-centre study in Jos Metropolis, North-Central, Nigeria

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Background

Follicular Thyroid cancers (FTC) are the second commonest malignancy of this organ and seen more often in females. Estrogen Receptor (ER) is vital in its pathogenesis and prognosis. The aim is to establish ER status of FTC seen in the study region.

Methods

This was a hospital based, retrospective multicenter study. The biodata was obtained from surgical pathology cancer registries. Sections from tissue blocks were reviewed, classified, subjected to immunohistochemistry, scored (using Allred) and analyzed using SPSS-20.

Result

A total of 34 (36%) out of 95 cases of thyroid cancers were included. The mean, mode, median and age range were 49.8±15.4, 44.5, 42 and 32-70 years respectively. Females were predominant (64.7%) with minimal invasive commonest. Three cases (8.8%) were only positive for ER out of which, 2 (66.7%) were females with 1 (33.3%) male. Two of the positive cases had score 3(5.9%) while 1 had score 5(2.9%).

Conclusion

Majority were females and negative for ER, implying that a little are likely to benefit from targeted therapy.

ABSTRACTS

[IAP-10] Serologic SARS-CoV-2 antibody level and factors affecting its production after covid-19 vaccination among employees of a tertiary hospital

Sarah Jane G. Tan, MD[1]; Sheryl Q. Racelis-Andrada, MD, DPSP, PHSAE[1]; Romel D. Rasos, MD, FPSGS, MPA-HEDM[1]

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Background

COVID-19 is global public health crisis. Vaccination is proposed as a key solution to reduce infection spread along with existing measures.

Objectives

This study aimed to determine the SARS-CoV-2 antibodies post-vaccination among employees of Mariano Marcos Memorial Hospital and Medical Center from June to December 2021.

Materials and methods

All employees who received two doses of COVID-19 vaccination who met the inclusion and exclusion criteria were included (413). After 60 days post-second vaccination, participants were interviewed using a pretested questionnaire. Blood collection was done, and antibody levels were determined using an electrochemiluminescence assay machine.

Results

Results revealed that median IgG levels significantly increased 180 days post-vaccination. Also, participants vaccinated with ChAdox1 nCoV-19 displayed higher IgG levels at 60 days, whereas CoronaVac recipients showed higher levels at 180 days. Moreover, participants with pre-existing cardiovascular disease, respiratory disease, and diabetes generally had lower IgG levels post-vaccination, with exceptions noted for respiratory disease at 180 days and diabetes at 60 days. Notably, individuals with previous COVID-19 infections demonstrated increased IgG levels.

Conclusion

In conclusion, COVID-19 vaccination can lead to the production of SARS-CoV-2 antibodies. IgG production is influenced by both COVID-19 infection and vaccination.

ABSTRACTS

[IAP-11] Molar pregnancy presents as tubal ectopic pregnancy: a rare case report

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Introduction

Molar pregnancy is a rare gestational disorder typically limited to the uterine cavity. However, this case report presents a truly exceptional occurrence, with molar pregnancy found in the left fallopian tube, with an incidence rate of only 1.5 cases per 1,000,000 pregnancies. The main objective is to delve into the diagnostic challenges and management implications that come with this uncommon location.

Case Presentation

A 54-year-old female presented with abdominal pain and abnormal uterine bleeding. An elevated blood Beta HCG level of 16,949 mUI/ ml, and pelvic ultrasonography revealed a 31x30x30 mm mass adjacent to the left ovary, suggesting an ectopic pregnancy.

During the exploratory laparotomy, a ruptured left fallopian tube necessitated a left salpingectomy. The histopathological examination confirmed a complete molar pregnancy, characterized by avascular villi, and proliferating numerous trophoblastic cells with moderate atypia.

Discussion and Conclusion

Hydatidiform moles arise from a placental malformation caused by genetic aberrations in the villous trophoblast. Early detection and accurate diagnosis are critical for appropriate management. This case report highlights the importance of considering molar pregnancy in ectopic pregnancies and underscores the significance of histopathological examination for confirmation. Vigilance is essential to provide timely and appropriate care for patients with extrauterine molar pregnancies.

ABSTRACTS

[IAP-12] Spindle cell undifferentiated sarcoma simulating a spindle cell melanoma of skin: a case report

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Introduction

Spindle cell sarcoma is a rare soft tissue tumour and it is extremely uncommon in primary skin lesion. However, it can arise from any part of body. Due to poor prognosis and high risk of early metastasis, it is crucial to include this entity as one of the differential diagnoses.

Case presentation

We report a case of 67 year-old lady who presents with a rapidly enlarging leg mass with multiple lung nodules and lymphadenopathy. The tissue at the right leg mass was obtained and proceeded with H&E showing sheets and fascicles of pleomorphic epithelioid to spindle shaped cells with high mitotic count and presence of necrosis. The case was referred for second opinion and was reported as spindle cell undifferentiated soft tissue sarcoma with negativity towards most of sarcoma markers (CD34, desmin, SMA, S100), carcinoma markers (EMA, p63, HMWCK), GLUT1 show weak focal positive and H3K27me3 show no complete loss. The cells are also negative for melanoma markers. The patient is subsequently referred to oncology team for further management.

Discussion and conclusion

Proper evaluation includes history, imaging and tissue biopsy are mandatory to come to a proper diagnosis. A thorough examination may help in early diagnosis. A wide array of immunohistochemical study is often helpful and spindle cell sarcoma must be included as one of the differentials.

Keywords: spindle cell undifferentiated sarcoma- high grade, spindle cell melanoma

ABSTRACTS

[Abstract-13] Classification of molecular subtypes of endometrial cancer based on DNA methylation signatures

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Background The Cancer Genome Atlas identified four molecular subtypes of endometrial cancer (EC): POLE ultramutated, microsatellite instability hypermutated, copy-number low, and copy-number high. These subtypes have a significant impact on patient prognosis and treatment options. The identification of particular DNA methylation positions associated with pathogenesis may prove useful as biomarkers for disease diagnosis and prognosis.

Objectives This study aims to develop a new diagnostic technique using DNA methylation patterns to classify EC molecular subtypes, which could provide a simpler and more cost-effective option for diagnosis.

Materials and methods In this study, we examined 422 cases from TCGA-EC using the HumanMethylation450 platform. To screen the most important CpG sites in discriminating molecular subtypes of EC, we constructed a screening pipeline. We validated the model with internal test, external test. We also investigated how specific methylation of CpG position changed in each molecular subtype.

Results After CpG screening, we discovered that only 13 CpG positions showed significant differences in methylation levels among the four molecular subtypes of EC. We used these 13 selected probes to build a multiclass log-linear model via a neural network, with accuracy of 0.78 and an overall AUC of 0.91. The model also was robust when validated on external datasets, with an AUC of 0.93.

Conclusion Classifications of DNA methylation model could offer a novel approach to determine molecular subtypes of EC, as well as having the potential for clinical application with cost-effective and time-saving.

ABSTRACTS

[IAP-14] Acute cholecystitis due to taeniasis: a case report of the unusual site of *taenia saginata* infection

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Introduction

Taeniasis is a helminthic disease caused by the Taenia species (*Taenia solium*, *Taenia saginata*, and *Taenia asiatica*). Generally, these parasites infect small and large intestines, but instances of atypical migration have been reported.

Case presentation

A 47-year-old woman presented with epigastric pain, nausea, and vomiting. Physical examination showed tenderness in the upper right quadrant, and laboratory analysis revealed mild direct hyperbilirubinemia. Abdominal ultrasound indicated multiple gallstones and acute cholecystitis. A 70 cm-long tapeworm was found in the gallbladder during an elective cholecystectomy. Histological examination confirmed it as *Taenia* spp. with calcareous corpuscle. Gallbladder histology showed acute inflammation and focal mucosal necrosis. Carmine staining of the three gravid proglottids revealed 20-22 uterine branches, confirming *Taenia saginata*. Following surgery, the patient's symptoms resolved.

Discussion and conclusion

It is possible for parasitic worms to propagate ectopically to the biliary system. *Taenia saginata* and *Taenia asiatica*, which also exhibit active motility in the intestine, have been found on occasion in the biliary tract, which includes the gallbladder and pancreas.

In conclusion, certain parasitic worms can migrate from the intestine to the biliary system. Although less common, *Taenia saginata* and *Taenia asiatica* can also be detected in the gallbladder and cause acute cholecystitis.

ABSTRACTS

[IAP-15] EBV-associated smooth muscle tumour presenting as ileo-ileal intussussception. a case report and review of literature

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Introduction

Epstein-Barr virus-associated smooth muscle tumour (EBV-SMT) are rare neoplasms associated with immunodeficiency. Different anatomic sites are involved, and the lesions may be multiple. Treatment includes surgical resection, radiation therapy, chemotherapy, or improvement of the immune system with HAART in patients with HIV/AIDS.

Case presentation

A 20-year-old lady with retroviral disease presented with abdominal pain. CT scan showed ileo-ileal intussusception. Emergency laparotomy with small bowel resection and primary anastomosis was done.

Grossly, two segments of small bowel; 130 mm and 45 mm in length were received. A polypoidal tumour measuring 35 mm in largest dimension was seen within the wall of the shorter segment.

Microscopy revealed an ulcerated, inflamed and partly necrotic tumour arising from the muscularis propria composed of fascicles of fusiform spindle cells with abundant eosinophilic cytoplasm and elongated to ovoid hyperchromatic to vesicular nuclei. Intermingled T-lymphocytes are seen. The tumour shows diffuse positive for SMA and EBER-ish.

Discussion and conclusion

Tumours such as Kaposi sarcoma, EBV-SMT, lymphomas and spindle cell tumours of infective origin can occur in immunodeficient patients. The main defining features for EBV-SMT are smooth muscle differentiation and EBER-ish positivity. These tumours are rare, of uncertain malignant potential but have favorable outcome when completely excised.

ABSTRACTS

[IAP-16] Manual differential leukocyte count in presence of large immature cells detected by automated hematology analyzer

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Background

Large immature cells (LICs) are myeloid or lymphoid cells normally present in bone marrow which may be released in peripheral blood in various conditions. The automated hematology analyzers though have good correlation with microscopy for mature cells, give flag messages when immature cells are present and manual microscopy remains the reference method.

Objectives

To find types of immature cells comprising LICs and see correlation of automated and manual Differential leukocyte count (DLC) in presence of such cells.

Materials and methods: 100 CBC cases with LIC more than 3% were analyzed microscopically from May to July 2023.

Results

Total leukocyte count ranged from 790 to 479190/cumm. LIC percentage ranged from 3.1 to 76.3. Myeloblasts were seen in 6%, promyelocytes in 6%, myelocytes in 41%, metamyelocytes in 73%, bands in 84%, lymphoblasts in 2%, atypical lymphocytes in 30% and atypical monocytes in 5%. 7% cases were hematopoietic neoplasm in which only 2% had clinical suspicion. There was strong correlation between automated and manual DLC for neutrophils and lymphocytes, fair correlation for monocytes ($p = 0.000$) and no correlation for basophils ($p = 0.175$).

Conclusion

Manual microscopy is required to evaluate all the cases in presence of LIC more than reference range.

ABSTRACTS

[IAP-17] Farnesoid X receptor expression in cholangiocarcinoma: immunohistochemistry and clinicopathological correlation

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Background

Cholangiocarcinoma (CCA) is the malignant bile duct cancer with aggressive behaviors. Chemotherapeutic treatment plays major roles in unresectable patients. Novel therapeutic agents and drugs response against CCA are continuously discovering for improving treatment outcomes. Farnesoid X receptor (FXR) is a ligand-dependent transcription factor involving in cancer progression and drug response are appealing for CCA study.

Objectives

To investigate relationships between expression of FXR drug-responsive receptor in CCA patients and correlate with clinical, pathological, and survival data.

Materials and methods

Retrospective study of cholangiocarcinoma patients who diagnosed between 2018-2022 in Srinagarind Hospital, Khon Kaen University. Immunohistochemistry (IHC) of FXR was performed on paraffin-embedded tissue and used H-score for expression evaluation.

Results

72 patients were enrolled. Mean aged of the patients was 63 y (range 45-83). Tumour situates at intrahepatic 29 (40.3%) and perihilar (59.7%). Cytoplasmic staining was the most common. No FXR IHC expression correlated with age, gender, tumour location, tumour grading, growth type, metastatic status, and tumour staging, but with tumour staging (p=0.03). No statistically significant of FXR expression on patient survival.

Conclusion

CCA is the aggressive cancer with various clinicopathological parameters. FXR IHC expression correlated with tumour staging but not significant in CCA survival.

ABSTRACTS

[IAP-18] Airway obstruction attributed to thymoma in a Post-TB MDR patient: a diagnostic challenge

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Introduction

Thymomas, rare tumours originating from the thymus gland, can lead to varied symptoms due to their mediastinal location. In some cases, they cause critical airway obstruction requiring immediate intervention.

Case Presentation

A patient, after losing 21kg in four months and with a history of completed MDR-TB treatment, exhibited symptoms of sore throat, persistent cough, and nausea. Clinical evaluation necessitated respiratory support, and the patient struggled with solid food intake. Radiological findings suggested a mediastinal lesion, which a CT-scan identified as a superior mediastinal mass suggestive of thymoma. Histologic examination of a biopsy displayed the features typical of mixed-type thymoma with a blend of type A and type B characteristics.

Discussion and Conclusion

Thymomas, although infrequent, can cause compressive symptoms due to their location. Comprehensive evaluation becomes imperative in patients with respiratory symptoms, especially with significant medical histories like tuberculosis. The distinct histologic features of thymomas, such as a combination of neoplastic epithelial cells and non-neoplastic lymphocytes, play a pivotal role in its diagnosis. Recognizing these is vital for precise diagnostic procedures.

Keywords : Thymoma, Airway obstruction, Mediastinal mass, MDR-TB (Multi-Drug Resistant Tuberculosis)

ABSTRACTS

[IAP-19] Comparison liquid-based cell technique (®Path Tezt) and conventional pap smear in cervical cytology screening: a preliminary study

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Background

Early detection of cervical cancer is pivotal for improved patient outcomes. The conventional Papanicolaou (PAP) smear has long been the primary method for cervical cytology screening. However, newer techniques, such as the Liquid-Based Cell (LBC / ®Path Tezt), offer potential advancements in diagnostic accuracy.

Objectives

To evaluate and compare the diagnostic capabilities of the ®Path Tezt LBC technique with the traditional PAP smear in detecting cervical epithelial lesions.

Materials and methods

A cross-sectional study was conducted at SMC Clinic, Jakarta, in June-July 2023. 100 female patients underwent both the LBC (®Path Tezt) and the conventional PAP smear procedures. Experienced pathologists, blinded to the screening method, analyzed the specimens.

Results

Among the TB patients, 62.5% had a smoking history, and 46.9% had previous TB exposure. D-Dimer levels were found to be significantly higher in patients with severe TB symptoms. A positive correlation was observed between the extent of lung lesions in radiology and D-Dimer levels. The average D-Dimer level in the control group was 220 ± 60 ng/mL, while in TB patients with severe lesions, it reached up to 450 ± 90 ng/mL.

Conclusion

The LBC (®Path Tezt) technique appears to offer a promising alternative to the conventional PAP smear in cervical cytology screening, with potential benefits in diagnostic yield and accuracy.

Keywords : Cervical cancer screening, Liquid-Based Cell Technique (®Path Tezt), Papanicolaou (PAP) smear, Cervical epithelial lesions

ABSTRACTS

[IAP-20] Disseminated peritoneal leiomyomatosis: two case reports

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Introduction

Extrauterine leiomyomas are rare entities and easily missed or misdiagnosed. These tumours typically occur in unconventional locations and tend to exhibit a propensity for recurrence and malignancy. In this report, we present two cases of disseminated peritoneal leiomyomatosis.

Case Presentation

The first case involved a female patient incidentally identified during uterine leiomyoma surgery. The second case was initially misdiagnosed as abdominal carcinomatosis based on ultrasound and MRI findings. In both cases, surgical resection successfully removed diffuse smooth muscle tumours from the peritoneum. Immunohistochemistry, including positive staining for ER, PR, SMA, and negative staining for DOG1, CD117, CD34, S100, with a ki67 level below 5%, helped differentiate these tumours from GIST and assessed malignancy. Given the rarity of these tumours, no consensus exists regarding the optimal treatment. The first patient was recurrence-free for a year, and the latter remained stable for ten months with chemotherapy.

Discussion and conclusion

Disseminated peritoneal leiomyomatosis refers to the formation of nodules with smooth muscle cell proliferation on the peritoneal surface and within the abdominal cavity of women. Surgeons should meticulously excise suspected masses, while pathologists must thoroughly evaluate histology and immunohistochemistry, which play a crucial role in differentiating these tumours from malignant ones.

ABSTRACTS

[IAP-21] Clinicopathological characteristics, surgical outcomes, and prognosis of surgically managed lung squamous cell carcinoma: a cohort study

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Background

Lung squamous cell carcinoma (SqCC) significantly contributes to cancer-related mortality. Surgery, alone or in combination with other treatments, is the cornerstone of curative intend therapy in early-stage disease, resectable locally advanced disease, or cases with limited nodal involvement.

Objectives

This study aimed to comprehensively analyze a Portuguese cohort of surgically treated SqCC cases, focusing on clinicopathological characteristics, surgical strategies, recurrence patterns, and overall survival (OS).

Materials and methods

We retrospectively analyzed surgically treated SqCC cases at our hospital over 5 years. Patient records were studied for clinicopathological details and outcomes. We used statistical analyses to identify prognosis factors, including survival calculations.

Results

The cohort primarily comprised male patients (94.4%) with a history of tobacco smoking. The median follow-up period was 44,7 months, ranging from 0 to 100 months.

Disease recurrence was observed in 16.7% of patients, occurring a medium of 32.3 months post-surgery. The 5-year recurrence rate and OS were 16.7% and 55.6%, respectively. Higher AJCC stages, age >65, and vimentin expression were statistically associated with poorer OS.

Conclusion

Our data on recurrence rates and OS aligns with previously published work. Our study associates vimentin expression with poorer OS, supporting recent research showing that vimentin is required for rapid tumour growth and metastasis in NSCLC.

ABSTRACTS

[IAP-22] Myxoid pleomorphic liposarcoma (MPLPS)– a clinicopathologic study of 4 cases

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Introduction

MPLPS is an exceptionally rare type of liposarcoma that affects children and adolescents with female predominance. It mostly involves mediastinum followed by thigh and head and neck. It shows mixed histologic features of myxoid liposarcoma (MLPS) and pleomorphic liposarcoma (PLPS) however, lacks the associated fusions. MPLPS is extremely aggressive with poor overall survival.

Case Presentation

4 cases of MPLPS, diagnosed at AKUH from 2022-2023 were retrospectively studied for clinicopathologic features and follow up was taken. The mean age was 24 years with M:F ratio of 3:1 and mean size of 8cm. The most common site was extremities (thigh, knee and hand), followed by abdomen. Most tumours were deep and multinodular. The ratio of MLPS to PLPS like areas was 70:30. Majority cases had typical morphologic features like pleomorphic cells, myxoid matrix, plexiform/curvilinear vasculature and pleomorphic/multivacuolated lipoblasts. Floret giant cells, pulmonary edema like pattern and well-differentiated LPS like areas were seen in 3 cases. Necrosis was present in 2 cases. Follow-up in 1 patient treated with surgery alone was disease free after 5 months.

Discussion and Conclusion

These results add to the clinicopathologic features of MPLPS, including male predominance and extra-mediastinal sites. More studies from the subcontinent may be helpful.

ABSTRACTS

[IAP-23] Desmoplastic fibroma of bone: a clinicopathologic study of 11 cases

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Background

Desmoplastic fibroma (DF) of bone is an extremely rare, locally aggressive tumour and accounts for <0.1% of all primary bone tumours. It occurs in adolescents and young adults with equal sex predilection. The most involved sites include mandible, followed by long bones and pelvis.

Objectives

To assess clinicopathologic features and behavior of DF.

Material and methods

11 cases diagnosed at AKUH from 2014-2020 were reviewed. Clinicopathologic features were evaluated and follow-up taken.

Results

Mean age was 22 years with M:F ratio of 6:5. Mean tumour size was 5 cm. Most patients presented with swelling of variable duration. Most common site was mandible, followed by long bones. Lesions were composed of fascicles of spindle cells with plump nuclei and inconspicuous nucleoli in a collagenous to focally myxoid background. Small capillaries parallel to fascicles were present in 4 cases and native bone permeation in 8 cases. No atypia, necrosis or mitoses (1-4/10HPF) was seen. β-catenin was cytoplasmic in 6, nuclear in 2 and negative in 3 cases. Follow up of 5 patients was available. All were alive and disease free after surgical excision.

Conclusion

DF is a rare tumour with a challenging diagnosis, and response to surgical resection is very well.

ABSTRACTS

[IAP-24] Clinicopathologic characteristics of parapharyngeal space tumours: a tertiary care center experience of 34 cases

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Background

The PPS is an anatomical space of head and neck with complex fascial margins. Parapharyngeal space tumours (PPSTs) account for 0.5-1.5% of head and neck tumours. PPSTs include tumours of salivary gland, nerve, lymphoid tissue, connective tissue and metastatic lesions. Most are benign and management is based on size, involved structures and likelihood of malignancy.

Objectives

To present clinicopathologic features and behavior of PPSTs.

Materials and Methods

This was a retrospective study of PPSTs received at AKUH from 2011-2021. Clinicopathologic features were assessed and follow-up taken.

Results

34 PPSTs were received. The most common presenting symptoms were swelling and mass. There were 21(62%) males and 13 (38%) females. The mean age was 29 (Median: 23 years). Laterality was left in 11, right in 10, bilateral and midline in 1 each. The mean tumour size was 6.7 (Median: 5.5 cm). The site of origin was salivary gland in 16, nerve in 10, lymph node in 4 and soft tissue in 2 cases. 25 (73%) tumours were benign and 9 (27%) malignant. Pleomorphic adenoma and lymphoma were the most common benign and malignant tumours.

Conclusion

PPSTs present more in males at a younger age with larger size in our population.

ABSTRACTS

[IAP-25] Chondroblastoma like osteosarcoma – an extremely rare variant of osteosarcoma. a series of 4 cases

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OBJECTIVE/INTRODUCTION

Chondroblastoma-like osteosarcoma (CBL-like OS) is an exceedingly rare variant of osteosarcoma (OS). Metatarsals and tibia are commonly involved. The main objective is to identify it as a variant of OS rather than chondroblastoma.

MATERIAL & METHODS

4 cases of CBL-like OS have been diagnosed from our laboratory between 2015-2019. Patient's history and follow-up was taken via telephonic conversation.

RESULTS

Mean age was 19.5 years. 2 were male and 2 were female. Three patients presented with a lytic lesion in long bones and one in Phalanx. Histologically, all the cases showed an infiltrating pattern of sheets of mildly atypical polygonal cells containing round nuclei, with associated lace like osteoid. All these cases were sent abroad for an expert opinion.

Follow up of three patients was available out of which one patient died of disease after multiple recurrences. 2 patients further went on to have amputation and received chemotherapy. None of the patient had metastasis.

CONCLUSION

CBL-like OS usually behaves in a low-grade manner. Prognosis is variable, depending on lung metastases and local recurrences. There has been limited number of cases reported in literature, but it can't deny the fact that this entity needs to be acknowledged so that patients can get optimum treatment and follow up.

ABSTRACTS

[IAP-26] A study of SATB2 expression in histopathology of osteosarcoma

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Background

Recent studies start using SATB2 as a marker of osteoblastic differentiation in soft tissue and bone tumours, particularly in osteosarcoma. However, the role of this new immunohistochemical marker play in diagnosing osteosarcoma remains questionable.

Objective

To investigate the relationship between SATB2 expression and some histopathology features of osteosarcoma.

Methods

A case series of 115 osteosarcomas, diagnosed according to the 2020 World Health Organization classification of Soft Tissue and Bone Tumours, at the Hospital for Traumatology and Orthopaedics in Ho Chi Minh City between January 2019 and December 2022 was described.

Results

SATB2 expression was seen 99,1% of osteosarcoma cases with median score of 4+ (51%-71% tumour cells). The difference between SATB2 expression and histopathology was not statistically significant. 29% of cases showed weak to moderate-intensity staining and were associated with decalcification, fibroblastic osteosarcoma subtype and a lack of osteoid material.

Conclusion

The addition of SATB2 immunostaining may aid in the diagnosis of osteosarcoma, especially in cases with absent or minimal osteoid formation. Further studies are needed to investigate the association of high and strong SATB2 expression with survival and recurrence, to better predict clinical outcomes in the future.

Keywords: SATB2, osteosarcoma.

ABSTRACTS

[IAP-27] The red nose with a bad wolf: a case report of diffuse large B-cell lymphoma mimicking rhinophyma.

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Introduction

Cutaneous B-cell lymphoma is rare, as B-cell lymphoproliferative disorders have a limited range of skin involvement. When they do affect the skin, B-cell neoplasms typically present similarly with common skin disorders.

Case presentation

This is a case of an 80-year-old man with an enlarging, solitary, confined, erythematous mass located at the right nasal ala without other associated systemic symptoms. The patient was initially diagnosed as a case of rhinophyma. Excision of the mass was then performed. On gross examination, the specimen is a flesh-colored, firm, irregular tissue. Microscopic examination shows nonepidermotropic diffuse dermal infiltrate by large noncleaved B-cells consisting of centroblasts and immunoblasts. Immunohistochemical studies demonstrated positive expression of CD20, BCL6, and MUM1 in the neoplastic cells and strong expression of Ki67, while CD5, CD10, and BCL2 were negatively expressed. These findings supported the diagnosis of primary cutaneous diffuse large B-cell lymphoma (PCDLBCL), not otherwise specified (NOS).

Discussion and conclusion

Based on the recent WHO classification for primary cutaneous B-cell lymphoma, the case is morphologically similar to PCDLBCL, Leg-type. With the lack of BCL2 expression, it is classified as not otherwise specified (NOS). PCDLBCL is an aggressive neoplasm. Early and accurate diagnosis is required as these patients respond well to systemic anthracycline-based chemotherapy (R-CHOP).

ABSTRACTS

[IAP-28] Aggressive features of breast cancer in young women and older adults

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Background

Breast cancer is the most prevalent cancer in Indonesia, with 19.2% out of all cancers in 2019. The incidence of young breast cancer is about 5-6% of all breast cancer cases but showed more aggressive features, including low tumour differentiation, Her-2 expression, and distant metastasis.

Objectives

To know the differences in the aggressive features of breast cancer in young women under 40 years and over 40 years in terms of the prevalence of invasive carcinoma, Her-2 expression, and high-grade histopathology.

Materials and methods

Data were collected from 120 medical records of breast cancer patients at Tarakan Hospital Jakarta in 2022-2023. Subjects were divided into two groups based on their age, young breast cancer (YBC) under 40 years old and older breast cancer (OBC) >40 years old. In each group, observations were made regarding breast cancer histological type, grading, and HER2 expression.

Results

From total cases, 18 were YBC, and 103 were OBC. The invasive carcinomas were found in all YBC or 100% and OBC 78,3%. Stage IV was found in YBC 16.8% and OBC 23.3%, highest grade in YBC 50% and OBC 42.7%, and Her-2 positive was found in YBC 94.4% and OBC 70%.

Conclusion

Young breast cancer women tended to show more aggressive features.

ABSTRACTS

[IAP-29] Cytomorphological and biochemical profile of serous effusions

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Background

Serous effusions are a commonly encountered clinical challenge with a diverse non-neoplastic and neoplastic etiologies. In neoplastic processes, they can represent an advanced stage of disease. Their analysis serves both for diagnostic as well as prognostic purpose.

Objectives

To see protein concentration of these effusions, classify them as transudate or exudate and correlate the results with cytomorphological findings.

Materials and methods: Ninety-six serous effusions received from 1st June to 15th August, 2023 were analyzed.

Results

There were 52 (54.2%) cases of peritoneal, 43 (44.8%) cases of pleural and 1 (1.0%) case of pericardial fluid. Total protein ranged from 0.06 to 7.50 g/dl with mean ± SD of 3.03 ± 2.25 g/dl. There were 40 (41.7%) exudates and 56 (58.3%) transudates. Total cell count ranged from 10 – 22720 cells/cumm. There was significant correlation between total protein and total count (Pearson correlation coefficient 0.886 and p value = 0.015 at 99%). Ninety-three (96.9%) cases were negative for malignancy. One (1.0%) case each was diagnosed as atypia of undetermined significance, suspicious for malignancy, and positive for malignancy. All three cases were exudates in nature.

Conclusion

Exudative effusions require further microscopic examination.

ABSTRACTS

[IAP-30] Immunohistochemical expression patterns of epithelial and subepithelial *Helicobacter pylori* in gastric biopsy specimens: comparison of monoclonal and polyclonal antibodies using the rapid urease test

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Background

The rapid urease test (RUT) and immunohistochemical staining (IHC) are commonly used for *Helicobacter pylori* diagnosis after endoscopy. Studies have shown the invasive ability of *H.pylori* using the TMDU-H.pylori antibody. However, the association between RUT and IHC based on the bacterial location and histopathological features has never been investigated.

Objectives

To evaluate the diagnostic performance of different methods for *H.pylori* in gastric biopsies based on the bacterial location and histopathological features.

Materials and methods

One hundred and thirty-three gastric biopsies and RUT results were evaluated. IHC was performed using monoclonal and polyclonal anti-H.pylori antibodies.

Results

H.pylori was detected in 24.8% using RUT, 52.6% using Biogenex, 39.1% using TMDU, 28.6% using Cell Marque, and 25.6% using DAKO. Using TMDU as the gold standard, the overall sensitivity of RUT, Biogenex, TMDU, Cell Marque, and DAKO was 55.8%, 100%,71.2%, and 63.5%, respectively. The detection rates of Biogenex, TMDU, Cell Marque, and DAKO on the surface and interstitial locations were 28.6% vs. 50.3%,25.6% vs. 30%,27.1% vs. 1.5%, and 24.1%vs.1.5%, respectively.

Conclusion

Sensitivity of RUT, TMDU, Cell Marque, and DAKO was markedly reduced because of inflammatory inactivity and the interstitial location of the bacteria. Our results indicate that Biogenex outperforms TMDU, Cell Marque, DAKO, and RUT in diagnosing *H. pylori*, even in the absence of surface bacteria. The diagnostic performance of Biogenex is maintained, regardless of inflammatory activity, morphological changes, or bacterial location.

ABSTRACTS

[IAP-31] Topographic distribution of *H. pylori* density with clinical outcomes in gastric biopsies of patients receiving proton pump inhibitors

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Background

Although *Helicobacter pylori* (*H.pylori*) is assumed to be a non-invasive pathogen, several studies have shown that *H. pylori* is invasive. Rod-shaped bacteria often change into coccoid-shaped bacteria during proton pump inhibitor (PPI) therapy.

Objectives

To investigate the relationship between PPI use, bacterial invasiveness, and clinical outcomes

Materials and methods

Two hundred and fifty-five gastric biopsy patients with or without PPI use between October 2022 and December 2022. Immunohistochemistry (IHC) was performed. Bacteria were grouped according to their epithelial and subepithelial distributions.

Results

TMDU and Biogenex showed the highest diagnostic accuracy. Using TMDU and Biogenex as gold standards, significant differences were observed in the interstitial-H.pylori staining, G1, and G2 between patients with PPI use when compared to non-PPI users (80.6% vs. 96.2%,61.3% vs. 19.2%, and 16.1% vs. 38.5%, respectively; all P<0.05). Our results indicated that the presence of histologically active cases and PPI users show positive correlation with G1 (HR,3.55;95%CI, 1.18–10.72; P=0.024, vs. HR,8.02;95%CI,2.62–24.50; P<0.001) and inversely correlated with G2 (HR,0.05; 95%CI, 0.010.25; P<0.001 vs. HR,0.24; 95% CI, 0.07–0.84; P=0.026). Our results indicate that the presence of G2 could be predictive of worse clinical outcomes (HR,0.25; 95%CI,0.12–0.50; P<0.001) in Cox models.

Conclusion

PPI use may alter the microenvironment of the gastric mucosa and bacterial biology. The presence of interstitial *H.pylori* could be a predictor of worse clinical outcomes and could be incorporated into pathological reports according to the Updated Sydney system. The eradication of this atypical form of bacterium should be further investigated.

ABSTRACTS

[IAP-32] A case report on metastatic laryngeal squamous carcinoma colliding with papillary thyroid carcinoma in a lymph node

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Introduction

Collision tumour is defined as the coexistence of histologically distinct tumours in the same location or as metastases from other sites. With its complexity, recognizing the presence of both tumours pre-operatively and through biopsy is essential to avoid incomplete case management.

Case presentation

This is the case of a 71-year-old male who was initially diagnosed with moderately differentiated squamous cell carcinoma (SCC) through a laryngeal biopsy. Subsequent radical surgery revealed an incidental finding of papillary thyroid carcinoma. In addition, metastatic carcinomas were seen in the lymph nodes showing independent metastatic SCC and papillary thyroid carcinoma. In one of these lymph nodes, a collision tumour of metastatic papillary thyroid carcinoma and laryngeal SCC was documented, further supported by their strong positive reactions with thyroglobulin and p63, respectively.

Discussion and conclusion

The current recommendation in the treatment of collision tumours follows that of the more aggressive or invasive histological component which is a dilemma for this case as both metastasized to the lymph nodes indicating an aggressive behavior.

As collision tumour rarely occurs, all cases should be reported thoroughly and with surveillance for the entire course of the disease. This can aid in understanding its pathology for better diagnostic, therapeutic, and prognostic practices among physicians.

ABSTRACTS

[IAP-33] Diagnostic value of red cell distribution width and platelet to lymphocyte ratios in colorectal carcinoma

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Background

Colorectal cancer (CRC) is considered one of the leading causes of mortality and morbidity in the Philippines. Markers of systemic inflammation, such as platelet-to-lymphocyte ratio (PLR) and red cell distribution width-coefficient of variation (RDW-CV), are being used as diagnostic biomarkers in several tumours. However, the combined sensitivity and specificity of both parameters have not been conclusively determined.

Objectives

This study aimed to determine the diagnostic values of PLR and RDW-CV in patients diagnosed with CRC, as well as the correlation of standard serum carcinoembryonic antigen (CEA) to PLR and RDW-CV.

Materials and methods

This is a two-year observational cross-sectional study that included 152 patients diagnosed with CRC and admitted at Baguio General Hospital and Medical Center. The sociodemographic characteristics of the sampled population and their PLR, RDW-CV, and CEA were analyzed using a data abstraction tool.

Results

The ROC curve analysis showed that the optimal cut-off values of PLR and RDW-CV were 13.23 and 14.0, respectively. The diagnostic efficacy of combined CEA and RDW-CV (AUC=0.822, sensitivity, Se=72.18%, specificity, SP=73.68%) for CRC is higher than any of the individual and combination of these markers.

Conclusion

The combined values of the biomarkers have superior diagnostic performance and, therefore, can be used as screening tools in CRC detection.

ABSTRACTS

[IAP-34] Cauda equina paraganglioma or neuroendocrine tumour? a reappraisal of classification, morphology, and immunohistochemical features

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Introduction

Cauda equina neuroendocrine tumour (CENET), previously called Cauda equina paragangliomas (PGL), are rare extra-adrenal neuroendocrine tumours arising from specialized neural crest cells. These are histogenetically distinct from other PGL with most of the tumours showing immunoreactivity for cytokeratins (CK).

Case presentation

All cases diagnosed as PGL within the spinal region, from January 2014 to June 2023, were included. For each case, age, gender, clinical presentation, site, radiological features, morphological features were recorded and immunohistochemical stains for synaptophysin, chromogranin A, Ki67, Cytokeratins (AE1/AE3 and CAM5.2), S100 and GATA3 were performed to evaluate the morphological and immunohistochemical characteristics of CENET.

Discussion and conclusion

A total of 7 cases were retrieved having a mean age of 40 years with male dominance (M:F ratio-6:1). Cauda equina was the most prevalent site of involvement (n=5, 71%). The morphological features were similar to other NETs. Reactivity for at least one neuroendocrine marker was seen in all cases. S100 showed variable expression (n=6, 87%). CKAE1/AE3 was expressed in (n=5, 71%) and CAM5.2 in (n=6, 83%) of cases. GATA3 expression was seen in (n=1, 14%) cases. Concluding that CENET differ from PGL as they have a distinct immunoprofile showing immunoreactivity for cytokeratins and lack of GATA3 expression.

ABSTRACTS

[IAP-35] Pure invasive cribriform carcinoma of the breast with osteoclast-like stromal giant cells in a 43-year-old female: report of a special tumour subtype with literature review

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Introduction

Breast cancer is patently the most common cancer globally dominated by Invasive Breast Carcinoma (IBC) of no special type. Circa 2018, it has the highest incidence (17.6%) in the Philippines. Amongst the rare subtypes is the Invasive Cribriform Carcinoma (ICC) with 0.3% - 3.5% incidence. The average age of ICC is 61 for females. Here, we present a special case of pure ICC with osteoclast-like stromal giant cells.

Case presentation

A 43-year-old female presented a palpable left breast mass. Cytology showed proliferative breast lesion with subtle cribriform clusters, mild nuclear atypia and absence of stripped bipolar nuclei. Excision biopsy and subsequent mastectomy showed Pure Invasive Cribriform Carcinoma, Nottingham Histologic Grade 1. Osteoclast-like stromal giant cells were evident in the desmoplastic stroma. No lymphovascular, perineural and nodal involvement. Immunohistochemistry revealed ER+/PgR+/HER2- and low Ki67.

Discussion and conclusion

Invasive Cribriform Carcinoma is a rare, luminal A IBC subtype with a distinctive sieve-like appearance cytologically and histologically. The presence of osteoclast-like stromal giant cells is an uncommon characteristic. Identification from other neoplasms with cribriform features may entail further immunohistochemistry study for definite diagnosis. Though there is no specific standard treatment protocol, ICCs rarely recur and metastasize, manifesting an excellent prognosis.

ABSTRACTS

[IAP-36] Primary salivary ductal carcinoma of the lung: a case report

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Introduction

Salivary duct carcinoma (SDC) belongs to a class of rare and highly invasive malignant tumours, which originates from salivary duct epithelial cells. The most common occurrence was in parotid gland, followed by submandibular gland, sublingual gland, minor salivary gland, maxilla and larynx. Primary salivary duct carcinoma of the lung is rare.

Case presentation

We report a case of 74 years old male with primary salivary duct carcinoma of the lung. The patient in our case carries PIK3CA, HRAS mutations. As far as we know, this is the first case of PIK3CA, HRAS mutations detected in Primary salivary ductal carcinoma of the lung

Discussion and conclusion

SDC is one of the salivary gland malignancies with high malignancy with low 5-year survival rate. At present, the standard treatment is complete surgical resection. New treatment methods are still being explored. We hope that this case can provide new clues for treatment of SDC

ABSTRACTS

[IAP-37] Exploring fetal pallister-hall syndrome: insights from autopsy examination

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Introduction

Pallister-Hall Syndrome (PHS) is an exceedingly rare autosomal dominant disorder intricately associated with mutations in the GLI3 gene. It is recognized by a combination of anomalies affecting the hypothalamic-pituitary axis, leading to endocrine dysregulation, polydactyly often involving the thumbs, and distinct anatomical malformations such as bifid epiglottis and imperforate anus.

Case presentation

A fetus at 22 weeks gestation from healthy parents presented routine ultrasound findings revealing bilateral postaxial polydactyly of the hands. A genetic study revealed a mutation of GLI3, located on 7p13, indicating a diagnosis of Pallister-Hall Syndrome.

The autopsy revealed a 22-week female fetus with an imperforated anus, polydactyly, and various anatomical abnormalities.

These included skeletal issues in the hand, like misaligned metacarpals, trigger fingers, and extra digits with underdeveloped nails. Craniofacial features like a bulbous nasal tip and ear placement below auricular pavilions were present.

Other findings encompassed tracheal cartilage dysplasia, absence of left lung, bilateral renal dysplasia, congenital heart defects, and a bicornuate uterus.

Discussion and conclusion

The syndrome's clinical heterogeneity challenges prenatal diagnosis, making postmortem examinations pivotal in elucidating the intricate spectrum of peculiarities and refining diagnostic criteria.

ABSTRACTS

[IAP-38] A malignant melanoma arising in ovary without teratoma: challenging in diagnosis of primary site

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Introduction

Primary malignant melanoma of the ovary is an exceptionally rare entity and mostly reported as originating from cystic teratoma in literature. Herein, we describe a case of primary ovarian malignant melanoma with no evidence of teratomatous components.

Case presentation

A 38-year-old female had a 12-centimeter right pelvic mass incidentally detected on ultrasound. Her history and physical examination of the skin and other mucosal sites were unremarkable. Microscopically, the tumour represented sheets of epithelioid cells with abundant eosinophilic cytoplasm, vesicular nuclei, and central prominent nucleoli. Apart from intra- and extra-cytoplasmic melanocytic granules, no teratomatous and glandular elements were observed after extensive grossing. Immunohistochemical evaluation demonstrated a diffusely strong positivity for HMB45, Melan-A, SOX10, vimentin, focal synaptophysin expression whereas AE1/AE3, EMA, inhibin and calretinin were completely negative. The final diagnosis was confidently established as primary ovarian malignant melanoma.

Discussion and conclusion

Metastatic ovarian malignant melanomas are more common than primary ovarian malignant melanomas. Furthermore, primary ovarian malignant melanoma should be distinguished from either metastasis or arising in other common neoplasms (i.e., epithelial tumours, sex-cord stromal tumours, and germ cell tumours). Unilateral mass confined in the ovary and no history of extraovarian primary sites of melanoma exclude metastasis restrictedly. Diffuse and strong positivity of melanocytic markers and completely negative markers of epithelial and germinal origin and sex cord differentiation for tumour cells contribute to a definitive diagnosis.

Keywords: ovarian tumour; primary malignant melanoma

ABSTRACTS

[IAP-39] Optimization of HPV positive women screening with p16/ki67 double staining in an organized screening program

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2. Roche Diagnostics, Amadora, Portugal

Background

Cervical cancer screening is key to reducing incidence and mortality. Primary screening involves testing for 14 high-risk HPV genotypes. Triage, like dual staining (DS) p16/Ki67 cytology, aids in risk assessment and colposcopy resource management for HPV+ women, possibly enhancing sensitivity and specificity. This optimizes colposcopy referrals and re-testing.

Objectives

To compare PAP vs DS cytology triage in terms of (i) optimization of colposcopies referrals and (ii) risk stratification for defining the follow-up interval.

Material & Methods

A retrospective analysis was conducted on the screening database of central Portugal from July 2019 to May 2023. The screening algorithm recommended PAP triage for all HPV+ women. In addition, HPV+ women were evaluated by DS cytology.

Results

At baseline (1032 HPV+ women), 739 women were DS- [66% NILM and 28% with ASC-US+] and 290 were DM+ (1% NILM and 94% ASC-US+). DS positivity as referral criterion for colposcopy instead of ASC-US+ would have reduced the number of colposcopies by 39% overall and by 48% for HPV “other12” while improving the number of colposcopies per HSIL (2.9 vs. 4.9).

Conclusions

DS triage optimizes colposcopy referrals and extends the follow-up interval to 3 years for HPV "other 12"/DS-, reducing the need for annual testing in many women.

ABSTRACTS

[IAP-40] Bone tumour malignancy profile base on histopatology at DR. M. DJAMIL GENERAL HOSPITAL

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Background

Histopathological examination plays a pivotal role in unraveling the intricate characteristics of bone tumour malignancies.

Objective

Histopathological analysis is a cornerstone in the diagnosis of bone malignancies. This study presents a comprehensive examination of 31 cases encompassing these diverse bone tumour types. By histopathology examination, we get the microscopic features we elucidate the distinct characteristics that differentiate these malignancies.

Material and methods

This research is descriptive research conducted retrospectively. Data was retrieved by total sampling from Pathological Anatomy medical records from January to December 2022.

Result

Of the 31 cases of malignancy of bone tumours, there were 24 cases of osteosarcoma, 1 case of Ewing tumour, 2 cases of chondrosarcoma, and 4 cases of metastatic bone disease. Based on gender, most cases of bone malignancy occur in women between 11-20 years.

Conclusion

Diagnosis of bone malignancy requires proper histopathological examination for appropriate therapy.

ABSTRACTS

[IAP-41] The delusive nature of metastatic prostate adenocarcinoma to bilateral testis: a case report

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Introduction

Testicular metastasis is rare; it signifies advanced primary disease. It is challenging when it is not suspected and resembles primary testicular neoplasm. We encountered a case of metastatic prostate in both testes incidentally.

Case presentation

A 48-year-old Malay male was initially diagnosed with prostate carcinoma having bone metastasis. He underwent a scheduled bilateral orchidectomy later. Histopathological examination revealed the presence of malignant cells infiltrating the testis bilaterally. These cells cleverly evaded the tubules, forming an intertubular pattern without any obvious circumscribed mass. The cells are homogenous with rounded nuclei and small nucleoli, with pale to clear cytoplasm. Lymphovascular invasion was present. In addition, the seminiferous tubules showed maturation arrest with some enlarged spermatogonia. Notably, despite resembling a primary testicular neoplasm, seminoma; the tumour was identified as a metastatic prostatic adenocarcinoma.

Discussion and conclusion

This case highlights the deceptive manifestation of prostate metastatic carcinoma in testis. It emphasizes the importance of considering metastasis as a differential diagnosis when encountering atypical presentation of testicular neoplasm in young patients with known disease. Additionally, it underscores the awareness of the potential of prostate carcinoma to metastasize to testis, even in the absence of typical clinical features and radiological findings, despite being a rare occurrence.

Keyword: Testis; Testicular; Metastasis; Secondary tumours; Testicular tumours; Prostate adenocarcinoma

ABSTRACTS

[IAP-42] Association between HER2 expression in luminal B subtype breast cancer with nodal metastatic

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Background

Breast cancer is a heterogeneous disease, characterized by various molecular subtypes that influence its behavior and response to treatment. HER2 overexpression in luminal B subtype breast cancer is known to have aggressive behavior and poor prognosis. Nodal metastatic is one of the critical factors affecting patient outcomes.

Objectives

This study aims to investigate the association between HER2 expression and nodal metastatic in luminal B subtype breast cancer.

Materials and methods

An analytical cross-sectional study was conducted using 104 samples diagnosed with luminal B subtype and HER2 expression by immunohistochemical staining associated with nodal metastasis. The association between HER2 expression and nodal metastasis was analyzed using the Chi-square test, with a significance level set at $p < 0.05$.

Results

There were 67 samples (64.4%) of breast cancer luminal B and HER2 positive and 37 samples (35,6%) of luminal B and HER2 negative. The majority of patients (45 samples) with luminal B and HER2 positive have more lymph node metastasis (67.2%). The nodal metastatic was found in 64.9% (24 samples) of luminal B and HER2 negative. The Chi-square test result is p=0.983.

Conclusion

This study revealed that there was no association between HER2 expression in the luminal B subtype and nodal metastatic.

ABSTRACTS

[IAP-43] Mesonephric-Like Adenocarcinoma of the Uterus: a case report

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INTRODUCTION:

Mesonephric-like adenocarcinoma (MLA) is a rare malignancy representing about 1% of endometrial carcinomas and is a new entity that was recently added in the 2020 WHO Classification of Female Genital Tract Tumours. The importance of this case report is to raise awareness of the characteristic histological features of MLA, and add to global data in clinicopathological and molecular verification to clarify the histogenesis, biological behavior and possible treatment option.

CASE PRESENTATION:

A 66-year-old patient presented with vaginal bleeding and thickened endometrium on ultrasound. Hysterectomy revealed a 2.3x2x1.3 cm fungating mass with myometrial invasion. The tumour featured is comprised of columnar cells with mild to moderate nuclear atypia, displaying various architectural patterns including papillary, micropapillary, glandular, retiform, glomeruloid, and tubular, with focal eosinophilic luminal secretions.

Immunohistochemistry showed diffuse GATA-3 and TTF-1 positivity, focal p16 positivity, wild-type p53 expression, and ER/PR negativity. Next-generation sequencing indicated mutations in KRAS G12V, CDKN1B W76, FAM123B P551fs*28, NKX2-1, and SPOP M177V.

DISCUSSION AND CONCLUSION:

MLA diagnosis relies on morphological recognition and immunohistochemistry, supported by molecular analysis for potential treatment strategies. Despite its low-grade appearance, MLA is categorized as high-grade endometrial carcinoma, carrying high recurrence and metastasis risks. Given its rarity, further research is needed to determine pathogenesis and therapeutic approaches.

ABSTRACTS

[IAP-44] Clinicopathologic Characteristics of Ovarian Carcinoma from 2018-2023 in Hasan Sadikin General Hospital Bandung

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Background

Ovarian carcinoma (OC) has several subtypes with some overlapping histopathological presentation and usually has a poor prognosis. According to WHO, ovarian Mucinous Carcinoma (MC) is the most common subtype of OC in Southeast Asia, especially Indonesia.

Objectives

This study aimed to report the incidence and clinicopathologic characteristics of OC between 2018-2023 tertiary Hospital in Bandung, Indonesia

Materials and Methods:

We conducted a descriptive study, collecting OC data from medical records in Hasan Sadikin General Hospital.

Results

The most common subtypes from 462 patients were MC (N=462;32%) based on histomorphology and immunohistochemistry followed by Ovarian Endometrioid Carcinoma (EC) (N=462;21%). We revealed EC's incidence was higher than ovarian High-Grade Serous Carcinoma (HGSC) (21% vs. 18%) which is in contrast with the WHO report as the most common subtype. The mean age was 47.89 years and the age range was 14-81 years. The largest OC reported was 50 cm in the greatest dimension found in EC and the smallest OC was 3cm found in Ovarian Clear Cell Carcinoma.

Conclusion

The most common subtype of ovarian carcinoma was ovarian mucinous carcinoma and the overall mean age was 47.89 years. The largest ovarian carcinoma was endometrioid carcinoma with 50 cm in the greatest dimension.

ABSTRACTS

[IAP-45] Collision tumour in appendix-low grade appendiceal mucinous neoplasm and neuroendocrine tumour: a series of two cases

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INTRODUCTION/OBJECTIVE

Primary tumours of the appendix represent 1-2% of appendectomies. Low-grade appendiceal mucinous neoplasm (LAMN) and well differentiated neuroendocrine tumour (NET) are common, incidentally found in 0.6% and 0.3-0.9% of appendectomy respectively. Collision tumours of the appendix are extremely rare, defined as the coexistence of two independent tumours located in the same site without transitional changes. Our objective is to identify these cases which may guide the clinician for therapeutic management and prediction of prognosis.

MATERIALS AND METHODS:

Two cases of synchronous LAMN and NET of appendix have been diagnosed from our laboratory between 2021-2023.

RESULTS

The mean age was 46.5 years. One was male and one female patient. Both the patients presented with abdominal mass. Gross showed cystic lesion. Mean tumour size was 4.6 cm. Histologically, both the tumours showed synchronous areas of appendiceal wall lined with columnar mucinous epithelium with nuclei showing low grade dysplasia within lumen containing acellular mucin pools and an area of small round cells with nuclei showing stippled chromatin.

CONCLUSION

Theoretically each tumour arises from a separate progenitor cell. giving rise to difficulties in pathologic diagnosis, therapeutic management and prediction of prognosis. The management of the appendiceal collision tumours remains a matter of debate.

ABSTRACTS

[IAP-46] Mesonephric-like adenocarcinoma of the ovary: a rare malignant tumour of the female genital tract

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Introduction

Mesonephric- like adenocarcinoma (MLA) from the ovary are very rare tumours derives from mesonephric duct remnant of female genital tract.

Case report

A 45-year-old lady presented with menorrhagia. CTTAP showed a large left ovarian multilobulated solid cystic mass. Patient underwent hysterectomy with bilateral salphingoopherectomy. The large left ovarian mass contains brownish fluid with a solid area. Microscopically, the tumour shows malignant cell infiltration; arranged predominantly in tubulocystic pattern of varying sizes containing intraluminal colloid-like secretions. Immunohistochemical studies shows the tumour cells positive for CD10, EMA, GATA3, PAX8, TTF1, p53 and negative for WT1, CK5/6, ER/PR, Napsin A, AMACR and Inhibin.

Discussion and conclusion

Ovarian MLA is an extremely rare malignant tumour. The most common pattern is tubular or glandular with the formation of small glands, with a common presence of eosinophilic intraluminal colloid-like material. Immunohistochemically, these tumours may be positive for mesonephric markers (GATA3, PAX2, TTF1, and CD10), negative WT1 expression, non-diffuse p16 immunoreactivity, and wild-type p53 expression. WT1, estrogen and progesterone receptors are negative.

Ovarian MLA is a rare but clinicopathologically distinct entity which can be diagnosed with the support of appropriate immunostaining and targeted sequencing.

ABSTRACTS

[IAP-47] Dermatofibrosarcoma protuberans manifesting as a breast skin tag

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Introduction

Dermatofibrosarcoma protuberans (DSFP) of the breast is rare and can clinically be diagnosed as a benign breast lesion as this tumour is slow growing.

Case report

A 60-year-old lady presented with a slow growing right breast mass and clinically diagnosed as a skin tag. Excision of the right breast 'skin tag' was performed and intraoperatively, noted a 5x5cm lobulated mass with mix areas of hard and soft component. The mass located about 7cm from the nipple. Histopathological examination of the mass revealed to be a dermal spindled cell neoplasm with infiltration to the subcutaneous fat. CD34 is diffusely positive. The breast lesion is signed out as DSFP.

Discussion and conclusion

Breast DSFP is often mistaken as a benign lesion, causing delay in the diagnosis and subsequently, in treatment. Complete surgical excision with adequate margin is curative.

In summary, this entity should be acknowledged as the treatment modalities differ between a benign lesion and breast DSFP. It is important to note that DSFP is locally aggressive with high recurrence rate.

ABSTRACTS

[IAP-48] Neuroendocrine carcinoma of the cervix: a case report

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Introduction

Neuroendocrine carcinoma of the cervix is a rare and aggressive variant, constituting only 2% of cervical cancer cases, characterized with poor prognosis.

Case presentation

We present a case of a 35-year-old woman with postcoital bleeding along with pelvic pain. Initial clinical suspicion pointed to a cervical myoma, but subsequent investigations revealed an exophytic carcinomatous mass. Histopathological analysis through H&E staining reveals an insular pattern of tumour cells, characterized by their round to oval shapes. Histopathology confirmed neuroendocrine carcinoma through positive chromogranin and synaptophysin staining, coupled with high Ki67 proliferation. Imaging confirmed ovarian involvement, leading to neoadjuvant chemotherapy and subsequent surgical intervention. Postoperative pathology confirmed extensive infiltration and ovarian involvement. Patient management included palliative radiation. In the most recent follow-up data, the patient developed pulmonary metastasis.

Discussion and conclusion

The advanced stage at presentation highlights the need for precise staging to guide effective multimodal therapy. This case underscores the importance of early diagnosis, comprehensive radiological evaluation, and thorough immunohistochemistry assessment to tailor management strategies. Given the rarity and aggressiveness of neuroendocrine neoplasms, enhancing awareness and understanding of these tumours is pivotal for improved clinical outcomes.

ABSTRACTS

[IAP-49] GATA3 and SOX10 expression in breast cancer

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Background

The combination of GATA3 and SOX10 is useful not only for the detection of breast origin but also for the prognostic and therapeutic potential of breast cancer.

Objectives

We aimed to examine the diagnostic potential of the combination of GATA3 and SOX10 in breast cancer and analyze their significance and correlation with clinicopathological characteristics.

Materials and methods

We analyzed 207 primary invasive breast cancer patients with lumpectomy or mastectomy without pre-operative treatment. The expressions of GATA3 and SOX10 were detected by immunohistochemical staining. Clinicopathological characteristics and molecular subtype classification were investigated.

Results

SOX10 and GATA3 were positive in 13.5% and 93.7% of cases overall, respectively. The sensitivity of SOX10 expression in TNBC and ER-negative cases was significantly higher than GATA-3 ($p<0.001$). The GATA3 expression was related to a lower lymphovascular invasion rate, lower node metastasis rate, ER-positive, PR-positive, and low-Ki67, while SOX10 expression was inversely correlated with GATA3 expression.

Conclusion

SOX10 expression is associated with unfavorable pathological characteristics in breast cancer, while GATA3 expression is the opposite. The SOX10 and GATA3 combination may be used as a sensitive breast cancer marker, especially for TNBC and cases with low ER expression.

ABSTRACTS

[IAP-50] Giant cell tumour of bones of head and neck region: series of eight cases from a single institute

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Introduction

Giant cell tumours of bone (GCTB) are benign tumours arising predominantly in the epiphyseal regions of long bones. The pathogenic mutation involves H3F3A gene, which is H3.3p.Gly34Trp in up to 90% of cases. This mutation makes it a specific target for confirming the diagnosis using the surrogate immunohistochemical (IHC) antibody H3.3G34W. GCTBs of the head and neck region are extremely rare. In this series, we report eight cases of GCTBs arising in the head and neck region, confirmed by positive H3.3G34W on IHC.

Case presentation

Eight cases were diagnosed in the last 7 years, confirmed by positivity for H3.3G34W antibody staining. Age range was 13 to 63 years. 06 were females and 02 males. The sites were 2 cases in sphenoid region, 2 in nasopharynx, 2 in mandible and maxilla, 1 clival and 1 mastoid/CP angle lesion. One of the sphenoidal cases showed malignant transformation to Osteosarcoma.

Discussion and Conclusion

GCTBs of bone being extremely rare, may be confused microscopically with giant cell reparative granuloma, phosphaturic mesenchymal tumour and other giant cell rich lesions. The surrogate IHC marker helps in reaching the correct diagnosis in all such cases.

APPENDIX 1
INFORMATION FOR AUTHORS

All authors listed in a paper submitted to Asian Archives of Pathology (AAP) must have contributed substantially to the work. It is the corresponding author who takes responsibility for obtaining permission from all co-authors for the submission. When submitting the paper, the corresponding author is encouraged to indicate the specific contributions of all authors (the author statement, with signatures from all authors and percentage of each contribution can be accepted). Examples of contributions include: designed research, performed research, contributed vital new reagents or analytical tools, analysed data, and wrote the paper. An author may list more than one type of contribution, and more than one author may have contributed to the same aspect of the work.

Authors should take care to exclude overlap and duplication in papers dealing with related materials. See also paragraph on Redundant or Duplicate Publication in "Uniform Requirements for Manuscripts Submitted to Biomedical Journals" at http://www.icmje.org/index.html.

The submitted manuscripts will be reviewed by three members of the Editorial Board or three expert reviewers from different institutions. At the discretion of the Editorial Board, the manuscripts may be returned immediately without full review, if deemed not competitive or outside the realm of interests of the majority of the readership of the Journal. The decision (reject, invite revision, and accept) letter will be coming from the Editorial Board who has assumed responsibility for the manuscript's review. The editor's decision is based not just on technical merit of the work, but also on other factors such as the priority for publication and the relevance to the Journal's general readership. All papers are judged in relation to other submissions currently under consideration.

Categories of Manuscripts

1. Letters to the Editor

The letters to the editor are the reactions to any papers published in AAP. These letters will be reviewed by the Editorial Board and sent to the authors of the original paper with an invitation to respond. Letters and eventual responses will be published together, when appropriate.

- *Word Count: 300 – 500 words (excluding references and figure or table legends)*
- *Abstract: Not required*
- *References: Maximum of 10*
- *Figure or Table: Maximum of 1 (if needed)*

2. Original Articles

The original articles are the researches describing the novel understanding of anatomical pathology, clinical pathology (laboratory medicine), forensic medicine (legal medicine or medical jurisprudence), molecular medicine or pathobiology. Systematic reviews, meta-analyses and clinical trials are classified as articles. The articles should be clearly and concisely written in the well-organised form (see ***Organisation of Manuscripts***): abstract; introduction; materials and methods; results; discussion; and conclusions. The manuscripts that have passed an initial screening by the Editorial Board will be reviewed by two or more experts in the field.

- *Word Count: 3,000 – 5,000 words (excluding abstract, references, and figure or table legends)*
- *Structured Abstract (see* ***Organisation of Manuscripts****): 150 – 200 words*
- *References: Maximum of 150*
- *Figures or Tables: Maximum of 6*

3. Review Articles

The review articles are generally invited by the Editor-in-Chief. They should focus on a topic of broad scientific interest and on recent advances. These articles are peer-reviewed before the final decision to accept or reject the manuscript for publication. Therefore, revisions may be required.

- *Word Count: 3,000 – 5,000 words (excluding abstract, references, and figure or table legends)*
- *Unstructured Abstract: 150 – 200 words*
- *References: Maximum of 150*
- *Figures or Tables: Maximum of 4*

4. Case Reports

AAP limits publication of case reports to those that are truly novel, unexpected or unusual, provide new information about anatomical pathology, clinical pathology (laboratory medicine) or forensic medicine (legal medicine or medical jurisprudence). In addition, they must have educational value for the aforementioned fields. The journal will not consider case reports describing preventive or therapeutic interventions, as these generally require stronger evidence. Case reports that involve a substantial literature review should be submitted as a review article. The submitted case reports will undergo the usual peer-reviewed process.

- *Word Count: 1,200 – 2,000 words (excluding abstract, references, and figure or table legends)*

- *Unstructured Abstract: 150 – 200 words*
- *References: Maximum of 20*
- *Figures or Tables: Maximum of 4*

5. Case Illustrations

Case illustrations are aimed to provide education to readers through multidisciplinary clinicopathological discussions of interesting cases. The manuscript consists of a clinical presentation or description, laboratory investigations, discussion, final diagnosis, and up to 5 take-home messages (learning points). Regarding continuous learning through self-assessment, each of the case illustrations will contain 3 – 5 multiple choice questions (MCQs) with 4 – 5 suggested answers for each question. These MCQs are placed after the final diagnosis and the correct answers should be revealed after the references. The questions and take-home messages (learning points) are included in the total word count. The manuscripts that have passed an initial screening by the Editorial Board will be reviewed by two experts in the field.

- *Word Count: 1,000 – 2,000 words (excluding references and figure or table legends)*
- *Abstract: Not required*
- *References: Maximum of 10*
- *Figures: Maximum of 2*
- *Tables: Maximum of 5*

6. Technical Notes

The technical notes are brief descriptions of scientific techniques used in the anatomical pathology, clinical pathology (laboratory medicine), forensic medicine (legal medicine or medical jurisprudence), molecular medicine or pathobiology. The submitted manuscripts are usually peer-reviewed.

- *Word Count: Maximum of 1,000 words (excluding references and figure or table legends)*
- *Abstract: Not required*
- *References: Maximum of 5*
- *Figures or Tables: Maximum of 2*

Organisation of Manuscripts

1. General Format

The manuscripts written in English language are preferable. However, Thai papers are also acceptable, but their title pages, abstracts, and keywords must contain both Thai and English. These English and Thai manuscripts are prepared in A4-sized Microsoft Word documents with leaving 2.54-cm (1-inch) margins on all sides. All documents are required

to be aligned left and double-spaced throughout the entire manuscript. The text should be typed in 12-point regular Times New Roman font for English manuscript and 16-point regular TH SarabunPSK font for Thai manuscript.

The running titles of English and Thai manuscripts are placed in the top left-hand corner of each page. They cannot exceed 50 characters, including spaces between words and punctuation. For the header of English paper, the running title will be typed in all capital letters. The page number goes on the top right-hand corner.

Footnotes are not used in the manuscripts, but parenthetical statements within text are applied instead and sparingly. Abbreviations should be defined at first mention and thereafter used consistently throughout the article. The standard abbreviations for units of measure must be used in conjunction with numbers.

All studies that involve human subjects should not mention subjects' identifying information (e.g. initials) unless the information is essential for scientific purposes and the patients (or parents or guardians) give written informed consent for publication.

2. Title Page

The title page is the first page of the manuscripts and must contain the following:

- The title of the paper (not more than 150 characters, including spaces between words)
- The full names, institutional addresses, and email addresses for all authors (If authors regard it as essential to indicate that two or more co-authors are equal in status, they may be identified by an asterisk symbol with the caption "These authors contributed equally to this work" immediately under the address list.)
- The name, surname, full postal address, telephone number, facsimile number, and email address of the corresponding author who will take primary responsibility for communication with AAP.
- Conflict of interest statement (If there are no conflicts of interest for any author, the following statement should be inserted: "The authors declare that they have no conflicts of interest with the contents of this article.")

3. Abstract

A structured form of abstract is used in all Original Article manuscripts and must include the following separate sections:

- *Background: The main context of the study*
- *Objective: The main purpose of the study*
- *Materials and Methods: How the study was performed*
- *Results: The main findings*

- *Conclusions: Brief summary and potential implications*
- *Keywords: 3 – 5 words or phrases (listed in alphabetical order) representing the main content of the article*

4. Introduction

The Introduction section should clearly explain the background to the study, its aims, a summary of the existing literature and why this study was necessary or its contribution to the field.

5. Materials and Methods

The Materials and Methods section must be described in sufficient detail to allow the experiments or data collection to be reproduced by others. Common routine methods that have been published in detail elsewhere should not be described in detail. They need only be described in outline with an appropriate reference to a full description. Authors should provide the names of the manufacturers and their locations for any specifically named medical equipment and instruments, and all chemicals and drugs should be identified by their systematic and pharmaceutical names, and by their trivial and trade names if relevant, respectively. Calculations and the statistical methods employed must be described in this section.

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The Conclusion section should state clearly the main summaries and provide an explanation of the importance and relevance of the study reported. The author will also describe some indication of the direction future research should take.

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- *Journal article*

1. Sibai BM. Magnesium sulfate is the ideal anticonvulsant in preeclampsia – eclampsia. Am J Obstet Gynecol 1990; 162: 1141 – 5.

- *Books*

2. Remington JS, Swartz MN. Current Topics in Infectious Diseases, Vol 21. Boston: Blackwell Science Publication, 2001.

- *Chapter in a book*

3. Cunningham FG, Hauth JC, Leveno KJ, Gilstrap L III, Bloom SL, Wenstrom KD. Hypertensive disorders in pregnancy. In: Cunningham FG, Hauth JC, Leveno KJ, Gilstrap L III, Brom SL, Wenstrom KD, eds. Williams Obstetrics, 22nd ed. New York: McGraw-Hill, 2005: 761 – 808.

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- *Discussion*
- *Conclusions*
- *Acknowledgements*
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