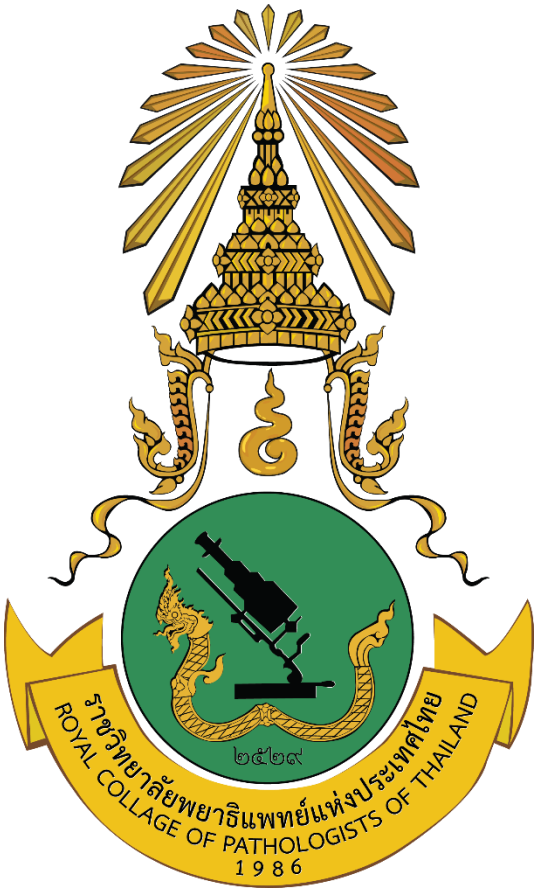
ASIAN ARCHIVES OF PATHOLOGY

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, hematopathology, 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 baht 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] Non-small cell lung cancer with met ex14 skipping mutation at Pham Ngoc Thach Hospital - Vietnam for 3 years (2021 - 2023)

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Background and objectives: The MET ex14 skipping gene mutation appears in NSCLC at a low rate, but is also an important target for treatment. The role of this mutation is also important both in the early stages of disease detection and in the progression of relapse causing treatment resistance. We conducted research on MET ex14 skipping in NSCLC, with the following goals:

a. Survey on the occurrence of MET ex14 skipping in NSCLC.

b. Initial clinical application in the treatment of NSCLC.

Materials and methods: All NSCLC patients, regardless of disease stage, have hospitalized at Pham Ngoc Thach hospital in the 3 years 2021-2023 (January 1, 2021 - December 31, 2023) will be diagnosed with genetic mutations using next generation sequensing. A retrospective, cross-sectional descriptive statistical study. Using SPSS 20.0 software, with T-Test and χ^2 tests, two-sided tests, statistical values < 0.05. Implementation technique: new generation sequencing technique on Ion GeneStudio S5 series Iontorrent ThermoFisher Scientific system, based on mRNA analysis platform on 12 genomes in the most common gene groups in NSCLC: EGFR, ALK, ROS1, KRAS, BRAF, NRAS, NTRK, PIK3CA, MET ex14 Skipping, RET, PTEN, HER-2.

Results: Total number of NSCLC cases with diagnostic testing for genetic alterations using NGS in 3 years (2021 - 2023): 489 cases. Gender: Male: 231 cases (47.24%) – Female: 258 cases (52.76%). Average age: 61.87 ± 7.52 years old. Percentage of patients who smoke: 376 cases # 76.89%. Distribution of histological types: adenocarcinoma (401 cases # 82%), squamous cell carcinoma (43 cases # 8.79%), squamous cell carcinoma (6 cases # 1.23%), large cell carcinoma (15 cases #3.07%), other types of carcinoma (24 cases #4.91%). Distribution of MET ex14 skipping mutation cases according to histological type: adenocarcinoma (7 cases #2.28%), epithelioid lymphomatoid carcinoma (1 case #0.33%), sarcomatoid carcinoma (8 cases #2, 61%), spindle cell carcinoma (1 case #0.33%).

Discussion and conclusion: MET ex14 skipping mutation in NSCLC accounts for about 3%. This mutation appears most often in adenocarcinoma and sarcomatoid carcinoma histology. Currently, there are targeted drugs used to treat this type of mutation and the diagnosis and detection of this mutation in the stages of NSCLC helps to prescribe better treatment medecine (camatinib, tepotinib), crizotinib).

ABSTRACTS

[IAP-02] Leiomyosarcoma with osteoclast-like giant cells arising from a leiomyoma uteri: a case report

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Introduction: Uterine leiomyosarcomas (LMS) are diagnosed based on the presence of necrosis, cytologic atypia, and mitotic rate. They arise de novo and have better prognosis when detected early. Osteoclast-like giant cells (OCGs) in such tumors may present a diagnostic challenge to the pathologist.

Case presentation: This is a case of a 65-year-old female presenting with postmenopausal bleeding for one month. Imaging revealed a myomatous mass with a subserous component. A hysterectomy was done, and histopathologic evaluation revealed marked cytologic atypia, increased mitotic rate, necrosis, and OGCs. An abrupt transition from leiomyoma to the sarcomatous component was seen. The tumor is pancytokeratin, S100, and ER-negative, but CD10 and SMA positive. Desmin and caldesmon are only positive in the benign component. CD68 highlighted OGCs. No other therapies were done. Metastasis to the lower vertebral column was detected a month later, resulting in the patient's demise.

Discussion and conclusion: Malignant transformation of leiomyoma to LMS is confirmed in this case histologically, with the aid of IHC stains. This case also supports studies relating loss of smooth muscle marker expression with poorer prognosis. Further studies should explore risk factors for malignant transformation and if the OGCs may be potential targets for therapy.

ABSTRACTS

[IAP-03] Osteopathological lesions in vertebrae bones: insights from Thai cadavers bone collection from Siriraj anatomical and anthropological bone research centre

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Background: Osteopathologies are important in reconstructing a biological profile as they can infer an unknown individual's physical health. The bone diseases are observed most frequently in vertebral columns. By understanding the pathologies of the vertebrae, this knowledge can be adapted for forensic anthropology in terms of selecting parameters for morphometric methods.

Objectives:

1. To identify osteopathologies in vertebral bones.
2. To study their prevalence in the Bone collection.
3. To examine their correlation with sex and age.

Materials and methods: 144 vertebral columns were collected from the bone collection with documented sex and age at death. Osteopathologies of vertebrae were recorded. Their correlation with sex and age was then analyzed using chi-square and Pearson's Correlation in SPSS.

Results: In the Thai cadavers, Bone disease was absent in 1.4% (2 of 144) and was present in 98.6 % (142 of 144), which could be divided into 21 conditions. The five most prevalent bone diseases were OLF, OSIL, Dish, Schmorl's node, and spondylolysis among the examined samples. The correlation between spondylolysis and sex was significant (p-value = 0.05). The correlation with age for OLF, OSIL, and Dish was also deemed significant (p-value < 0.05).

Discussion and conclusion: In this study, sex and age at death were found to be correlated with the majority of observed pathological conditions. They manifest in a form of bony ossification and compression, which may attribute to occupational stress or developmental defects.

ABSTRACTS

[IAP-04] Mixed neuroendocrine – non-neuroendocrine neoplasm of the endometrium: a diagnostic challenge

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2. Department of Pathology, University Medical Center at Ho Chi Minh City, Vietnam

Introduction: Mixed neuroendocrine – non-neuroendocrine neoplasm (MiNEN) is a distinctly unusual malignancy of the gynecologic tract. Herein, we present an intriguing case of endometrial tumor designated as MiNEN due to its substantial neuroendocrine component.

Case presentation: A 63-year-old, gravida 3, para 3 female presented to our emergency department with a 5-day history of postmenopausal vaginal bleeding, ascites, and shortness of breath. Her medical history was unremarkable. A pelvic MRI showed a T2W-hyperintense, heterogeneous, 5.8 cm mass in the endometrial cavity with myometrial invasion. Additionally, there was moderate ascites accompanied by multiple peritoneal and omental cakes suggesting a condition of carcinomatosis. The endometrial curettings revealed a biphasic neoplasm. The first population was sheets of cells with nuclear molding, prominent nucleoli, vesicular chromatin, and numerous mitoses in the background of geographic necrosis. Approximately 30% of these cells were diffusely positive for chromogranin A, synaptophysin, and CD56. The second population exhibited papillary and glandular structures lined by atypical cells, which only demonstrated AE1/AE3, p53 overexpression, and block-type p16. Collectively, these profiles led to a diagnosis of large cell neuroendocrine carcinoma mixed with serous carcinoma (or endometrial MiNEN). The patient subsequently underwent a hysterectomy with bilateral salpingo-oophorectomy and omentectomy (FIGO IVB). Unfortunately, she passed away due to complications of ascitic fluid infection 14 days following the surgery.

Discussion and conclusion: Endometrial MiNEN is an extremely rare tumor that mostly affects postmenopausal women. Microscopically, MiNEN should be differentiated from mixed endometrial carcinoma, undifferentiated/dedifferentiated carcinoma, and non-Hodgkin lymphoma. While several cases of dedifferentiated carcinoma may exhibit minimal neuroendocrine differentiation with a cut-off range of < 10%, our case is suitable for MiNEN designation based on its substantial neuroendocrine component (30% of tumor cells). Endometrial MiNEN has a poor prognosis. The management often involves surgical approach with postoperative adjuvant radiochemotherapy.

ABSTRACTS

[IAP-05] A case report of intrathyroidal thymic carcinoma disguised as poorly differentiated thyroid carcinoma

Chun Chau Lawrence Cheung, Manish Mahadeorao Bundele,
Joyce Lai Tian Tian
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Introduction: Intrathyroidal thymic carcinoma (ITC) is a rare thyroid neoplasm and is a malignant epithelial tumour with thymic differentiation occurring within the thyroid gland. It is believed to arise in intra- or peri-thyroidal thymic tissue.

Case presentation: We report a case of a 33-year-old female with pT3b pN0a ITC. She first presented with a right neck lump followed by hoarseness of voice. US thyroid, CT neck and MRI neck showed a 3.1cm ill-defined mass which is in contact with the right tracheal cartilage rings at the right thyroid lower pole. FNA of the mass was suspicious for malignancy. She subsequently underwent total thyroidectomy, central neck and right lateral neck dissection. The histology shows a tumour featuring islands of poorly differentiated carcinoma surrounded by chronic inflammatory infiltrate in desmoplastic stroma. The carcinoma cells are diffusely positive for AE1/3 and CK19, and show patchy expression of p40, CD5 and CD117.

Discussion and conclusion: ITC should be suspected when the tumour has a lymphoepithelial-like morphology. Immunohistochemical positivity for CD5 and CD117 and absence of TTF-1 and thyroglobulin are helpful in establishing the diagnosis. It is important to distinguish ITC from squamous cell carcinoma and anaplastic thyroid carcinoma as ITC has a better prognosis.

ABSTRACTS

[IAP-06] Caroli disease in a 39-year-old man: a case report

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Introduction: Caroli disease is a rare congenital disorder characterized by the segmental cystic dilatation of large intrahepatic bile ducts***.***

Case presentation: A 39-year-old Malay man presented with an incidental findings of liver cyst detected from medical imaging check-up. Ct abdomen revealed multiple well-defined cystic lesion throughout the liver with the largest in the left lobe measuring 2x2.5cm. MRCP showed irregular alternating saccular dilatation of the intrahepatic ducts and multiple cystic liver lesions, raising the suspicion of Caroli's disease. Liver biopsy was performed.
Microscopically, the liver biopsy exhibited multiple, dilated bile ducts lined by single layer cuboidal epithelium with round, centrally located nuclei. The dilated ducts exhibits intraductal bridging and fibrotic wall. No apparent connection with native bile duct noted in this biopsy. The remaining liver parenchyma shows relatively preserved lobular architecture and areas of macrovasicular.

Discussion and conclusion: Caroli disease is a rare condition, occur more commonly among individuals of Asian descent and affects both genders equally. A differential diagnosis is biliary hamartoma, which can be differentiated from Caroli disease using MRCP. Unlike Caroli disease, biliary hamartoma does not exhibit communication or enhancement changes on MRI with contrast.

ABSTRACTS

[IAP-07] Research on the clinical signs and pathological features of Dermatomyositis

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Background: Diagnosing dermatomyositis (DM) necessitates a comprehensive evaluation of clinical and histopathological characteristics. This study aims to provide a detailed examination of the clinical, histological, and immunohistochemical features of DM.

Methods: The study involves a retrospective review of 14 patients diagnosed with DM at the Department of Pathology, University of Medicine and Pharmacy, Ho Chi Minh City, between 2019 and 2023. The study focused on analyzing their clinical presentations, histological patterns, and immunohistochemical profiles.

Results: The average age of the patients was 53 ± 20.68 years, with a female-to-male ratio of 2.5:1. Clinical signs observed included Heliotrope rash in 35.7% of patients, Gottron's papules in 50%, and the Shawl sign in 21.4%. Mechanic's hands and Hiker’s feet were not observed in any patients. Histologically, 57.1% of cases showed endomysial inflammation, 50% had perifascicular atrophy , and 21.4% showed muscle fiber necrosis. Immunohistochemical analysis revealed positivity for HLA-ABC in 57.1%, HLA-DR in 21.4%, and C5b-9 in 35.7%, with elevated Mx1/2/3 levels in 42.9%. No cases showed p62 vacuolar deposition. The detection rate of DM reached 85% when combining MAC and MHC I markers.

Discussion and conclusion: DM diagnosis requires integrating clinical, histopathological, and immunohistochemical data, with immunohistochemistry playing a crucial role in identifying and differentiating the disease.

ABSTRACTS

[IAP-08] Malacoplakia of the seminal vesicles in disguise as a locally advanced malignancy: an extremely rare presentation

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Introduction: Malacoplakia is a rare inflammatory condition typically affecting the urinary bladder and kidney parenchyma. Seminal vesicle malacoplakia is exceptionally reported in the literature. We demonstrate a case of malacoplakia in the seminal vesicles, mimicking a locally advanced neoplasm.

Case presentation: A 55-year-old male presented with persistent groin pain for a month. His medical history included type 2 diabetes mellitus but no prior malignancy. He exhibited no fever or urinary tract symptoms. Pelvic MRI revealed a 7-cm heterogeneous mass originating from the seminal vesicles, which was initially suspected to be malignant. Tumor biomarkers were unremarkable, and colorectal endoscopy was performed to rule out the invasion from the colon. Transrectal ultrasound-guided biopsy showed chronic inflammatory infiltration of eosinophilic macrophages, lymphocytes, and plasma cells, with Michaelis-Gutmann bodies identified by PAS and von Kossa technique. These findings collectively confirmed malacoplakia. The urine culture yielded the colonization by Escherichia coli. The patient then was treated with ciprofloxacin. Six-month follow-up showed a complete regression of the lesion.

Discussion and conclusion: The seminal vesicle is an extremely rare site of malacoplakia involvement in the urogenital tract. The lesion's heterogeneity and invasion on imaging may raise concerns for an aggressive tumor. Histopathological examination of distinctive foamy macrophages and Michaelis-Gutmann bodies is critical for diagnosis and avoidance of unnecessary surgical interventions. Prolonged antibiotic therapy with fluoroquinolones and optimal control of risk factors were effective in treating this condition.

ABSTRACTS

[IAP-09] Granulomatous appendicitis – an incidental finding in a case of acute appendicitis

Kevin Min Yek Ling, Yin Ping Wong, Geok Chin Tan.

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Introduction: Granulomatous appendicitis is an inflammatory condition involving appendix characterized by granulomas. Crohn disease is one of the non-infectious causes of granulomatous appendicitis, with an incidence of approximately 0.2% to 0.55% and has a male predominance. We describe the possible differential diagnoses.

Case presentation: A 23-year-old lady, presented to the hospital with abdominal pain. She had no known medical illness. Blood investigation showed elevated inflammatory markers. Computed tomography abdomen and pelvis (CTTAP) showed features of acute appendicitis. Subsequently, laparoscopic appendectomy is performed. Macroscopically, inflamed appendix in fragments seen. Microscopically, marked transmural inflammation, non-caseating granulomas, cryptitis, crypt abscesses are within the appendix. Special stains for acid fast bacilli and fungus were negative. She was diagnosed to have granulomatous appendicitis with a comment to further investigate for Crohn disease.

Discussion and conclusion: The causes of granulomatous appendicitis can be categorized into infectious and non-infectious. Infectious causes of granulomatous appendicitis to include mycobacteria, bacteria and parasite. The presence of non-caseating granulomas, marked transmural inflammation and negative microbiological tests should raise the suspicion of appendiceal Crohn's disease. A careful histomorphological examination and clinical correlations is crucial to avoid misdiagnosis of granulomatous appendicitis.

ABSTRACTS

[IAP-10] Poorly differentiated adenocarcinoma of gallbladder with sarcomatoid differentiation: a rare diagnosis with treatment challenge

Norafifah Mohd Yusoff, Nurul Husna Mohd Dani, Syed Nabil Syed Junid Aljunid, Suria Hayati Md Fauzi, Nordashima Abd Shukor

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Introduction: Sarcomatoid differentiation in gallbladder carcinoma is exceedingly rare. The prognosis is often poor due to rapid disease progression and a high recurrence rate within a short period.

Case Presentation: We report a case of a 51-year-old woman who presented with epigastric pain and underwent a laparoscopic cholecystectomy for acute cholangitis. Histopathology revealed a poorly differentiated gallbladder adenocarcinoma with neuroendocrine differentiation. A few months later, subsequent PET-CT scans showed metastasis to the liver and peritoneum. The patient underwent chemotherapy and en bloc resection of the left hemihepatectomy with transverse colon, revealing a metastatic poorly differentiated adenocarcinoma with focal neuroendocrine differentiation and extensive sarcomatous differentiation. The tumor was composed of malignant epithelial cells with nearly 50-60% sarcomatous components. Despite aggressive treatment, the disease progressed rapidly, leading to gastric outlet obstruction and sepsis. She was then discharged with a plan for supportive and hospice care.

Discussion and Conclusion: Poorly differentiated adenocarcinoma of the gallbladder with sarcomatoid differentiation is an exceptional form of gallbladder cancer, characterized by its distinct nature and unfavorable prognosis. The prognosis varies significantly between patients with early-stage and advanced-stage disease, highlighting the substantial differences in outcomes based on the disease stage.

ABSTRACTS

[IAP-11] Pulmonary blastoma: a rare case report

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2. University Medical Center of Ho Chi Minh City, Vietnam.

Introduction: Pulmonary blastoma is a very rare, aggressive neoplasm, constituting less than 0.1% of resected lung cancers. Its morphology resembles lung fetal tissue and exhibits both epithelial and mesenchymal features. Surgery is the standard treatment. Prognosis is poor, with two-thirds of patients dying within 2 years and only a 16% 5-year survival rate.

Case Presentation: We report a case of a 46-year-old non-smoking male who accidentally discovered a right lung tumor during a routine health check-up. Physical examination showed no abnormalities. The patient's past medical history was unremarkable. A chest X-ray showed an opaque mass in the lower third of the right lung, which was further confirmed by a computed tomography (CT) scan to be a 7.5 × 5.5 cm mass in the lower lobe of the right lung, suggestive of a tumor. The patient underwent a right lower lobectomy. The tumor showed a biphasic pattern with branching glandular structures and primitive mesenchymal cells. Immunohistochemistry revealed that the mesenchymal component exhibited diffuse positivity for vimentin, the epithelial component showed diffuse positivity for CK and TTF1, and both components were positive for beta-catenin.

Discussion and Conclusion: We present a case of a classic biphasic pulmonary blastoma, which is among the first cases reported in Vietnamese medical literature. The main differential diagnoses are fetal adenocarcinoma and carcinosarcoma. Careful examination of morphology, immunohistochemistry, and genetic analysis may be useful in making the distinction. In clinical practice, the possibility of pulmonary blastoma should be considered when histological findings show a biphasic pattern.

ABSTRACTS

[IAP-12] Cardiac angiosarcoma with pericardium, liver, lung, bone, soft tissue and meninges metastasis: a rare case report

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2. Department of Pathology, University Medical Center of Ho Chi Minh City, Vietnam

Introduction: Cardiac angiosarcoma is a rare, aggressive primary mesenchymal tumor with high invasiveness and metastatic potential. Diagnosis is challenging and mainly depends on biopsy accuracy. With an incidence of about 0.017% and a poor prognosis, median survival is typically 9 to 12 months. The complexity of heart biopsies and the tumor's rapid progression often delay diagnosis, leading to metastasis. We describe a case of cardiac angiosarcoma with multiple liver metastases, initially diagnosed by a liver biopsy.

Case presentation: A 16-year-old Vietnamese girl was admitted with a progressive dry cough. An echocardiogram showed a large pericardial effusion without cardiac tamponade. Chest and abdominal CT scans revealed a 4 cm mass in the right atrium, causing atrial compression or invasion, and multiple 2 cm lesions in the right liver. A liver biopsy showed microscopic features of angiosarcoma: pleomorphic spindle cells forming irregular vascular sinusoids, and positive immunohistochemistry for CD34 and CD31. After a year of treatment, the patient developed multiple metastases to the lungs, liver, bones, scalp, meninges, and cavernous sinus.

Discussion and conclusion: The lesion's primary location was initially unclear. However, several factors suggested cardiac angiosarcoma: (1) the patient's young age, (2) a single cardiac lesion versus multiple hepatic lesions, (3) the right atrium is the most common site for cardiac angiosarcoma, (4) hepatic angiosarcoma rarely metastasizes to the heart, and (5) frequent liver involvement by cardiac angiosarcoma. This case highlights the importance of clinical and pathological correlation in evaluating angiosarcoma of deep organs.

ABSTRACTS

[IAP-13] Clear cell meningioma presenting as cauda equina syndrome

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Introduction: Clear cell meningioma (CCM) is one of the rarest variant of menigioma accounting for only 0.2 to 0.8% of all meningiomas. Spinal CCM is scarcer with only few reported cases in literature.

Case presentation: We present a case of a 36 years old female, presented with numbness and weakness of bilateral lower limbs associated with urinary incontinence for 3 to 4 months. MRI of the brain showed lobulated intradural mass, occupying the lumbosacral canal from L2 to S1. She then underwent L1 to L5 laminoplasty and tumour excision. We received large fragments of brownish tubular tissue, which entirely consist of tumour. Sections from the tumour showed neoplastic cells arranged in patternless pattern composed of round to oval cells with clear, glycogen rich cytoplasm and distinct cell borders.

Discussion and conclusion: Spinal CCM has a predilection for younger patients and are more common in the lumbar region. In conclusion, it important to recognize and correctly diagnose this entity as it is more aggressive (WHO Grade 2) and has a higher local recurrence rate.

ABSTRACTS

[IAP-14] "The Mantle Unveiled": a rare case of primary splenic mantle cell lymphoma with extensive involvement

Grace Shalmont, Farilaila Rayhani, Ros Nirmawati, David Sitinjak, Evlina Suzanna.

NCC Dharmais, Jakarta, Indonesia

Introduction: Primary splenic mantle cell lymphoma is an uncommon B-cell neoplasm that confined solely to the spleen. Herein, we report a case of Primary Splenic Mantle Cell Lymphoma (MCL) with massive splenomegaly, with multiple lymph node and bone marrow involvement, a combination that is unusually described in literature.

Case presentation: A 53-year-old male presented with right-sided abdominal pain. Imaging revealed significant splenomegaly (28,4x19,4x9,8 cm) and multiple large mesenteric and paraaortic lymphadenopathy (up to 18,2x14,8x7,5 cm), suggestive of malignant lymphoma. Splenectomy was performed and histopathology revealed monomorphic lymphoid proliferation with a nodular pattern. Immunohistochemistry confirmed MCL, with positivity for CD79a, CD20, Cyclin D1, high Ki67 index and negativity for CD3, CD5, SOX11, CD10, and CD23. Bone marrow biopsy confirmed involvement. Post-operatively, patient recovered well and already received first cycle chemotherapy.

Discussion and conclusion: This case Primary splenic MCL with massive splenomegaly and bone marrow highlights the importance of comprehensive diagnostic approach through a multidisciplinary collaboration that is vital in accurately diagnosing and managing the patient's condition. In rare and complex cases like this, the pathologist's contribution is essential for guiding the multidisciplinary team in making informed decisions, ultimately leading to successful patient management.

ABSTRACTS

[IAP-15] Primary renal osteosarcoma: a case report

Giang My Ngoc[1], Vo Quang Thai[2], Nguyen Ngoc Minh Tam[2], Bui Thi Thanh Tam[1,2], Bui Phuong Quynh[2], Le Trong Hieu[2], Nguyen Phuc Thuc Uyen[1]

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Introduction: Primary renal osteosarcoma is a rare and malignant neoplasm arising from the kidney and is characterized by a dismal prognosis and low survival rates. To our knowledge, only 31 cases have been reported in the literature since 1936. Despite previously reported cases, the understanding of renal osteosarcoma is still inadequate and there are limited data on its clinical behavior, optimal management, pathology and long-term outcomes.

Case presentation: A 56-year-old male patient presented with progressive, increasing lower back pain. No significant personal or family medical abnormalities were reported. CT imaging revealed a mass in the left kidney and subsequent radical nephrectomy revealed a 6x5x5 cm tumor.

Microscopically, the tumor displayed osteoblastic cells arranged in a lace-like pattern with osteoid production, chondroblastic cells within a cartilaginous matrix, and areas rich in giant cells. Notably, there was no evidence of malignant renal epithelial components.

Immunohistochemical analysis showed that the tumor was negative for CK20, CK7, GATA3, p63 and PAX8, while positive for Vimentin and SATB2.

Discussion and conclusion: In our case, clinical setting, imaging, histopathological, and immunohistochemical findings were consistent with extraosseous osteosarcoma of the kidney. Intergration of clinical and imaging data is essential for accurate diagnosis.

ABSTRACTS

[IAP-16] Ovarian sex cord stromal tumor with annular tubules: a clinicopathological study of 8 cases

Hania Naveed, Nasir Ud Din, Romana Idrees, Naila Kayani

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Introduction: Sex cord tumor with annular tubules (SCTAT) is a rare tumor. It occurs in two forms: sporadic and syndromic, the latter shows an association with Peutz-Jeghers syndrome. 20% of sporadic SCTATs have a malignant potential. The present study is a single-center retrospective case series of patients with SCTAT diagnosed between 2015 and 2024 at our laboratory.

Case presentation: Total 8 patients were included. Mean age of the patients was 26.6 years. 3/8 were pediatric patients (age <12 years). Most common presenting symptom was menstrual irregularities in adults and abdominal pain in pediatric patients. All patients had a unilateral tumor and no syndromic association (muco-cutaneous melanin pigmentation or colonic polyps) was found. Mean gross size of the tumor was 12.2 cm. Microscopically, rounded nests and tubules containing basement membrane-like material was observed. Follow-up was available for all patients. Metastasis was observed in 4 patients (50%). Metastatic sites included cervical and abdominal lymph nodes, brain and kidney. One patient died of progressive disease. None of the pediatric patients had recurrence or metastasis.

Discussion and conclusion: Current series concludes a high rate of metastasis particularly in adult patients. No syndromic form was identified. Pediatric patients had a good prognosis.

ABSTRACTS

[IAP-17] Primary cardiac angiosarcoma: case report and literature review

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2. University Medical Center, Ho Chi Minh City, Vietnam

Introduction: Primary cardiac angiosarcoma is a rare, aggressive tumor originating from endothelial cells. Diagnosing and managing this condition, particularly in its early stages, is challenging. Transesophageal echocardiography is sensitive for detection, while CT and MRI assess tumor anatomy and metastases.

Case presentation: We report a 57-year-old female presenting with a one-month history of chest discomfort but no dyspnea. Clinical examination and echocardiography noted significant pericardial effusion. Elevated NT Pro-BNP levels were noted. CT and MRI identified a mass in the right atrium, with invasion into the pericardium and contact with the upper border of the right diaphragm, but no invasion of the inferior vena cava. Thoracoscopic pericardial window surgery was performed, and biopsy analysis revealed spindle cells with hyperchromatic nuclei and numerous mitotic figures. The tumor cells were positive for CD31, CD34, and Actin, but negative for Calretinin and Desmin, with a Ki-67 proliferation index of 30%. No metastases were detected. The patient underwent adjuvant chemotherapy and showed symptomatic improvement.

Discussion and conclusion: Diagnosis of primary cardiac angiosarcoma requires histopathology and immunohistochemistry. Early detection is difficult due to nonspecific symptoms, leading to poor prognosis from late-stage diagnosis. The lack of standardized treatment highlights the need for a multidisciplinary approach.

ABSTRACTS

[IAP-18] An Interesting case of anti-SRP-positive immune-mediated necrotizing myopathy with small cell lung carcinoma

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Introduction: Immune-mediated necrotizing myopathy (IMNM) is one of the idiopathic inflammatory myopathies. Disease subtypes are categorized based on antibodies: anti-HMGCR-positive IMNM, anti-SRP-positive IMNM, and seronegative IMNM. Diagnosing IMNM is based on clinical and muscle biopsy, including serologic studies.

Case presentation: We present a 59-year-old Thai woman with symmetrical proximal muscle weakness for two weeks with a high creatinine phosphokinase level (10716 U/L), Anti-HMGCR positive 1+ and Anti-SRP positive 2+. Chest high-resolution computed tomography was done to look for interstitial lung disease (ILD), which could be found in anti-SRP-positive IMNM. There was no evidence of ILD, but a 3.6 cm enlarged subcarinal lymph node was found. The transbronchial needle aspiration of the node revealed small cell carcinoma. Muscle biopsy showed mild to moderate scattered necrotic, degenerated and regenerating fibres. Sparse CD3+ and CD8+ T-cell lymphocytes without macrophage infiltration were found. P62 was positive in the sarcoplasm, with a diffuse fine granular pattern. MAC (C5b9) showed a sarcolemmal deposit. MHC I (HLA ABC), MHC II (HLA DR), MxA, and ubiquitin were all negative.

Discussion and conclusion: In the literature, seronegative IMNM is associated with malignancy. Nonetheless, the present case, SRP-positive-IMNM, was shown to have small cell carcinoma.

ABSTRACTS

[IAP-19] Pleomorphic hyalinizing angiectatic tumor: report of 2 cases

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Introduction: Pleomorphic hyalinizing angiectatic tumor (PHAT) of soft tissue is an extremely rare, non-metastasizing tumor with locally aggressive behavior. We herein present 2 cases of PHAT diagnosed in our department from 2016 to 2024.

Case Report:

Case 1: A 46-year-old female patient presented with solitary, slow growing lesion in left foot near Achilles tendon since 3 years. Grossly, a skin covered nodular mass measuring 7 x 6 x 4 cm was removed.

Case 2: A 48-year old male had a painless, exophytic swelling on medial aspect of left thigh for 20 years. Grossly a nodular skin covered mass was excised measuring 14 x 10 x 7 cm.

Microscopic examination showed unencapsulated lesion with infiltrative borders, comprising of spindle shaped cells arranged in fascicles having moderate eosinophilic cytoplasm and vesicular nuclei. Scattered markedly pleomorphic cells were seen. Ectatic, fibrin containing blood vessels with perivascular hyalinization, hemosiderin pigment and variable inflammatory cells were observed. Mitotic figures were rare. Immunohistochemical stain CD34 was positive while S-1oo, desmin and ASMA were negative. No recurrence was observed in both cases.

Discussion and Conclusion: PHAT mimics other benign and malignant tumors due to the histologic similitude. Therefore, recognizing this entity is essential to avoid misdiagnosis of the lesion.

ABSTRACTS

[IAP-20] Malignant transformation of primary mature teratoma of the small intestine: a case report

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Introduction: Mature teratomas are the most common ovarian germ cell tumors, accounting for about 20% of ovarian tumors. Teratoma-associated somatic malignancy was only found in less than 2%, which invasive squamous cell carcinoma being most common – accounting for about 80% follow by adenocarcinoma – representing for 7%. Primary intestinal teratomas are extremely rare and have been reported in only five cases without malignant transformation. Here we report a case of primary mature teratoma of the small intestine with synchronous squamous cell carcinoma and adenocarcinoma components.

Case presentation: A 49 year-old-man was admitted to our hospital due to chronic upper abdominal pain and postprandial vomiting persisting for 5–6 months. Enhanced abdominal computed tomography revealed a 8x8,5cm heterogeneous solid mass in the proximal jejunum, with an irregular thickened bowel wall, fat stranding and numerous enlarged lymph nodes. The clinical suspicion was an immature teratoma or liposarcoma. Histopathological examination demonstrated that tumor cells had invaded the submucosa layer, originating from squamous and gastrointestinal epithelium within mature teratoma.

Discussion and conclusion: We report a first case of malignant transformation of mature teratoma in the small intestine. Despite its exceedingly rare occurrence, these teratomas should be considered in the differential diagnosis against other pathologies.

ABSTRACTS

[IAP-21] Intrathyroid thymic carcinoma: case series and literature review

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Introduction: Intrathyroid thymic carcinoma (ITCA) is a rare malignancy tumor characterized by thymic differentiation within the thyroid gland. Most reported cases occur in Asia and with a slight predominance in females.

Case presentation: We present a case series involving three female patients to enhance understanding of this condition. Patient 1 is an 83-year-old woman, Patient 2 is a 39-year-old woman, and Patient 3 is a 36-year-old woman an unknown histological thymic lesion. All of three cases exhibited an irregular solid thyroid mass on sonography. Histological examination revealed epithelial tumor cell with nested growth pattern separated by bands of dense, hyalinized, and fibrous stroma. Immunohistochemical analysis revealed positivity for CD5, CD117, p63, while thyroglobulin, TTF1 were negative. Patient 1 had the shortest survival time and did not have chance to receive postoperative radiotherapy, whereas the other two patients did.

Discussion and conclusion: The diagnosis of ITCA is challenging due to nonspecific symptoms both clinically and on sonograph. Immunohistochemistry markers such as CD5, CK, CD117, p63, are helpful for confirmation the diagnosis. It is impossible to distinguish ITCA with metastasing thymic carcinoma in thyroid. Surgical excision is the best treatment option. Postoperative radiotherapy is usually used to reduce the recurrence rate.

ABSTRACTS

[IAP-22] An unusual clinical presentation of a histiocytic sarcoma: a case report

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Introduction: Histiocytic sarcoma is a rare, usually aggressive malignancy with features resembling macrophages. It can affect both lymph node or extranodal sites, often poses significant diagnostic challenges due to similarites with other neoplasms. We report a case of a nodal histiocytic sarcoma with an unusual indolent clinical behavior diagnosed after extensive workup.

Case Presentation: A 73-year-old female referred 2 years prior with a neck lump, initially suspected as malignant lymphoma or metastatic carcinoma. Histopathology and immunostains ruled out malignant lymphoma and carcinoma, suggesting a neoplasm with histiocytic differentiation or melanoma. Imaging revealed multiple lymphadenopathies without distant metastasis. A re-biopsy showed lymphoid tissue infiltrated by malignant cells with oval indented, vesicular chromatin, prominent nucleoli, eosinophilic cytoplasm. Immunohistochemical staining demonstrated positivity for CD68 and focal positivity for CD45 and CD30, and negativity for S100, CD1a, and CD23 leading to a diagnosis of histiocytic sarcoma. Despite the diagnosis, the patient's condition remained stable over the 2-year period without progression.

Discussion and conclusion: This case underpins the diagnostic challenges associated with histiocytic sarcoma, particularly in cases with an indolent clinical course. Accurate diagnosis relies on thorough evaluation, including differential diagnoses and immunohistochemical findings.

ABSTRACTS

[IAP-23] A comparative analysis of inflammatory markers on formalin-fixed and paraffin-embedded versus snap frozen muscle biopsies

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Background: Clinical data, laboratory profiles, and muscle biopsies are crucial for diagnosing inflammatory myopathy. Fresh frozen specimens are the gold standard, but their limited availability in resource-constrained countries potentially leading to underdiagnosis and inaccurate incidence. Although immunohistochemistry is more widely available, research using formalin-fixed and paraffin-embedded (FFPE) muscle tissue is still limited.

Objectives: This study aims to compare immunohistochemistry for inflammatory markers between FFPE muscle tissue and snap frozen specimens.

Materials and methods: Muscle samples from twenty patients were included [1 dermatomyositis, 1 inclusion body myositis, 2 overlapping myositis, 5 immune-mediated necrotizing myopathies, 9 unspecified myopathies, 1 facioscapulohumeral dystrophy, and 1 dysferlinopathy]. Five inflammatory markers - MHC-I, MHC-II, MAC, MxA, and p62 - were examined. Standard snap frozen samples served as the control, while FFPE muscle tissue was the experimental group.

Results: Equivalent staining patterns and intensities of MHC-II, MxA, and p62 were observed in both FFPE and frozen groups across all cases. No staining for MHC-I and MAC was detected in the FFPE group.

Discussion and conclusion: Successful immunolabeling of MHC-II, MxA, and p62 in FFPE group was achieved. Future research should focus on refining antigen retrieval techniques and exploring additional protocols to detect MHC-I and MAC in FFPE muscle tissue.

ABSTRACTS

[IAP-24] Potential value of CK7 and CK19 immunohistochemistry in evaluating cervical squamous precursor lesions: a tissue microarray (TMA) study

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Background: Cervical cancer is a common cancer in women, mostly induced by persistent high risk Human Papilloma Virus (HPV) infection.

Objectives: To assess CK7 and CK19 expression in HPV induced cervical epithelial lesions using tissue microarray (TMA).

Materials and Methods: A retrospective cohort study included females with cervical low-grade, high grade intraepithelial lesions and squamous cell carcinoma (LSIL, HSIL and SCC). TMA was constructed using cores of 3 mm diameter from 270 cases and 233 control tissues. CK7andCK19 immunohistochemistry was scored as negative or positive. Follow-up information was gathered.

Results: CK7 was negative in 85% LSILs and positive in 55% HSILs ($p<0.001$). CK19 showed positivity in 50% LSILs and 77% HSILs ($p<0.001$). For cases with follow-up data, 69% of CK7+ LSILs and 64% of CK7+ HSILs showed progression to higher grade lesions (CIN2 to CIN3 or to SCC). Nearly 66% of CK19+ LSILs progressed to HSIL whereas, 62% of CK19+ HSILs showed progression. LSILs with positivity for both markers progressed to HSIL in 70% of cases. Among 573 TMA spots, 503 were adequate (270 lesion, 233 control).

Discussion and conclusion: CK7 and Ck19 is significantly associated with HSIL. Lesions with positivity for both markers have higher chance of progression to higher grade lesions. Using TMA cores of wide diameter better represents tiny lesions.

ABSTRACTS

[IAP-25] Papillary renal neoplasm with reverse polarity, a histologic variant of papillary renal cell carcinoma: a case report

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Introduction: The entity "Papillary renal neoplasm with reverse polarity, PRNRP" was recognized as another pattern of papillary renal cell carcinoma (PRCC).

Case presentation: *A 71-year-old male presented with right renal calculi with acute pyelonephritis. CT of KUB system was performed and showed a well-defined enhancing solid mass at lower pole right kidney.*

A partial nephrectomy was performed and showed a firm tan mass measuring 2.8 x 2.8 x 2.8 cm. Cut sections revealed a well-circumscribed solid-cystic tan tissue with dark brown fluid without necrosis.

Histological examination revealed a well-circumscribed mass without encapsulation. There were branching papillae with thin fibrovascular cores, covered by monotonous cuboidal to columnar neoplastic cells with granular eosinophilic cytoplasm, smooth luminal borders, and apically located nuclei with occasional nuclear clearing and inconspicuous nucleoli.

Immunohistochemical studies revealed tumor positive for CK7, GATA3, and 34Beta-E12, and negative for P504S, vimentin, CD117, and Carbonic anhydrase IX.

Discussion and conclusion: PRNRP was another pattern of PRCC, characterized by distinctive histological pattern. With a distinct immunophenotype, this tumor was positive for GATA3, and negative for vimentin and P504S, unlike in clear cell renal cell carcinoma. This tumor had recurrent mutations of KRAS in many studies, differing from typical PRCCs.

ABSTRACTS

[IAP-26] Cytochrome p450 family 17 subfamily a member 1 (CYP17) gene polymorphism in prostate cancer patients

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Background: Prostate cancer is the second most frequent cancer and the fifth leading cause of cancer death in men. In Myanmar, according to Globocan 2018 data, prostate cancer is 1.2 % among all cancers and prostate cancer deaths reached 0.16% of total deaths. CYP17 gene polymorphism (-34 T/C) is one of the common genetic alterations in prostate cancer. It plays a key role in the aetiology of prostatic cancer. Detecting its gene polymorphisms may play as biomarkers for early detection and treatment of prostate cancer.

Objectives: To describe CYP17 gene polymorphisms in prostate cancer patients.

Materials and methods: This study was case-control study. Total 63 cases (21 cases of prostate cancer and 42 cases of benign prostatic hyperplasia) were selected from Yangon. CYP17 gene polymorphism was analyzed by using PCR-RFLP method.

Results: In the study, A2/A2 (CC) was the most commonly found genotype (47.6%) in prostate cancer patients (OR=20.14, 95% CI=7.38–48.74, p-value < 0.0001) and A1/A2 (TC) was the second most commonly found genotype (38.1%) (OR=2.28, 95% CI 1.1–4.58, p=0.0268).

Discussion and conclusion: CYP17 gene polymorphism (-34T/C) may give predictive marker for prostate cancer in high-risk men, and molecular-prediction for prostate cancer.

ABSTRACTS

[IAP-27] Frequency of incidental prostatic carcinoma in transurethral resection of the prostate specimens

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Background: Pathological evaluation of transurethral resection of the prostate (TURP) specimens is essential to confirm benign prostatic hyperplasia (BPH) and detect incidental prostate carcinoma (IPC). While IPC frequency in Western countries ranges from 14% to 19% but unknown in Thailand.

Objectives:

1) Report the frequency of IPC, including tumor percentage (TP) and Gleason grade group (GG).
2) Compare age, prostate-specific antigen (PSA), and specimen weight (SWt) between IPC and BPH cases.

Materials and methods: A prospective study from Thammasat University Hospital, recruited TURPs from November 1, 2023, to July 31, 2024. Entire specimens were submitted for histological analysis.

Results: Among 53 TURPs, 6 (11.3%) were IPC, with TP 1% to 30% and GG 1 and 5. Two IPCs with TP >5% were found in men aged 62 yr (TP 30% GG 5 SWt 2 g) and 82 yr (TP 10% GG 1 SWt 1 g). IPCs were older (79 vs 72, p 0.345), had lower PSA (2 vs 4 ng/mL, p 0.340), and significantly lighter SWt range (1-20 vs 2-135 g, p 0.021).

Discussion and conclusion: IPC is not uncommon in Thai men (11.3% from TURP). Submitting specimens weighing over 20 g for histologic analysis may not increase IPC detection.

ABSTRACTS

[IAP-28] Expression of PD-L1 in invasive urothelial carcinoma of the bladder in Vietnam

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Background: Invasive bladder cancer is a common malignant neoplasm with a poor prognosis. Recent years have seen the rise of immunotherapy as a promising treatment for advanced bladder cancer. PD-L1 has emerged as a potential biomarker for guiding treatment and patient selection for immunotherapy. However, the relationship between PD-L1 expression and clinical and histopathological factors in bladder cancer remains debated.

Objectives: To investigate PD-L1 (22C3) immunohistochemical expression and its associations with age, sex, and histopathological features of invasive urothelial carcinoma of the bladder.

Materials and methods: The study analyzed 107 cases of radical cystectomy for invasive urothelial carcinoma of the bladder at Binh Dan Hospital from 01/01/2020 to 30/06/2023. PD-L1 expression was assessed using immunohistochemical staining on a tissue microarray (TMA) and evaluated by the combined positive score (CPS).

Results: The positive PD-L1 expression rate was 21.5%. There were significant correlations between PD-L1 expression and histological subtypes (p=0.023), with higher rates in urothelial carcinoma with squamous differentiation. PD-L1 was also associated with invasion level (pT stage) (p=0.013) and lymph node metastasis (p=0.007). No significant relations were found with age, sex, histological grade, vascular or perineural invasion. Higher PD-L1 expression was observed in the high sTILs status group (p=0.032).

Discussion and conclusion: PD-L1 expression is present in about 20% of invasive urothelial carcinoma cases. It is more frequent in urothelial carcinoma with squamous differentiation, pT3 stage, lymph node metastasis, and high sTILs status. These patients may benefit from immunotherapy, though further research and clinical trials are needed.

ABSTRACTS

[IAP-29] The role of immunohistochemitry on histotype classification of ovarian carcinomas

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Background: The exclusive reliance on morphological features for the classification of ovarian carcinoma can lead to diagnostic challenges for pathologists. The application of immunohistochemistry (IHC) can significantly enhance the reliability of ovarian tumor classification, thereby facilitating more accurate treatment recommendations and prognostic assessments.

Objectives: To evaluate the role of immunohistochemical markers in the histopathological classification of ovarian carcinomas.

Materials and methods: A retrospective case series study of 57 patients diagnosed with ovarian carcinoma was conducted. Selected areas of each tumor were immunostained for WT-1, p53, PR, and Napsin A.

Results: Compared to the traditional histotype approach, the agreement for IHC-integrated histotype was high (kappa = 0.931), with 94.73% of tumors retaining their original primary histotype.

Discussion and conclusion: Type I carcinomas, including clear cell carcinoma and endometrioid carcinoma, were more prevalent than type II carcinomas (high-grade serous carcinoma). After incorporating IHC results, high-grade serous carcinoma could be reclassified as low-grade serous carcinoma, clear cell carcinoma, or endometrioid carcinoma. However, routine IHC is not generally recommended for histotype classification of ovarian carcinoma.

ABSTRACTS

[IAP-30] Clinicopathological features of mammary myofibroblastoma: a single institution case series

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Introduction: Mammary myofibroblastoma (MFB) is a rare, benign mesenchymal tumour of the breast having morphological and immunophenotypic characteristics of myofibroblasts. It predominantly affects postmenopausal women and older men. The present study describes a single-center experience of patients diagnosed with MFB between 2016 and 2024.

Case presentation: Twelve patients were diagnosed. 8 (66.6%) patients were female and 4 (33.3%) were males. Mean age of the patients was 55.3 years. 9 cases were excisional specimens while 3 were needle core biopsies. Mean tumor size was 6.28 cm. Histologic evaluation showed predominantly circumscribed neoplasm having spindled to epithelioid cells arranged in short intersecting fascicles with focal mature adipocytic component. Spindle cells had elongated, normochromatic nuclei. Hemangiopericytoma like to thick walled blood vessels with perivascular hyalinization were noted. 2 cases showed epithelioid morphology with focal infiltrative borders. Immunohistochemically, CD34, desmin and ASMA were positive in 10, 8 and 3 cases respectively.

Discussion and conclusion: MFB is a rare breast tumor and its epithelioid variant may pose diagnostic pitfall due to linear arrangement and fat infiltration. It should be included as a rare possibility in the differential diagnosis of circumscribed breast mass particularly in postmenopausal women and elderly men.

ABSTRACTS

[IAP-31] A clinicopathological study of 23 cases of subependymal giant cell astrocytoma at a tertiary care hospital

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Introduction: SEGA is typically associated with Tuberous Sclerosis Complex, characterized by benign tumors in multiple organs. Our study explores the clinicopathological features of SEGA in 23 cases diagnosed at AKUH between 2017-2024.

Case presentation: The age ranged from 6 to 37 years. Eighteen were male and 5 were female. The most common symptoms were headache and vomiting (39.13%) and, 3 patients presented with seizures. Intraventricular location was the most common site (82.60%), and 4 patients had space-occupying lesions (17.39%). Tumor cells were arranged in sheets with perivascular pseudorosettes in 9 cases. The cells were plump astrocytes with abundant pink cytoplasm. Ganglion-like cells with prominent nucleoli were seen in 14 cases. All cases showed positive expression of immunohistochemical stains GFAP and S-100. Follow-up data was available in 8 cases. Cortical and subcortical tubers and subependymal nodules were present in 2 patients. One patient developed ash leaf spots on the skin.

Discussion and conclusion: Our study reinforces the association between SEGA and TSC. Many patients presented with symptoms of increased intracranial pressure, underscoring the critical role of early detection and intervention. The risk of recurrence and potential for neurological impairment requires long-term follow-up, emphasizing the importance of a multidisciplinary approach in managing this condition.

ABSTRACTS

[IAP-32] Research on the correlation between ultrasound images and cytology of small thyroid nodules

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Background: The widespread application of ultrasound and fine-needle aspiration (FNA) in small thyroid nodules has led to the frequent detection of incidental nodules in the general population, creating a management challenge for physicians. This study aims to compare the diagnostic accuracy of ultrasound characteristics with FNA in identifying malignant thyroid nodules among small thyroid nodules.

Methods: This cross-sectional descriptive study involved patients with thyroid nodules who underwent ultrasound and FNA at Thong Nhat Hospital in 2023. Ultrasound evaluations were categorized using the TIRADS system, while thyroid cytology was classified based on the 2023 Bethesda system.

Results: The study included 827 patients with 1173 thyroid nodules, who underwent both ultrasound and FNA at Thong Nhat Hospital. Among the nodules classified as TIRADS 4 and 5, most had cytological diagnoses in Bethesda categories I, II, and III, with 164 cases (26.2%), and only 46 cases (7.4%) fell into categories IV, V, and VI. The TIRADS classification was significantly correlated with the Bethesda cytological classification for benign small thyroid nodules.

Discussion and conclusion: This study indicates that FNA of small thyroid nodules can produce inaccurate results and increase patient anxiety despite a low risk of malignancy. However, follow-up and repeat FNA should be considered when indicated to avoid missing malignant thyroid nodules.

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.

All studies involving animal or human subjects must abide by the rules of the appropriate Internal Review Board and the tenets of the recently revised Helsinki protocol. Hence, the manuscripts must include the name of the ethics committee that approved the study and the committee's reference number if appropriate.

6. Results

The Results section should concisely describe the findings of the study including, if appropriate, results of statistical analysis which must be presented either in the text or as tables and figures. It should follow a logical sequence. However, the description of results should not simply repeat the data that appear in tables and figures and, likewise, the same data should not be displayed in both tables and figures. Any chemical equations, structural formulas or mathematical equations should be placed between successive lines of text. The authors do not discuss the results or draw any conclusions in this section.

7. Discussion

The Discussion section should focus on the interpretation and the significance of the findings against the background of existing knowledge. The discussion should not repeat information in the results. The authors will clearly identify any aspects that are novel. In addition, there is the relation between the results and other work in the area.

8. Conclusion

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.

9. Acknowledgements

The Acknowledgements section should be any brief notes of thanks to the following:

- *Funding sources*
- *A person who provided purely technical help or writing assistance*
- *A department chair who provided only general support*
- *Sources of material (e.g. novel drugs) not available commercially*

Thanks to anonymous reviewers are not allowed. If you do not have anyone to acknowledge, please write "Not applicable" in this section.

10. References

The Vancouver system of referencing should be used in the manuscripts. References should be cited numerically in the order they appear in the text. The authors should identify references in text, tables, and legends by Arabic numerals in parentheses or as superscripts. Please give names of all authors and editors. The references should be numbered and listed in order of appearance in the text. The names of all authors are cited when there are six or fewer. When there are seven or more, only the first three followed by "et al." should be given. The names of journals should be abbreviated in the style used in Index Medicus (see examples below). Reference to unpublished data and personal communications should not appear in the list but should be cited in the text only (e.g. A Smith, unpubl. Data, 2000).

- *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.

11. Tables

The tables should be self-contained and complement, but without duplication, information contained in the text. They should be numbered consecutively in Arabic numerals (Table 1, Table 2, etc.). Each table should be presented on a separate page with a comprehensive but concise legend above the table. The tables should be double-spaced and vertical lines should not be used to separate the columns. The column headings should be brief, with units of measurement in parentheses. All abbreviations should be defined in footnotes. The tables and their legends and footnotes should be understandable without reference to the text. The authors should ensure that the data in the tables are consistent with those cited in the relevant places in the text, totals add up correctly, and percentages have been calculated correctly.

12. Figure Legends

The legends should be self-explanatory and typed on a separate page titled "Figure Legends". They should incorporate definitions of any symbols used and all abbreviations and units of measurement should be explained so that the figures and their legends are understandable without reference to the text.

If the tables or figures have been published before, the authors must obtain written permission to reproduce the materials in both print and electronic formats from the copyright owner and submit them with the manuscripts. These also follow for quotes, illustrations, and other materials taken from previously published works not in the public domain. The original resources should be cited in the figure captions or table footnotes.

13. Figures

All illustrations (line drawings and photographs) are classified as figures. The figures should be numbered consecutively in Arabic numerals (Figure 1, Figure 2, etc.). They are submitted electronically along with the manuscripts. These figures should be referred to specifically in the text of the papers but should not be embedded within the text. The following information must be stated to each microscopic image: staining method, magnification (especially for electron micrograph), and numerical aperture of the objective lens. The authors are encouraged to use digital images (at least 300 d.p.i.) in .jpg or .tif

formats. The use of three-dimensional histograms is strongly discouraged when the addition of these histograms gives no extra information.

14. Components

14.1. Letters to the Editor

The Letter to the Editor manuscripts consist of the following order:

- *Title Page*
- *Main Text*
- *References*
- *Table (if needed)*
- *Figure Legend (if needed)*
- *Figure (if needed)*

14.2. Original Articles

The Original Article manuscripts consist of the following order:

- *Title Page*
- *Structured Abstract*
- *Introduction*
- *Materials and Methods*
- *Results*
- *Discussion*
- *Conclusions*
- *Acknowledgements*
- *References*
- *Table (s)*
- *Figure Legend (s)*
- *Figure (s)*

14.3. Review Articles

The Review Article manuscripts consist of the following order:

- *Title Page*
- *Unstructured Abstract*
- *Introduction*
- *Main Text*
- *Conclusions*
- *Acknowledgements*
- *References*

- *Table (s)*
- *Figure Legend (s)*
- *Figure (s)*

14.4. Case Reports

The Case Report manuscripts consist of the following order:

- *Title Page*
- *Unstructured Abstract*
- *Introduction*
- *Case Description*
- *Discussion*
- *Conclusions*
- *Acknowledgements*
- *References*
- *Table (s)*
- *Figure Legend (s)*
- *Figure (s)*

14.5. Case Illustrations

The Case Illustration manuscripts consist of the following order:

- *Title Page*
- *Clinical Presentation or Description*
- *Laboratory Investigations*
- *Discussion*
- *Final Diagnosis*
- *Multiple Choice Questions (MCQs)*
- *Take-Home Messages (Learning Points)*
- *Acknowledgements*
- *References*
- *Correct Answers to MCQs*
- *Table (s)*
- *Figure Legend (s)*
- *Figure (s)*

14.6. Technical Notes

The Technical Note manuscripts consist of the following order:

- *Title Page*

- *Introduction*
- *Main text*
- *Conclusions*
- *Acknowledgements*
- *References*
- *Table (s)*
- *Figure Legend (s)*
- *Figure (s)*

Proofreading

The authors of the accepted manuscripts will receive proofs and are responsible for proofreading and checking the entire article, including tables, figures, and references. These authors should correct only typesetting errors at this stage and may be charged for extensive alterations. Page proofs must be returned within 48 hours to avoid delays in publication.

Revised Manuscripts

In many cases, the authors will be invited to make revisions to their manuscripts. The revised manuscripts must generally be received by the Editorial Board within 3 months of the date on the decision letter or they will be considered a new submission. An extension can sometimes be negotiated with the Editorial Board.

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Assistant Professor Dr Chetana Ruangpratheep
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Editor-in-Chief of Asian Archives of Pathology

ACADEMIC MEETINGS AND CONFERENCES

Announcements of academic meetings and conferences that are of interest to the readers of Asian Archives of Pathology (AAP) should be sent to the Editor-in-Chief at least 3 months before the first day of the month of issue. The contact information is shown below.

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