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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 “วารสารราชวิทยาลัยพยาธิแห่งประเทศไทย” 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 copy costs 450 baht for Thai authors and 30 United States dollars (USD) for international authors.

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ABSTRACT

[IAP-01] A study of the MRI and pathologic features of 66 cases of primary central nervous system lymphoma

Truong Phan Xuan Nguyen¹ and Thi Ngoc Ha Hua²

1. Department of Pathology, Cho Ray Hospital, Ho Chi Minh City, Vietnam

2. Department of Pathology, University of Medicine and Pharmacy, Ho Chi Minh City, Vietnam

Background and Objectives: Primary central nervous system lymphoma (PCNSL) was an uncommon variant of extranodal non-Hodgkin lymphoma. Contrast-enhanced MRI imaging was the method of choice for detecting PCNSL. The purpose was to describe the MRI and pathologic features of PCNSL and to determine whether there was a correlation between them. **Materials and Methods:** A series of 66 cases of PCNSL were diagnosed at the Department of Pathology, Cho Ray Hospital, from January 2016 to November 2018. **Results:** Sixty-six cases were immunocompetent, with a mean age of 55 ± 12 . The mono-focal lesion was predominant (77.27%). Basal ganglia and periventricular brain parenchyma were the most common sites of involvement (23.86%). The mean size was 3.80 ± 1.78 cm. The lesions were hyperintense on T1-weighted images (66.67%) and 89.39% hypointense on T2-weighted images. These patients had enhancing lesions (98.48%) and perifocal oedema (36.36%). Diffuse large B-cell lymphoma (DLBCL) was predominant in all the cases (72.24%). The vascular destruction pattern was present in a high proportion ($\chi^2, p < 0.05$). The correlations between the perivascular infiltrative pattern and vascular destruction was statistically significant (Fisher, $p < 0.05$). Corticoid usage before biopsy was related to necrosis (Fisher, $p < 0.05$). The solid-enhancing lesions were correlated with the density of the tumour (Fisher, $p < 0.05$). **Conclusion:** PCNSL is a rare tumour in the central nervous system. The vast majority of PCNSL have a B-cell origin, particularly DLBCL. In the proper clinical and radiologic setting, suggesting the diagnosis of PCNSL can help institute proper treatment in a timely fashion and avoid unnecessary attempts at surgical resection.

ABSTRACT

[IAP-02] Two types of malignant transformation in bilateral ovarian mature cystic teratoma: a very rare case

Eduardo Nel C. Oira, Joseph Antoine F. Chatto and Emelisa G. Almocera

Department of Pathology, Governor Celestino Gallares Memorial Hospital, Tagbilaran City, Bohol, Philippines

Background: Malignant transformation (MT) arising from the mature cystic teratoma (MCT) is a rare occurrence, comprising about 1% – 3% of all documented MCTs. The majority of MT cases are squamous cell carcinoma, followed by adenocarcinoma, then neuroendocrine neoplasm. Bilateral ovarian MCT with both MTs of different types is extremely rare. This is the first documented case in the Philippines. **Case Presentation:** A 54-year-old female presented with a three-month gradually enlarging abdomen. Initial preoperative diagnoses were right ovarian new growth and left dermoid cyst. The patient underwent a total abdominal hysterectomy with bilateral salpingo-oophorectomy that revealed bilateral ovoid, solid cystic ovarian masses containing hair and sebum. Microscopically, two distinct MTs were noted in both ovarian MCTs: well-differentiated neuroendocrine tumour (NET) in the right and well-differentiated squamous cell carcinoma on the left. The NET showed a trabecular growth pattern and expressed synaptophysin and CD56. **Discussion and Conclusion:** Malignant transformation of MCTs is indeed a very rare phenomenon, mostly diagnosed postoperatively. Hence, thorough morphologic studies under light microscopy supported by immunohistochemistry are very significant for a correct diagnosis. The core management is surgical excision. Due to its uniqueness, further data gathering is needed to better understand the process of MT in bilateral ovarian MCT.

ABSTRACT

[IAP-03] Primary appendiceal leiomyosarcoma presenting as an acute appendicitis: a case report

Alexis Leo B. Clapis¹, Emelisa G. Almocera¹ and Annette L. Salillas^{1,2}

1. Department of Pathology, Governor Celestino Gallares Memorial Hospital, Tagbilaran City, Bohol, Philippines

2. Matias H. Aznar Memorial College of Medicine, Cebu City, Cebu, Philippines

Background: Tumours primarily arising from the appendix are not common, comprising only 0.9% - 1.4% of all documented appendectomies. Among all appendiceal neoplasms, the majority of cases are of well-differentiated neuroendocrine tumours. Appendiceal leiomyosarcomas are rare, with only a few cases reported. Thus, the diagnosis and management of this tumour are based on the behaviour of the leiomyosarcoma of the colon.

Case Presentation: A 60-year-old man presented with persistent right lower quadrant abdominal pain radiating to the epigastric area for a duration of one week associated with loss of appetite. The right hemicolectomy specimen showed an irregular lobulated, tan-brown, firm appendiceal mass, measuring 8 x 7.5 x 5 cm. The cut section revealed a variegated solid surface with haemorrhagic and necrotic foci. Microscopy showed highly cellular tumour composed of spindle-shaped neoplastic cells arranged in fascicular and whorling patterns. The tumour cells have ovoid to elongate hyperchromatic nuclei, indistinct nucleoli and scant eosinophilic cytoplasm. Necrosis, haemorrhage and brisk mitotic activity were also evident. Immunohistochemical staining showed strong reactivities to SMA and desmin and negative stainings for DOG1, CD117, S-100, and pan-cytokeratin. **Discussion and Conclusion:** Appendiceal neoplasms are uncommon, even more so for mesenchymal malignancies, with sarcomas comprising only < 1% of all appendiceal tumours. Diagnostic evaluation is through light microscopy and immunohistochemistry. As with any soft tissue sarcoma, the mainstay management is surgical excision and an en bloc excision of contiguously affected viscera with tumour-negative margins. Having only a few cases documented worldwide, more data are required to better understand this rare tumour.

ABSTRACT

[IAP-04] Stillbirth classification by the International Classification of Diseases for Perinatal Mortality (ICD-PM) using stepwise analysis: a study from a teaching hospital in Thailand

Mana Taweevisit^{1,2}, Panachai Nimitpanya^{2,3} and Paul Scott Thorner^{1,4}

1. Department of Pathology, Faculty of Medicine, Chulalongkorn University, Thailand

2. King Chulalongkorn Memorial Hospital and Thai Red Cross Society, Thailand

3. Department of Obstetrics and Gynaecology, Faculty of Medicine, Chulalongkorn University, Thailand

4. Department of Pathology and Laboratory Medicine, Hospital for Sick Children and University of Toronto, Canada

Background and Objectives: The International Classification of Diseases for Perinatal Mortality (ICD-PM) coding was introduced in 2016 as a global system for reporting causes of perinatal death. The aim of this study was to classify stillbirths by the ICD-PM, comparing input from clinical data, placental pathology, and autopsy results. **Materials and Methods:** All autopsy reports at King Chulalongkorn Memorial Hospital over a 20-year period (2001 – 2020) were reviewed. Causes of stillbirth were analysed in a stepwise manner: step 1 clinical history and laboratory results; step 2 placenta pathology; and step 3 autopsy, and they were classified at each step according to the ICD-PM. **Results:** There were 330 cases (126 antepartum and 204 intrapartum deaths). Step 1 identified a cause in 176 (86%) intrapartum deaths and 64 (51%) antepartum deaths. The addition of placental pathology (step 2) changed the cause of death in 12% of cases, with causes now identified in 190 (93%) intrapartum and 89 (71%) antepartum deaths. Adding step 3 did not identify any additional causes of death. The most common category for antepartum death was ‘antepartum hypoxia’ and ‘congenital malformations’ for intrapartum death. **Conclusion:** Placental pathology made a significant difference in assigning causes of death in our series. Then, placental examination is important in stillbirths. Determination of the cause of death based on clinical history and laboratory data alone may be inaccurate and less useful for comparative studies between different regions and long-term planning in prenatal care.

ABSTRACT

[IAP-05] Fatal spontaneous intraluminal intestinal haematoma: a paediatric case report

Mana Taweewisit^{1,2} and Paul Scott Thorner^{1,3}

1. Department of Pathology, Faculty of Medicine, Chulalongkorn University, Thailand

2. King Chulalongkorn Memorial Hospital and Thai Red Cross Society, Thailand

3. Department of Pathology and Laboratory Medicine, Hospital for Sick Children and University of Toronto, Canada

Background: Disseminated intravascular coagulation (DIC) is the excessive activation of the coagulation pathway with thrombus formation, progressing to a consumptive coagulopathy with an imbalance between the fibrinolytic and antifibrinolytic systems, resulting in uncontrolled haemorrhage. Sepsis is the most common condition associated with DIC, usually manifesting as diffuse bleeding, commonly involving the gastrointestinal tract. However, intraluminal intestinal haematoma leading to obstruction is rare, and such patients usually improve with management. We report what we believe is the first case of a fatal intraluminal intestinal hematoma in an infant with DIC. **Case Presentation:** An 11-month-old boy was admitted to the intensive care unit with pneumonia and severe respiratory distress syndrome associated with septic shock and DIC. Ten days after admission, a 10 cm abdominal mass was detected in the right lower quadrant. Ultrasound showed a markedly thickened and oedematous bowel wall, interpreted as severe acute enterocolitis. The patient died two days later. At autopsy, there was generalised bowel distension with an intraluminal haematoma extending from the jejunum to the ascending colon. No point of bleeding could be identified. There was a perforation in the terminal ileum at a site of transmural necrosis, considered to be secondary to pressure ischaemia from the haematoma. **Discussion and Conclusion:** Spontaneous intraluminal haematoma is a rare cause of small bowel obstruction. Patients with DIC are at risk for this event, and the smaller bowel lumen in children makes them especially at risk for obstruction. Prompt recognition of this condition is crucial for a successful patient outcome.

ABSTRACT

[IAP-06] Excess subchorionic fibrinoid deposition as another variant of maternal floor infarct/massive perivillous fibrin deposit

Mana Taweewisit^{1,2}

1. Department of Pathology, Faculty of Medicine, Chulalongkorn University, Thailand

2. King Chulalongkorn Memorial Hospital and Thai Red Cross Society, Thailand

Background: Maternal floor infarction (MFI) and massive perivillous fibrin deposition (MPFD) are placental disorders of unknown aetiology associated with adverse obstetric outcomes. Its morphology is characterised by a marked increase in perivillous fibrinoid deposition in the intervillous space. The distribution of such fibrinoid deposition in MFI and MPFD often overlaps, suggesting both conditions represented the final common pathway for a number of different insults. **Case Presentation:** We describe a 31-year-old mother diagnosed with immune thrombocytopenia who delivered a normal female neonate. She delivered at term, whose weight was appropriate for gestational age, with a placental weight of < 10th percentile. Placenta examination showed MPFD with excessive subchorionic perivillous fibrinoid deposit, the morphology of which has never been reported. The chorionic plate of the placenta showed confluent, firm, gray-white areas. These areas formed a thick rind over the chorionic plate measuring up to 4 mm, with vertical extension into the placental parenchyma in a serpiginous appearance. Such the gray-white lesion accounted for approximately 30% of the total placental volume, with some areas of basal plate involvement. The histology revealed obliteration of the intervillous space by amorphous eosinophilic fibrinoid material corresponding to the gray-white areas observed grossly. The c4d immunohistochemistry was positive in most placental villi in a linear pattern along the syncytiotrophoblastic layer. **Discussion and Conclusion:** To our knowledge, the appearance of excessive subchorionic perivillous fibrinoid deposits has never been reported, and it is considered to be another morphologic variation of MFI/MPFD. The immunologic reaction was presumably involved in pathogenesis.

ABSTRACT

[IAP-07] Clinicopathological evaluation of transurethral resection of prostate in Sri Lankan setting

Lalani De Silva¹, Sinha De Silva², Harshima Wijesinghe¹, Gayani Ranaweera¹, Priyani Amarathunga¹, Niranthi Perera¹ and Chandu De Silva¹

1. Department of Pathology, Faculty of Medicine, University of Colombo, Sri Lanka

2. Postgraduate Institute of Medicine, University of Colombo, Sri Lanka

Background and Objectives: Transurethral resection of the prostate (TURP) is the primary surgical treatment modality for lower urinary tract obstructions due to prostatomegaly. The objective was to describe the clinical and histopathological features of TURP specimens handled by a tertiary-care centre in Sri Lanka. **Materials and Methods:** The sample included were all the TURP specimens received over six months at our centre. Clinicopathological characteristics were studied and analysed by descriptive statistics. **Results:** One hundred and twelve TURP specimens were included. Age ranged from 50 – 90 years, with a mean age of 68.3 years (SD = 8.2 years). The commonest clinical presentation was poor flow (49.1%, n = 55), followed by acute urinary retention (22.3%, n = 25), hesitancy (9.8%, n = 11), urgency (5.4%, n = 6) and haematuria (5.4%, n = 6). The average duration of clinical symptoms was 2.17 years (SD = 3.3 years). The majority had BPH (78.6%, n = 88). 25% (n = 22) of them had inflammatory changes. Twenty-four (21.4%) were malignant, of which 22 (91%) had acinar adenocarcinoma, two had combined acinar adenocarcinoma and ductal carcinoma, and one had neuroendocrine differentiation. The most common Gleason pattern was Pattern-5 (41.6%), followed by Pattern-4 (37.5%) and Pattern-3 (20.8%). The commonest WHO/ISUP-grade group was 5 (62.5%), followed by 3 (12.5%), 2 (12.5%), 1 (8.3%) and 4 (4.2%) in descending order. Tumour extent ranged from 1% to 95%, and 54.2% had a tumour extent of more than 80%. Perineural invasion, vascular invasion, and PIN were present in 41.7% (n=10), 8.3% (n=2), and 16.7% (n=4), respectively. Serum PSA level ranged from 1.07 – 1,100 ng/dL. The mean PSA value of BPH was 26.99 ng/dL (SD = 73.38 ng/dL), and of carcinoma was 135.45 ng/dL (SD = 69.42 ng/dL). PSA value was not a good marker for detecting malignancy as analysed by the ROC curve [AUC was 0.68 (95% CI = 0.49 – 0.87)] with $p = 0.054$. **Conclusion:** The majority of the TURP was having BPH. Though rare, most of the malignancies detected were of high grade and had a high tumour burden.

ABSTRACT

[IAP-08] An audit on histopathology reporting of transurethral resection of prostate in a tertiary care centre in Sri Lanka

Lalani De Silva¹, Sinha De Silva², Harshima Wijesinghe¹, Gayani Ranaweera¹, Priyani Amarathunga¹, Niranthi Perera¹ and Chandu De Silva¹

1. Department of Pathology, Faculty of Medicine, University of Colombo, Sri Lanka

2. Postgraduate Institute of Medicine, University of Colombo, Sri Lanka

Background and Objectives: Transurethral resection of the prostate (TURP) is offered for men with lower urinary tract symptoms secondary to benign prostatic hyperplasia (BPH). Our objective was to audit the quality of reporting TURP specimens handled by a tertiary-care centre in Sri Lanka. **Materials and Methods:** Specimen request forms and finalised reports on TURP specimens received over six months (1 July to 31 December 2019) were reviewed, and compliance with the standards in the dataset for reporting prostate tissue of the Royal College of Pathologists, United Kingdom, was recorded. **Results:** Reports of 112 TURP specimens were reviewed. Patient identification details were complete in all the cases. The indication for biopsy was mentioned in 98.2%. Digital rectal examination (DRE) findings and PSA levels were mentioned in 51.7% and 36.6%, respectively. Dimensions of chips were measured in all. Weight was measured in 78.6%. The equal or excess number of cassettes, according to the weight, was embedded in 67%. All tissues were embedded from clinically malignant prostates. The majority had BPH (78.6%, n = 88), and 21.4% (n = 24) were malignant. In malignant reports, tumour type, grade, and extent were complete in 100%. The grade group and perineural invasion were mentioned in 91.7%. The presence of PIN and vascular invasion were reported in 75% and 50%, respectively. Bladder neck invasion and tumour stage were rarely reported. **Conclusion:** Most of the clinical and microscopic data were satisfactory. Deficiencies were identified in providing DRE findings, PSA and recording weight. Awareness of complete clinical, radiology, and serological findings is the cornerstone of accurate histopathology reporting, and the importance of providing such information in the requests should be emphasised.

ABSTRACT

[IAP-09] Metastasis of primary breast undifferentiated pleomorphic sarcoma to the lung mimicking adenocarcinoma on cytology: a case report

Auliya Suluk Brilliant Sumpono^{1,2}, Vivin Febriani^{1,2} and Irianiwati Widodo^{1,2}

1. Department of Anatomical Pathology, Faculty of Medicine, Public Health, and Nursing, Universitas Gadjah Mada, Yogyakarta, Indonesia
2. Dr Sardjito Hospital Special Region of Yogyakarta, Indonesia

Background: Undifferentiated pleomorphic sarcoma (UPS) constitutes less than of all sarcomas in adults. UPS dissemination usually occurs haematogenously. Lungs are the primary organs for metastasis. We herein present a patient with UPS of the breast with lung metastases after 12 years. Cytological diagnosis of the lung mass is extremely challenging because it can mimic primary adenocarcinoma of the lung. **Case Presentation:** A 58-year-old woman was referred to our hospital because she had dyspnoea for more than one month. She had a history of primary breast undifferentiated pleomorphic sarcoma 12 years ago. CT scan showed a mass in the lung that extends to the mediastinum. Fine needle aspiration with CT scan guidance was performed. Cytology and cell block showed clustered and sheet-like cells, some of which were arranged in a tubular pattern. The slides contained polymorphic cells with oval and round nuclei and a slightly vacuolated cytoplasm. We initially diagnosed it as an adenocarcinoma of the lung. Furthermore, immunohistochemical staining was carried out with the following results TTF1 (-), Napsin A (-) and Vimentin (+). We concluded that the fine needle aspiration of the lung mass indicated metastasis of primary breast undifferentiated pleomorphic sarcoma. **Discussion and Conclusion:** On cytology examination, UPS shows single cells to large storiform fragments. The cells are spindle, plasmacytoid and pleomorphic (often multinucleated) with varying nuclear morphology. In this case, we encounter different patterns and cell morphology. Cytological diagnosis in this case requires caution. The history of previous examinations and immunohistochemical examination on fine needle aspiration cytology will be very helpful in establishing the diagnosis.

ABSTRACT

[IAP-10] Subcutaneous panniculitis-like T-cell lymphoma in paediatric population: a report of two cases and literature review

Anh Thu Phan Dang¹, Mai Anh Nguyen Hoang² and Tuan Dung Vu¹

1. Department of Pathology, Faculty of Medicine, University of Medicine and Pharmacy at Ho Chi Minh City, Ho Chi Minh City, Vietnam

2. Department of Haemato-Oncology, City Children's Hospital, Ho Chi Minh City, Vietnam

Background: Subcutaneous panniculitis-like T-cell lymphoma (SPTCL) is a rare entity of mature $\alpha\beta$ cytotoxic T-cells commonly found in young adults. We reported two cases of SPTCL occurring in the paediatric age group. **Case Presentation:** Two boys (12 and 14 years old) were admitted to the hospital with a fever of unknown origin for over one month. They had multiple painless erythematous subcutaneous plaques and deep-seated skin nodules, ranging from 0.5 – 8 cm in diameter. The evidence of lupus erythematosus was not found. The skin biopsies showed the infiltration of a composition of small- to medium-sized lymphoid cells and histiocytes in the subcutaneous adipose tissue with the background of fat necrosis, karyorrhexis and histiocytes; which spared the dermis, epidermis and septa between adipose lobules. Lymphocytes rimmed adipocytes and exhibited nuclear hyperchromasia and contour irregularity. By immunohistochemistry, these lymphoid cells showed strong positivity for CD3, CD8 and negativity for CD4, CD56. A hotspot of Ki-67 expression was helpful for the diagnosis of SPTCL. Bone marrow involvement was not found in both cases. However, one patient presented with an aggressive clinical course with the presence of haemophagocytic lymphohistiocytosis. **Discussion and Conclusion:** SPTCL diagnosis is challenging, especially in the early stages, as the symptoms may mimic other conditions like eczema or lupus erythematosus panniculitis. Therefore, a thorough clinical investigation and histology examination are helpful in diagnosis. Lymphocytes rim adipocytes and immunohistochemical expression for mature $\alpha\beta$ cytotoxic T-cells can be a clue for SPTCL diagnosis. High Ki-67 expression is also concerning for lymphoma.

ABSTRACT

[IAP-11] Haemangiopericytoma of the pineal region: report of a rare case in unusual location

Lerpong Chaimanun¹, Jaturong Khamtha¹, Worakanya Thongnuch¹, Kullapat Veerasarn¹, Sirirat Khunvutthidee² and Samasuk Thammachantha³

1. Department of Neurosurgery, Neurological institute of Thailand (NIT), Bangkok, Thailand

2. Department of Radiology, Neurological institute of Thailand (NIT), Bangkok, Thailand

3. Department of Pathology, Neurological institute of Thailand (NIT), Bangkok, Thailand

Background: Intracranial hemangiopericytoma (HPC) is a rare non-meningothelial mesenchymal tumour which derives from malignant transformation of pericytes. It has been accounting for 0.4% of all intracranial tumours. Primary HPC in the pineal region has been rarely reported. Here we report a rare case of the pineal HPC. **Case Presentation:** A 55-year-old female presented with one-month history of ataxia. Neurological examination revealed full motor power and intact sensation. There was an absence of abnormal reflex. Cranial nerve and other physical examination were not remarkable. Magnetic resonance imaging (MRI) showed a lobulated enhancing pineal mass, which compressed tectal plate, produced mild hydrocephalus. Pineal meningioma and pineal parenchymal tumour were in the differentials. Subtotal surgical resection of the tumour showed a well-defined firm greyish white mass. Microscopic findings revealed patternless architecture of spindle cells with round to ovoid nuclei. There are stromal collagen deposition and thin-walled branching vessels. Absence of mitotic figure and necrosis. Immunohistochemistry showed diffuse and strong nuclear expression of STAT-6 in tumour cells. They were also positive for CD34, but negative for epithelial membrane antigen (EMA), somatostatin receptor-2a (SSTR-2a), glial fibrillary acidic protein (GFAP), synaptophysin, S-100, smooth muscle actin and desmin. **Discussion and Conclusion:** HPC is rarely encountered in pineal region. It can mimic meningioma in both clinical and radiographic presentations. Histopathological study is the gold standard for definite diagnosis. Treatment of choice is surgical resection. Adjuvant radiotherapy reduces local recurrence in malignant HPC (mitosis > 4/10 HPFs). In conclusion, HPC is more invasive than meningioma biologically. Pathologists must be aware of HPC in this unusual location.

ABSTRACT

[IAP-12] Integrating analysis of the expression of IDO1 and TDO2 in bladder cancer

Thanh Tu Nguyen, Quoc Thang Pham, Thao Quyen Nguyen, Duc Tung Luu, Thi Nhu Diem Pham, Thi Thanh Tam Bui, Thanh Tu Duong, Dang Anh Thu Phan, and Quoc Dat Ngo

Department of Pathology, University of Medicine and Pharmacy, Ho Chi Minh City, Vietnam

Background and Objectives: Several lines of evidence have been focused on the roles of tryptophan metabolism genes like indoleamine 2,3-dioxygenase 1 (IDO1) and tryptophan 2,3-dioxygenase (TDO2) in bladder cancer progression. However, the alternative way of targeting in cancer immunotherapy has not yet been investigated in bladder cancer. **Materials and Methods:** We explored and validated the clinicopathological significance and the correlation with immune infiltrates of IDO1 and TDO2 expression in bladder cancer using Bladder urothelial carcinoma (BLCA) and other Gene Expression Omnibus (GEO) datasets download from <https://xenabrowser.net/> and <https://www.ncbi.nlm.nih.gov/geo/>. The correlation between IDO1, TDO2 expression and the immune infiltrates as well as PD-L1 gene expression in BLCA dataset was explored with TIMER2.0, <http://timer.comp-genomics.org/>. **Results:** We figured out the overexpression of IDO1 and TDO2 in basal type compared with other molecular subtypes in BLCA. P53 and RB1 mutations were associated with upregulation of IDO1 and TDO2 expression whereas FGFR3 mutation was associated with downregulation of IDO1 and TDO2 expression. IDO1 and TDO2 expression were significantly correlated with purity and immune cell infiltrates, including CD8⁺ - T cells, CD4⁺ - T cells, B cells, neutrophils and macrophages as well as myeloid dendritic cells. Interestingly, TDO2 were positively correlated with cancer-associated fibroblasts (CAFs) ($p = 0.5$, $p = 1.14 \times 10^{-24}$). PD-L1 expression was also correlated with IDO1 ($p = 0.64$, $p = 4.42 \times 10^{-49}$) and TDO2 expression ($p = 0.42$, $p = 5.01 \times 10^{-19}$). **Conclusion:** Our results pointed out that IDO1 and TDO2 play an essential role in regulating the tumor microenvironment as well as immune tolerance in bladder cancer. Suggesting that IDO1 and TDO2 might be a promising novel immunotherapy target for bladder cancer patients.

ABSTRACT

[IAP-13] Malignant pigmented epithelioid angiomyolipoma of the kidney in a child with tuberous sclerosis: a rare case report and literature review

Dang Anh Thu Phan¹, Thuy Nhi To² and Thi Nhu Diem Pham¹

1. Department of Pathology, University of Medicine and Pharmacy at Ho Chi Minh City, Vietnam

2. Children's Hospital 2, Ho Chi Minh City, Vietnam

Background: Pigmented epithelioid angiomyolipoma is a rare variant of epithelioid Angiomyolipoma (EAML), a part of the family of the perivascular epithelioid cell neoplasms (PEComas) with malignant potential. We reported one case of EAML occurring in the paediatric age group. **Case Presentation:** A 15-year-old boy was hospitalised because of haematuria and a rapidly enlarged abdomen with a tuberous sclerosis complex (TSC) history. The CT scan revealed a large mass in the right kidney and a nodule in the left lung. The right radical nephrectomy showed a tumour of 21 cm with a yellow cut surface and huge haemorrhagic and necrosis areas. Microscopically, the tumour was characterised by epithelioid cells with high-grade atypia, large nuclei, prominent nucleoli and eosinophilic cytoplasm with scattered melanin pigment. A focal area of spindle cells around numerous vascular channels and lipomatous tissues was observed. By immunohistochemistry, the epithelioid cells were labelled for HMB45 but not for actin and the opposite of the spindle cells. Both neoplastic cells were weakly positive for CD68 and negative for synaptophysin, cytokeratin, vimentin, CD10 and EMA. **Discussion and Conclusion:** TSC-associated EAML is commonly found at a younger age and shows more aggressive behaviour. With the morphology of eosinophilic to clear epithelioid cells and melanin pigment, pigment EAML should be distinguished from malignant melanoma, pigmented clear cell renal cell carcinoma, and paraganglioma. The cellular reaction with HMB-45 but no expression with cytokeratin, vimentin, S100, synaptophysin, CD68 are helpful for the diagnosis. Tumour size, nuclear atypia, mitoses, necrosis, lymphovascular invasion are critical factors for predicting behaviour.

ABSTRACT

[IAP-14] Post-chemotherapy histiocyte-rich pseudotumour involving the pancreas

Thu D.A. Phan¹, Thao T.P. Ho², An T.T. Dao^{2,3} and Hieu T. Le¹

1. Department of Pathology, Faculty of Medicine, University of Medicine and Pharmacy at Ho Chi Minh City, Ho Chi Minh City, Vietnam
2. Department of Haemato-Oncology, Children's Hospital 2, Ho Chi Minh City, Vietnam
3. Department of Paediatrics, Faculty of Medicine, University of Medicine and Pharmacy at Ho Chi Minh City, Ho Chi Minh City, Vietnam

Background: Histiocyte-rich pseudotumour (HPRT) developing post-chemoradiation therapy is a rare benign reaction. Although benign, it can clinically and radiologically mimic residual tumours or recurrent/relapsed disease, causing challenges in management. **Case Presentation:** A 9-year-old boy presented with abdominal pain, weight loss for a week. CT scan revealed a solid, heterogeneous, ill-defined mass originated from the pancreas. We found the tumor invading the omentum and small intestine during surgery and resected these involved organs. The patient was diagnosed with Diffuse Large B-Cell Lymphoma (DLBCL), risk group B, and initiated chemotherapy based on LMB89 protocol. CT scan showed the incomplete response to treatment with the residual mass when the patient completed the first cycle of the third phase, so he was re-stratified into risk group C to initiate the other regimen. After the third phase, the patient underwent the second surgery to resect the pancreas tumour. The tumour exhibited a xanthogranulomatous appearance with central necrosis surrounded by loose oedematous fibrous tissue, numerous foamy macrophages, small lymphocytes, and no residual tumour cells. This pathological pattern was consistent with post-chemotherapy HPRT. The patient kept on receiving treatment with the LMB89 protocol at the maintenance phase. **Discussion and Conclusion:** Despite sensitivity in assessing residual mass, a CT scan is less helpful in the differential diagnosis between residual tumour and necrotic mass. An excisional biopsy is of importance to confirm the diagnosis of post-chemotherapy HPRT and exclude other neoplasms. Awareness of this entity is needed to avoid misdiagnosis or overtreatment of the residual mass following chemotherapy.

ABSTRACT

[IAP-15] Paediatric gastric adenocarcinoma: two case reports and literature review

Thu D.A. Phan¹, Nhu T.Q. Nguyen² and Quynh P. Bui¹

1. Department of Pathology, Faculty of Medicine, University of Medicine and Pharmacy at Ho Chi Minh City, Ho Chi Minh City, Vietnam
2. Department of Haemato-Oncology, Children's Hospital 2, Ho Chi Minh City, Vietnam

Background: Paediatric gastric adenocarcinoma (GAC) is an extremely rare with limited relevant data. Until now, the clinical presentation and outcome have not yet been thoroughly understood. **Case Presentation:** Two boys (10 and 14 years old) were admitted to hospital with severe malnutrition. Abdominal CT demonstrated the tumour protruding into stomach, irregular border, peritoneal metastasis. Gastric biopsies showed pleomorphic cells along with variable size and increased N/C ratio. These cells arranged into sheet growth pattern, cluster of cells or uncomplete tubules with neutrophils infiltrating. The malignant cells showed strong expression of CK and negativity for CD99, NSE, myogenin, CD3, CD20, ALK and CD30. Both cases were consistent with poorly differentiated gastric adenocarcinomas, diffuse type with lymphovascular invasion. **Discussion and Conclusion:** Paediatric GAC presented with more advanced stage and poorly differentiation. However, the clinical presentation is similar to adult GAC. Because of data limitation, the diagnosis and treatment of paediatric GAC remains a significant challenge. Additional molecular investigations including E-cadherin or HER2 testing of the tumour samples may offer more choices of treatment for these patients.

ABSTRACT

[IAP-16] Characterisation of genomic alteration of FGFR3 by integrating analysis of the Cancer Genome Atlas

Thao Quyen Nguyen, Quoc Thang Pham, Thanh Tu Nguyen, Trong Hieu Le, Tuan Dung Vu, Thi Thanh Tam Bui, Thanh Tu Duong, Dang Anh Thu Phan and Quoc Dat Ngo

Department of Pathology, University of Medicine and Pharmacy at Ho Chi Minh City, Vietnam

Background and Objectives: Mutations and fusions of the fibroblast growth factor receptor (FGFR) gene family occur in various cancer types. Recently erdafitinib has been approved by the FDA for the treatment of FGFR3-altered urothelial cancer. We performed an integrated analysis of the TCGA-pancancer atlas including 32 cancer types (n = 10,953) to reveal the novel alteration of FGFR3. **Materials and Methods:** To clarify FGFR3 alterations we performed an analysis on the server <https://www.cbioportal.org/>. The FGFR3 alterations and clinicopathologic data were also downloaded for further investigation. We used the CellMiner-web-server <https://discover.nci.nih.gov/cellminerfdb/> with the NC-60 and GDSC cancer cell line database to validate the cytotoxicity of FGFR3 inhibitors. **Results:** FGFR3 alterations were found in 351 (3%) of queried patients of which amplification, mutations and rearrangements were 120 (34.2%), 172 (49%) and 38 (10.8%), respectively. Seventy-one (41.3%) of FGFR3 mutations were putative-driver missense mutations in which the most frequent were FGFR3 p.S249C (57.7%) and Y373C/H (15.5%). FGFR3-TACC3 was the most prevalent FGFR3 rearrangement (84.2%). Tumour types with the most frequency of FGFR3 alterations were bladder (32.5%) and endometrial (10.6%) cancer. The cytotoxicity of FGFR3 inhibitors (AZD-4547, PD173074) was found negatively correlated with FGFR3 expression across the NC-60 database. Focus on the endometrial carcinoma cell lines of GDSC tested with PD173074 showed negative correlation between FGFR3 expression and response to PD173074. **Conclusion:** FGFR3 alterations are present at low frequencies and consistency across many cancers. Bladder and endometrial cancers were the highest frequency detections of the FGFR3 alterations. In-silico analysis revealed FGFR3 may be a pivotal targeted therapy in endometrial cancer.

ABSTRACT

[IAP-17] Primary malignant melanoma of the lung: a case report of a very rare neoplasm occurring in young patient

Thu D.A. Phan and Tung D. Luu

Department of Pathology, Faculty of Medicine, University of Medicine and Pharmacy at Ho Chi Minh City, Ho Chi Minh City, Vietnam

Background: Primary malignant melanoma of the lung (PMML) is rare, with limited published reports. This case report discussed the diagnosis and management of a PMML occurring in a young patient and reviewed existing literature. **Case Presentation:** A 35-year-old male patient incidentally detected a tumour along the left aspect of the pericardium on X-rays without any symptoms. CT scan showed a well-circumscribed and lobulated tumour in the middle mediastinum with 7 x 4.5 x 4 cm. No other lesions were detected. The neoplasm consisted of polygonal cells with clear cytoplasm, atypical nuclear, melanin deposits and haemosiderin-laden macrophages. Tumour cells showed strong positivity of HMB45 and vimentin but no reaction with CK, actin, CD34 and synaptophysin. Morphology and immunohistochemical findings were consistent with malignant melanoma of the lung. **Discussion and Conclusion:** Primary melanoma in the lung is sporadic and can mimic lung cancer clinically and pathologically. If the tumour is amelanotic, the diagnosis is challenging and easily misdiagnosed as other lung carcinomas. HMB45 and vimentin are helpful to diagnose such immunophenotypic variations of melanoma.

ABSTRACT

[IAP-18] Solitary fibrous tumour of the prostate: a rare mesenchymal neoplasm – a case report

Prattana Chiravirakul

Anatomical Pathology Department, Lamphang Hospital, Lamphang, Thailand

Background: Solitary fibrous tumour (SFT) is an uncommon myofibroblastic tumour generally affecting the pleura. Differential diagnosis includes poorly differentiated adenocarcinoma and various mesenchymal neoplasm of prostate. **Case Presentation:** A 66-year-old man presented with dysuria for 8 months. He was diagnosed as benign prostatic hyperplasia and he received medical treatment but his symptoms did not improve. The transurethral resection of prostate (TUR-P) was performed. The macroscopic examination showed multiple irregular firm light brown tissue, measuring 4 x 3 x 1 cm in aggregate and weighing 30 grams. The microscopic sections showed patternless spindle cell proliferation, embedded in fibrous stroma. Multiple staghorn blood vessels were identified in the lesion. Some areas showed hypercellularity and pleomorphic nuclei. Few areas of necrosis were noted. Mitotic rate was 1 – 2/10 HPFs. So careful long-term clinical follow-up was recommended. Immunostainings showed positivity for vimentin, CD34, PR and desmin while it was immunonegative for CD117, SMA, PSA and uroplakinII. The further immunostaining for STAT6 was performed and showed strong positivity. The solitary fibrous tumour was finally diagnosed in this case. **Discussion and Conclusion:** SFT is rare prostatic mesenchymal neoplasm. The immunohistochemical study should be performed in panel approach. The STAT6 immunostaining is specific for SFT. The malignant features of SFT are high cellularity with cytological atypia, necrosis and increased mitotic activity (> 4/10 HPFs) or atypical mitosis.

ABSTRACT

[IAP-19] Endocervical fibroblastic malignant peripheral nerve sheath tumour (MPNST) in a young woman – a diagnostic challenge

Jithmal Meegoda¹, Lalani De Silva¹, Vidusha Ranathunga¹, Harshima Wijesinghe¹, Gayani Ranaweera¹, Priyangi Pathirana², Kanishka Karunaratne³ and Chandu De Silva¹

1. Department of Pathology, Faculty of Medicine, University of Colombo, Sri Lanka

2. Department of Pathology, District General Hospital, Chilaw, Sri Lanka

3. University Gynaecology and Obstetrics Unit, National Hospital of Sri Lanka

Background: Primary cervical sarcomas are extremely rare, representing < 1% of all cervical malignancies. Malignant peripheral nerve sheath tumours (MPNST) are rarer with only 17 reported cases. Here we report a 20-year-old female with endocervical MPNST, being the youngest in the literature. **Case Presentation:** She presented with chronic urinary retention and lower abdominal pain. Radiology revealed a bicornuate uterus with a well-defined, mixed-echogenic endocervical mass measuring 10.7 x 9.6 x 9.4 cm. Initial incisional biopsy was compatible with a high-grade sarcoma and a debulking surgery was performed to preserve fertility. Histopathological examination revealed a malignant spindle cell tumour with hyper/hypocellular areas. The hypercellular areas showed long fascicles of spindle cells with a haemangiopericytomatous vascular pattern. The constituent cells contained enlarged, plump, pleomorphic nuclei with coarse chromatin. A myxoid stroma was noted in the hypocellular areas. There were frequent mitoses (20/mm²) and foci of geographic necrosis involving 30% of the tumour. Multiple foci of lymphovascular and perineural invasion were noted. The spindle cells were positive for S100 and CD34. The possibility of leiomyosarcoma, rhabdomyosarcoma, Ewing sarcoma, synovial sarcoma and carcinosarcoma were excluded by negative SMA, desmin, MyoD1, Bcl-2, CD-99, EMA and Pan-CK. She underwent radical hysterectomy, six months after the initial diagnosis which showed extensive tumour involving lower-uterine segment and right parametrium with single lymph node deposit. Currently she is being followed up at an oncology unit. **Discussion and Conclusion:** Endocervical fibroblastic MPNST is different to other MPNST types since it is thought to arise from endocervical stromal fibroblasts. It is an aggressive malignancy with high recurrence rate, distant metastasis and poor response to chemoradiation.

ABSTRACT

[IAP-20] Adrenocortical carcinoma

Farah Farera¹, Sri Suryanti¹ and Jumadi Santoso²

1. Department of Anatomical Pathology, Faculty of Medicine, Universitas Padjadjaran/Hasan Sadikin General Hospital Bandung, Indonesia
2. Surgical Department, Dr Soekardjo Hospital, Tasikmalaya, Indonesia

Background: Adrenocortical carcinoma (ACC) is a malignant neoplasm of adrenal cortex with annual incidence of 0.6 – 1.67 cases per million population per year. **Case Presentation:** We reported a 68-year-old male with right waist pain, palpable solid mass in right flank and urinating spontaneously. Abdominal ultrasound showed a solid mass of right adrenal gland and cysts in both kidneys. Hepatobiliary tract, pancreas, spleen and urinary bladder were within normal limits. Neither ascites nor enlarged prostate gland were present. Exploratory laparotomy and right adrenalectomy were performed. On gross inspection, a brownish white soft friable mass measured 10 x 7 x 5 cm. On histopathological examination, the tumour consisted of solidify hyperplastic round to oval cells having pleomorphic and hyperchromatic nuclei, prominent nucleoli and atypical mitosis. There was necrotic area. The tumour had invaded the capsule and lymphovascular vessels. Immunoreactivities were positive for synaptophysin and negative for chromogranin, PAX8 and S100. It was concluded as adrenocortical carcinoma. **Discussion and Conclusion:** ACC is malignant epithelial tumour of adrenal cortical cells. It represents ≥ 3 of Weiss criteria, including > 5 mitoses per 50 HPFs, atypical mitosis, high nuclear grade, diffuse architecture, $< 25\%$ clear cells and invasion of venous structure/sinusoidal structure/capsule. ACC is a rare case of endocrine malignancy with poor prognosis. Early diagnosis and removal of the tumour has higher survival rate.

ABSTRACT

[IAP-21] Clear cell adenocarcinoma of bladder – a case with evidence of müllerianosis

Varuni Fernando, Gerhard Van Schalkwyk, Nirav Gandhi and Manuel Diaz Sotres

Department of Pathology, University Hospital of Derby and Burton, United Kingdom

Background: Clear cell adenocarcinoma of bladder is rare with only few cases showing Müllerianosis, its presumed aetiology. We describe such a case, suspected at biopsy and showing endometriosis. **Case Presentation:** A 45-year-old female presented with haematuria and cystoscopy revealed a 45 mm bladder tumour. She had no past malignancies. Biopsy showed a clear cell tumour with positive CK7, PAX 8, Napsin A; negative CK20 and ER with deep muscle invasion. A diagnosis of clear cell adenocarcinoma (mesonephric type as formerly known) was suggested. Patient underwent anterior exenteration. Microscopy showed tubulopapillary, high grade, clear cell morphology. Tumour invaded peri vesical fat but not cervical stroma. It showed positive PAX 8, CK 7, patchy Napsin A, CA 125 and racemase and negative p63, CK 20 and ER. Lymphovascular invasion, margin involvement and lymph nodes metastasis were negative. Bladder endometriosis and a mucinous cystadenoma of ovary were present. No conventional urothelial carcinoma (UC), dysplasia or a clear cell carcinoma of gynaecologic tract was present. Peritoneal fluid cytology was negative. **Discussion and Conclusion:** The presumed aetiology of müllerianosis was present in our case as endometriosis (a component of Müllerianosis) while this was rarely reported in literature. Conventional UC reported in some cases as an aetiology was not seen in ours. Racemase positivity, shown to help in distinction from differentials in most cases was seen in ours. Only few reported cases showed biopsy diagnosis. A strong suspicion of this entity especially in a female and favourable immunostains supported our biopsy diagnosis.

ABSTRACT

[IAP-22] Mixed adenoid basal carcinoma and invasive squamous cell carcinoma of uterine cervix: a case report in Banglamung Hospital

Komkrit Suttichan

Department of Anatomical Pathology, Banglamung Hospital, Chonburi, Thailand

Background: Adenoid basal carcinoma (ABC) is an uncommon malignancy of the uterine cervix. Most of patients are elderly, asymptomatic, with abnormal cytology in annual Pap smear test. ABC could be associated with squamous dysplasia or another invasive carcinoma.

Case Presentation: The patient was a 71-year-old woman who visited Banglamung Hospital with bleeding per vagina and anemic symptom. Physical examination revealed an exophytic mass, the size of which is 2 cm at the uterine cervix. Gynecologist performed excisional biopsy. The tumour consisted of two components: (1) basaloid cells arranged in cribriform pattern with focal squamous differentiation; and (2) infiltrating nests of polygonal-shaped tumour cells surrounded by desmoplastic stroma. Both tumour cell components showed diffuse cytoplasmic immunoreactivity for p16 and nuclear immunoreactivity for p63. The CD117 was negative for the basaloid component. Basement membrane material in the basaloid component also highlighted by PAS stain. **Discussion and Conclusion:** ABC is the tumour associated with HPV infection. The morphological structure could be similar to adenoid cystic carcinoma (ACC). The immunohistochemical study, such as p16 and CD117, is helpful for differentiating ABC from ACC. Due to the ABC's association with HPV infection, thus the ABC expresses diffuse p16 stain. In contrast, ACC is in absence of p16 immunoreactivity, but expresses diffuse CD117 stain. In this case, the immunoprofile supports the diagnosis of ABC, which is mixed with invasive squamous cell carcinoma.

ABSTRACT

[IAP-23] Accuracy of nuclear features granulometry to predict malignant lymphomas from undifferentiated carcinoma and lymphocytic benign lesions

Okky Husain^{1,2}, Hermin Aminah Usman^{1,2}, Hasrayati Agustina^{1,2}, Widyawardana Adiprawita³ and Muhammad Syah Misuari Sabirin^{1,2}

1. Faculty of Medicine, Universitas Padjadjaran, Bandung, Indonesia

2. Anatomical Pathology Department, Hasan Sadikin General Hospital, Bandung, Indonesia

3. Institut Teknologi Bandung, Bandung, Indonesia

Background and Objectives: Haematoxylin and eosin (HE) morphology of lymphomas and undifferentiated carcinomas are challenging to be distinguished. Ancillary phenotype examinations by immunohistochemistry (IHC) are commonly used however not readily available. Granulometry is mathematical approach to extract objects size distribution from digital image. The aim was to predicts lesion based on HE nuclear granulometry. **Materials and Methods:** Digital images of 100x and 400x magnifications from HE slides of IHC confirmed malignant lymphoma, not otherwise specified; undifferentiated carcinoma; and lymphatics benign lesions. Area (linear and geometrically), and intensity (maximum, minimum, range, and means) of nuclei from each Images were automatically measured using scikit-image measure module. Nuclei samples were randomly pooled unto 5 arrays of equal magnification and cases and compared to each images using unpaired parametric statistical t-test. **Results:** Under 100x and 400x, there were total images of 121 and 208 from lymphomas, 150 and 254 from carcinomas, and 100 and 215 from benign lesions. Images dimensions were 1,376 x 1,038 pixels, 24-bits depth (8 bits, 3 channels). Under 100x and 400x, nuclei intensity accuracy for lymphomas were 50% and 76%, carcinomas were 57% and 85%, benign lesions were 52% and 65%. Under 100x and 400x, nuclei area accuracy for lymphomas were 50% and 65%, carcinomas were 57% and 70%, benign lesions were 53% and 61%. **Conclusion:** Nuclear HE granulometry intensity range is the most helpful to distinguish lymphomas from carcinoma and benign lesions under 400x magnification.

ABSTRACT

[IAP-24] Malignant triton tumour: case report

Henny S. Rejeki and Bethy S. Hernowo

Department of Pathological Anatomy, Faculty of Medicine, Universitas Padjadjaran, Bandung, Indonesia

Background: Malignant triton tumour (MTT) is a rare neoplasm, approximately 170 cases have been reported. Diagnosis of this tumour requires attention to the clinical, histopathological, immunohistochemical and prognosis features of this neoplasm. **Case Presentation:** A 39-year-old male presented with a large mass in left neck gradually increasing in size. At one and twelve year (s) old, he underwent operation of a nodule in the same area. He had a relapse in 2014, initially as big as a chicken egg. In the last 1 year, it was getting bigger thus he complained of difficulty swallowing, eating and breathing. Previous biopsy diagnosed with neurofibroma. The resected mass consisted of a large globular mass, measuring 16 x 11 x 7 cm. Microscopic features showed alternate hypocellular and hypercellular areas composed of spindle cells with wavy nucleus, pattern of vascular growth with a haemangiopericytoma-like appearance, mitotic figures > 10/10 HPFs with abnormal mitoses, scattered large cells both rounded and elongated with abundant deep eosinophilic cytoplasm. The spindle cells showed focal positivity for S-100 protein. Desmin was stained in rhabdomyoblastic cells. **Discussion and Conclusion:** MTT is a malignant peripheral nerve sheath tumour with skeletal muscle differentiation. The proposed classification of MTT is comprised of three following criteria, i.e. (a) it is related to peripheral nerve or occurs in patient with NF-1; (b) most of the tumour consist of Schwann cells; and (c) tumour contains rhabdomyoblasts. The tumour in this case also showed marbled appearance (alternating hypocellular and hypercellular areas) and contained heterologous differentiation (rhabdomyosarcomatous), brisk mitotic, focal positivity for S-100 and desmin. Tumor develops after a long period (10 – 20 years). Differential diagnosis is neurofibroma, but it can be ruled out by immunohistochemical S-100 (focal positivity). MTT is more aggressive than MPNST and is important as differential diagnosis.

ABSTRACT

[IAP-25] Extra-nodal diffuse large B cell lymphoma (non-germinal centre type) of manus: a case report

Fitria Sholihah^{1,2}, Harry Galuh N^{2,3} and Bethy S Hernowo^{1,2}

1. Anatomical Pathology Department, Hasan Sadikin General Hospital, Bandung, Indonesia

2. Faculty of Medicine Universitas Padjadjaran, Bandung, Indonesia

3. Radiology Department, Hasan Sadikin General Hospital, Bandung, Indonesia

Background: Lymphoma of soft tissues are rare. They had been reported to occur 1.4% of all lymphoma cases. **Case Presentation:** A 67-year-old male presented with painful rapidly growing soft tissue mass and ulcer in left manus, 6 months prior to hospitalisation. Radiologic imaging of left manus showed soft tissue mass damaging metacarpal, pisiform, triquetrum and hamatum bones. Lymphadenopathy of neck and axilla was found several weeks after amputation. Histopathological examination from left manus revealed small round blue cell tumour infiltrating cutaneous, subcutaneous and bone tissues. Immunohistochemistry revealed negative for BCL6, CD5, CD10, CD23, CD99, CK, myoD1, myogenin and osteocalcin. The tumour had positive immunoexpression of CD3, CD20, CD45 and MUM1. Ki-67 yielded strong immunoreactivity in more than 40% of tumour cells. The final histopathological diagnosis was extra-nodal diffuse large B cell lymphoma, non-germinal centre type of manus. The patient underwent six cycles of chemotherapy with RCHOP. **Discussion and Conclusion:** Lymphoma of soft tissue usually manifests as swollen painful mass. The main site involved are thigh, trunk and lower limbs. The mechanism of lymphomatous involvement in soft tissue can be direct invasion from adjacent lymph nodes, metastatic spread and primary even though very rare. The most common histologic subtype is diffuse large B cell lymphoma (DLBCL). Because of its rarity, it is important to differentiate soft tissue lymphoma from other sarcomas. The treatment of soft tissue lymphomas relies on the type of lymphoma. The prognosis is generally poor.

ABSTRACT

[IAP-26] BRAF (V600E) mutation in papillary thyroid carcinoma in a Vietnamese population: lacking correlation with aggressive clinicopathological features

Tho Ngoc-Quynh Le¹, Vu Anh Hoang² and Diem Ngoc-Thi Vo¹

1. Department of Histology, Embryology and Pathology, University of Medicine and Pharmacy, Ho Chi Minh City, Vietnam
2. Centre for Molecular Biology, University of Medicine and Pharmacy, Ho Chi Minh City, Vietnam

Background and Objectives: BRAF (V600E) is a common event in papillary thyroid carcinoma, especially in the Asian population. However, it still remains whether or not it is a valuable surrogate marker for predicting the prognosis of a high incidence population. Moreover, papillary thyroid carcinoma is diagnosed earlier than in the past. In Vietnam, there are not many studies regarding this issue, especially in early-stage patients. **Materials and Methods:** We performed BRAF (V600E) mutation analysis using a section from paraffin-embedded specimens of 82 patients who underwent total thyroidectomy for primary papillary thyroid carcinoma at University of Medicine and Pharmacy, Ho Chi Minh city in 2020. The clinical features were recorded from hospital data. The pathologist interpreted the pathological characteristics and the association between the mutation and high-risk factors. **Results:** The prevalence of BRAF (V600E) mutation was 86.5% with a higher rate in tumours larger than 1.0 cm but did not increase with tumour size. The mutation also showed the association with tall cell variant and gross extrathyroidal extension. Surprisingly, the prevalence of lymph node metastasis significantly increased in tumours with an absence of the mutation. There was no correlation between BRAF (V600E) mutation and other aggressive clinicopathological features older age, multifocal, advanced stages and extranodal extension. **Conclusion:** These findings indicate that, although BRAF (V600E) mutation may play some roles in local development, there is no evidence that BRAF (V600E) mutation significantly reflects the aggressive characteristics and poor prognosis of patients with high incidence mutation population in Vietnam.

ABSTRACT

[IAP-27] Congenital mesoblastic nephroma classical type: a case report

Ichfa Namira and Bethy Suryawathy

Anatomical Pathology Department, Faculty of Medicine, Padjadjaran University / Dr Hasan Sadikin General Hospital, Bandung, Indonesia

Background: Congenital mesoblastic nephroma (CMN) is a rare, accounting for 3 – 10% of paediatric renal tumours. It is the most common renal tumour of newborns and usually discovered before 6 months of age. The diagnosis in children over the age of 2 is a rare case. CMN is divided into classical, cellular and mixed type that associated with an excellent prognosis. We present a rare case of CMN in a 2-month-old boy. **Case Presentation:** A 2-month-old male baby presented with fever for the past 7 days. On physical examination, there was a palpable mass in abdomen. Glomerular filtration rate showed dysfunctional of right kidney. Ultrasonography showed medullary cystic kidney disease in right kidney. On gross examination, the kidney size was 5.5 x 3 x 2 cm. Microscopic examination revealed the tumour composed of interlacing fascicles of fibroblastic cells with thin nuclei and no mitotic activity. After nephrectomy, the patient was stable. **Discussion and Conclusion:** Classic CMN is morphologically identical with infantile fibromatosis of the renal sinus. The differential diagnosis of CMN includes Wilm's tumor, adrenal neuroblastoma and clear cell sarcoma of the kidney. Microscopic examination showed tumour cells dissecting the island of renal parenchyma composed of interlacing fascicles of fibroblastic cells with thin nuclei. There were small island of hyaline cartilage and foci of extramedullary hematopoiesis. The patient was diagnosed with classical CMN because there were no pushing border or infantile fibrosarcoma-like pattern like in congenital mesoblastic nephroma cellular type. The final diagnosis was classical CMN.

ABSTRACT

[IAP-28] Spectrum of gastric subepithelial lesions encountered on EUS-FNA: a single centre experience

Poojan Agarwal¹, Pooja Bakshi¹, Kusum Verma¹, Vikas Singla² and Anil Arora²

1. Department of Cytopathology, Sir Ganga Ram Hospital, New Delhi, India

2. Department of Gastroenterology, Sir Ganga Ram Hospital, New Delhi, India

Background and Objectives: Endoscopic ultrasound guided fine needle aspiration (EUS-FNA) is a minimally invasive and reliable non-surgical technique for diagnosis of gastrointestinal lesions. The present study aimed at evaluating the spectrum of lesions encountered in the gastric subepithelium on EUS-FNA at a tertiary care centre. **Materials and Methods:** Archival data of all patients undergoing EUS-FNA for gastric submucosal lesions over a period of five years was retrieved. Patient demographics, clinical presentation and EUS findings were recorded along with the FNA results. **Results:** A total of 78 EUS-FNA samples were analysed. Material was adequate in 68 cases (87.17%) and inadequate in 10 cases (12.22%) patients due to scant cellularity. Of the adequate samples, 33 (42.3%) were reported as neoplastic while 27 (34.61%) were non-neoplastic and 8 (10.25%) were reported as suspicious of a neoplasm. In the neoplastic category, the predominant diagnosis was of spindle cell neoplasm comprising gastrointestinal stromal tumour (13 cases), benign neural tumour (3 cases), leiomyoma (2 cases) and spindle cell tumours (3 cases). The latter could not be categorised further due to lack of IHC material. The next common diagnosis was adenocarcinoma (6 cases) followed by neuroendocrine tumour (2 cases) and poorly differentiated carcinoma (1 case). The non-neoplastic lesions included non-specific pathology (15 cases), inflammatory lesions (8 cases) and one case each of tuberculosis, pancreatic rest and Brunner gland hamartoma. Cell blocks for ancillary testing were available in 51 cases (65.38%) and follow-up was available in 42 cases (53.84%). **Conclusion:** EUS-FNA is a good modality for diagnosis of gastric submucosal lesions with a high diagnostic yield.

ABSTRACT

[IAP-29] Sinonasal teratocarcinosarcoma: a case report of uncommon sinonasal malignant tumour

Fitriana M.N. and Usman H.A.

Anatomical Pathology Department, Faculty of Medicine, Universitas Padjadjaran / Dr Hasan Hasan Sadikin General Hospital, Bandung, Indonesia

Background: Sinonasal teratocarcinosarcoma is rare malignant tumour arising in sinonasal region. On Histopathological examination, this tumour is characterised by the combination of benign and malignant components of epithelial, mesenchymal and teratoid elements. Sinonasal teratocarcinosarcoma is more common in male, tends to locally damage with high recurrence rate. **Case Presentation:** A 30-year-old man presented with chronic nasal obstruction and bleeding discharge for the past two month. Physical examination and CT scan revealed a mass occupying left ethmoid sinus. Histopathological examination showed admixture of carcinoma, immature neuroectodermal component and sarcoma. Immunohistochemistry was applied to each component. **Discussion and Conclusion:** Terminology of teratocarcinosarcoma is established when there are carcinomatous and sarcomatous tissues with teratoma component. Histopathological examination of our tumour revealed area of adenocarcinoma. In addition, area of rhabdomyosarcoma was also characterised. In some parts, there was a structure resembling primitive neuroectodermal tumour which was confirmed by positive immunoexpression of CD99, NSE, chromogranin and CD56. Furthermore, myogenin expression was positive in rhabdomyosarcoma part. Therapy of sinonasal teratocarcinosarcoma is a combination of surgery, radiotherapy and chemotherapy. After surgery, our patient was received radiotherapy. His recent condition is still stable.

ABSTRACT

[IAP-30] Impact of convalescent plasmatherapy on patient outcome in patients of COVID-19: a six-month analysis

Tanvi Jha, Akanksha Agrawal, Priyanka Gogoi and Preeti Diwaker

Department of Pathology, University College of Medical Sciences and GTB Hospital, Delhi

Background and Objectives: The role of plasmatherapy in the management of the current COVID-19 pandemic has been speculated. However, in view of the varied response regarding its effectiveness from various multicentre studies, there is a need to conduct more single-centre population-specific studies. We, thus, aimed to assess the effectiveness of convalescent plasmatherapy in COVID-19 patients in a single dedicated COVID-19 care centre. **Materials and Methods:** This retrospective cross-sectional study was conducted using records of all COVID-19 patients who received plasmatherapy over a period of 6 months in a dedicated COVID hospital in Delhi. Information pertaining to transfusion, disease severity, associated comorbidities, the treatment used and treatment outcome were recorded. Data was analysed using SPSSv23. **Results:** Out of 141 patients who received plasma therapy, 62% died. Mortality was found to be significantly higher in patients > 60 years of age ($p < 0.001$), those with severe COVID-19 infection ($p < 0.050$) and pre-existing renal disease ($p < 0.050$) compared to younger, moderately-ill patients with no comorbidities. The admission-transfusion interval was significantly correlated to mortality and was found to be a sensitive parameter for predicting outcome at cut-off value of < 5 days ($p < 0.001$). There was no significant association of mortality with patient blood group, plasma antibody levels or donor haemoglobin levels. **Conclusion:** Plasma therapy can, thus, be considered as an adjuvant treatment modality, especially when administered at admission, in patients with moderate COVID-19 infections. Further, assessment of admission transfusion interval may be used for outcome prediction in these patients.

ABSTRACT

[IAP-31] Malignant phyllodes tumour of the breast with heterologous osseous differentiation

Muhammad Syah Misuari Sabirin¹, Hasrayati Agustina¹ and Maman Abdurahman²

1. Department of Anatomical Pathology, Faculty of Medicine, Universitas Padjadjaran, Hasan Sadikin Hospital, Bandung, Indonesia
2. Department of Surgical Oncology, Faculty of Medicine, Universitas Padjadjaran, Hasan Sadikin Hospital, Bandung, Indonesia

Background: Phyllodes tumour of the breast is one of the fibroepithelial neoplasms that shows proliferation of both epithelial and mesenchymal component. In malignant condition, the diagnosis can be established by the existence of malignant heterologous component even if common features are absence. This case report demonstrates a case of malignant phyllodes tumour with heterologous part of an osseous differentiation. **Case Presentation:** We reported a case of 43-year-old woman who came to the hospital with lump on her left breast. The lump had been appeared for more than a year. The nodule size was 6 x 4 x 3 cm, firm, and followed with ulceration of the skin. The patient then underwent radical mastectomy for her condition. Histopathology result showed tumour mass with round to spindle cells that occurred with foci of osseous differentiation composed of osteocytes. The nuclei appeared pleomorphic and hyperchromatic with abundant mitosis. Immunohistochemistry results exhibited a negative CK and below 40% of Ki67 index. **Discussion and Conclusion:** Malignant phyllodes tumour differs from its benign counterparts from the nature of its growth. It is diagnosed if there is any appearance of malignant heterologous element, which in this case appears as an osseous differentiation. The stromal overgrowth also supports the diagnosis of this tumour, showed by the absence of epithelial elements proved by negative CK marker.

ABSTRACT

[IAP-32] Inflammatory myofibroblastic tumour in the urinary bladder

Nia Nuraeni¹, Bethy Suryawati Hernowo¹ and Vita Indriasari²

1. Anatomical Pathology Department, Faculty of Medicine, Universitas Padjadjaran / Dr Hasan Sadikin General Hospital, Bandung, Indonesia

2. Paediatric Surgery Department, Faculty of Medicine, Universitas Padjadjaran / Dr Hasan Sadikin General Hospital, Bandung, Indonesia

Background: An inflammatory myofibroblastic tumour (IMT) rarely occurs in the urinary bladder. IMT is a distinctive neoplasm composed of myofibroblastic and fibroblastic spindle cells. It also has inflammatory infiltration of plasma cells, lymphocytes and eosinophils. It is important to distinguish this tumour from other malignant spindle cell tumours. **Case Presentation:** A 7-year-old girl presented with a 1.5-month history of gross haematuria. Computed tomography revealed a solitary mass tumour, measuring 6.1 x 8 x 9.5 cm at the wall of the bladder. Intraoperative finding showed a large solid bladder mass with smooth surface. Histopathology result was consistent with the IMT. The bladder tissue was widely infiltrated by spindle cells with fascicular pattern. There was a myxoid stroma with infiltration of inflammatory cells. Mitotic activity was numerous, with no atypical mitotic figures were identified. Immunohistochemistry revealed focally positive for smooth muscle actin and desmin and negative for myogenin, myod1 and ALK. **Discussion and Conclusion:** Clinically and radiologically, IMT of the urinary bladder is indistinguishable from other entities. It has a broad differential diagnosis ranging from reactive to malignant neoplastic lesions, including rhabdomyosarcoma, or sarcomatoid urothelial carcinoma. IMT occurs mostly in children and young adults. The final and definitive diagnosis can be only made by histopathology and immunochemistry. In a recent systematic review, the ALK is positive in 65% of cases, but there are no significant differences between ALK positive and negative in IMT of the bladder. In conclusion, the tumour was diagnosed as an IMT.

ABSTRACT

[IAP-33] Extramedullary plasmacytoma in bladder

Dita Irmaya, Sri Suryanti and Friska Mardianti

Anatomical Pathology Department Faculty of Medicine Universitas Padjadjaran / Dr Hasan Hasan Sadikin General Hospital Bandung Indonesia

Background: Plasmacytoma is a rare B-lymphocyte neoplastic disorder that usually presents as the generalised disease multiple myeloma. Less than 5% of the cases present as a solitary mass of monoclonal plasma cells in the bone or soft tissue. Although solitary extramedullary plasmacytoma (EMP) may arise in any organ. However, it rarely affects bladder. **Case Presentation:** A 62-year-old male without a history of multiple myeloma presented with urinary frequency and nocturia. This patient was previously diagnosed as infiltrating urothelial carcinoma of the bladder. A year later, the bladder ultrasound revealed a bladder mass and a subsequent flexible cystoscopy only demonstrated an area of irregular urothelium. Histology of a further formal resection of this irregular area revealed carcinoma with population of atypical cells with enlarged nuclei, prominent nucleoli and varying quantities of cytoplasm showing plasma cell features. The immunohistochemistry was consistent with a plasmacytoma. **Discussion and Conclusion:** EMP of the urinary bladder is a rare entity with only 21 cases reported in the literature. In this report, we describe a further case of EMP of the bladder associated with transitional cell carcinoma (TCC) of the urothelium. We also highlight the important of histopathological findings. EMPs are highly radiosensitive tumours and in the case of head and neck disease. The 10-year survival rate is 65% following radical radiotherapy. According to the paucity of reported cases of bladder EMP, the optimal treatment regime remains unclear. In keeping with other anatomical sites, current treatment is based to the assumed benefit of radical radiotherapy and prognosis appears to be better in those with no evidence of systemic disease.

ABSTRACT

[IAP-34] Correlation between clinicopathology and the depth of chorionic villi invasion of placenta accreta spectrum

Yuktiana Kharisma^{1, 2}, Hasrayati Agustina¹, Birgitta M. Dewayani¹, Sri Suryanti¹ and Bethy S. Hernowo¹

1. Anatomical Pathology Department, Faculty of Medicine Universitas Padjadjaran / Dr Hasan Sadikin General Hospital, Bandung, Indonesia
2. Anatomical Pathology Department, Faculty of Medicine Universitas Islam Bandung, Indonesia

Background and Objectives: The incidence of placenta accreta spectrum (PAS) has inclined with the increasing of cesarean deliveries (CD). It is divided into 3 groups based on the invasion of the chorionic villi into the myometrium (accreta, increta and percreta). The aim was to determine the correlation between clinicopathology and the depth of chorionic villi invasion of PAS. **Materials and Methods:** This analytical descriptive study conducted from 66 cases from January 2015 to December 2020 at Dr Hasan Sadikin General Hospital Bandung. They were divided into 3 groups and had been evaluated based on maternal [age, gestational age (GA), parity, prior miscarriage and previous CD] and foetal [birth weight (BW) and APGAR score] characteristics. This study was analysed by a chi-square test. **Results:** Placenta increta was the most cases (46.97%). The PAS mostly occurred at 30 – 34 years of age in all groups. A 32 – 37 weeks of GA, one to two parity (-ies) revealed accreta (52%, 74%) and increta (33%, 68%). Placenta percreta had 33% of 28 – 32-week GA and 56% was present in cases with ≥ 3 parities. Sixty-three % of accreta and 55% of increta did not have prior miscarriage; however, percreta group had it (78%). Almost all the group had at least one CD history. Normal foetal BW, APGAR score in accreta were 52%, 74%; increta were 48%, 74%; percreta were 56%, 89%, respectively. This study showed no statistically significant correlation of the maternal and foetal characteristics with PAS ($p > 0.05$). **Conclusion:** There was no significant correlation between the clinicopathology and the depth of chorionic villi invasion of PAS.

ABSTRACT

[IAP-35] A case report of giant posterior mediastinal ganglioneuroma in a 4-year-old girl

Tutik Nur Ayni^{1,2} and Afiati Aziz^{1,2}

1. Dr Hasan Sadikin Hospital, Bandung, Indonesia

2. Padjadjaran University, Bandung, Indonesia

Background: Ganglioneuroma is a rare (one per million population), differentiated, benign neurogenic tumour which originates from the neuroepithelium along the sympathetic ganglia. Most ganglioneuromas are thought to develop de novo rather than by maturation of a preexisting neuroblastoma, and are usually found in the posterior mediastinum and retroperitoneum. **Case Presentation:** A 4-year-old girl patient presented at the thoracic surgery outpatients department with shortness of breath and cough for the last year. Computerized axial tomography (CT) showed a semisolid mass in the right superoanteromedio posterior mediastinum as high as 5th – 6th thoracic vertebra suggestive of a bronchogenic cyst. Histopathological examination of the specimen obtained from thoracostomy revealed tumour tissue comprising of ganglion cells individually distributed in Schwannian stroma. Neuritic processes produced by ganglion cells were enveloped by the cytoplasm of Schwann cells, so that there were no microscopic foci of naked neuropil without Schwannian coverage. Immunohistochemistry showed positive results for S100 in both ganglion cells and Schwannian stroma. **Discussion and Conclusion:** A posterior mediastinal mass presents with many differential diagnoses. These include a nerve sheath tumour, neuroblastoma, ganglioneuroblastoma, gastroenteric cyst, etc. Mediastinal ganglioneuromas arise from neural crest cells. These tumours are mostly asymptomatic, but massive tumours can present symptoms related to locoregional compression like dyspnoea and obscures its original location. Ganglioneuroma can be made as a differential diagnosis for bronchogenic cyst when a semisolid mass is found on CT. Definitive diagnosis can be made by histological examination. Complete surgical resection is the best choice for a curative treatment for mediastinal ganglioneuroma, due to the excellent prognosis.

ABSTRACT

[IAP-36] Primary lymphomas of the bone – a case series

Shreya S. and Vidya Monappa

Department of Pathology, Kasturba Medical College, Manipal, India

Background: Primary lymphoma of bone (PLB) is an extranodal lymphoma that arises in osseous sites with no evidence of disease elsewhere for at least six months. They account for 3% of malignant bone tumours and 1% of all lymphomas. This study analysed the clinicopathological features and outcomes of a series of PLB. **Case Presentation:** This was a retrospective study from January 2013 to December 2020. Six cases of PLBs were included. Age ranged from 21 to 62 years old (mean of 45 years old) with no sex predilection. The most common symptom was local bone pain. Sites involved were spine (4 cases) and pelvic bones (2 cases). Histopathology consisted of DLBCL (5 cases), Hodgkin's lymphoma (1 case) and T lymphoblastic lymphoma (1 case). No patients had lymphadenopathy and most patients (4 cases) were stage 4. LDH was elevated in all. Patients underwent local resection (for obstructive symptoms) with adjuvant chemoradiotherapy. Follow-up duration ranged from 1 to 3 year (s) (median of 1 year). One patient succumbed to lung metastasis with respiratory failure. **Discussion and Conclusion:** PLBs are very rare tumours. There exists a separate staging system for PLBs. DLBCLs are the commonest type of PBL. On radiology they have no special characteristics. Most cases have a favorable outcome when treated with a combined chemoradiotherapy. It is thus important to differentiate them from other causes of lytic bone lesions including primary and metastatic tumours.

ABSTRACT

[IAP-37] Intraobserver and interobserver agreement in the scoring of PD-L1 (SP142) and tumour-infiltrating lymphocytes in triple-negative breast cancers

David Jerome P. Ong, Pier Angeli dR Medina, Sarah Jane L. Datay-Lim and Elizabeth Ann S. Alcazaren

The Medical City, Ortigas Avenue, Pasig City, Philippines

Background and Objectives: Known for their poor outcomes, triple-negative breast cancers (TNBCs) have been investigated for immune checkpoint inhibitors that target Programmed death ligand 1 (PD-L1). In the recent decade, tumour-infiltrating lymphocytes (TILs) have also become potential biomarkers. The aim of the study was to determine the reproducibility of PD-L1 scoring system and TILs interpretation in the local setting through intra- and interobserver agreement. **Materials and Methods:** Forty-three specimens were evaluated with PD-L1 (Roche VENTANA SP142 assay) and evaluated on two occasions by three pathologists. Kappa statistic for PD-L1 and TILs categories while intraclass correlation coefficient (ICC) were assessed, with cut-offs of 0.80 and 0.70, respectively. **Results:** The overall kappa values for PD-L1 on the first and second rounds were weak at 0.506 ($p = 0.000$) and minimal at 0.315 ($p = 0.002$), respectively. Intraobserver kappa values for PD-L1 were varied across the three readers while interobserver kappa values for PD-L1 showed none (0.181) to moderate (0.789) agreement. The TILs intraobserver reliability showed poor to good agreement, with the highest ICC of 0.889 (95% CI: 0.805 - 0.938). **Conclusion:** This study demonstrated variable intra- and interobserver agreement for both TILs and PD-L1 expression. Although it was desirable to have strong to almost perfect agreement, the kappa and ICC values suggested additional room for improvement. In light of the repercussions, the management of patients will undergo immune checkpoint inhibitor therapy, regular training sessions, concurrences of equivocal results and possible use of digital pathology as a medium in interpreting TILs and PD-L1 stains to achieve consistent results.

ABSTRACT

[IAP-38] Analysis of ETS-like protein 1 expression on prostate adenocarcinoma in West Sumatera, Indonesia

Anandia Putriyuni^{1,2}, Yevri Zulfiqar³ and Tofrizal⁴

1. *Rasidin Hospital, Padang, Indonesia*
2. *Department of Anatomical Pathology, Faculty of Medicine, Baiturrahmah University, Padang, Indonesia*
3. *Division of Urology, Department of Surgery, Faculty of Medicine, Andalas University / M. Djamil Hospital, Padang, Indonesia*
4. *Department of Anatomical Pathology, Faculty of Medicine, Andalas University, Padang, Indonesia*

Background and Objectives: Prostate cancer is the second most common and the fifth leading cause of death by cancer in men worldwide. The most diagnosed type of prostate cancer is adenocarcinoma. ETS-like protein 1 (Elk-1) is a member of the ETS-domain transcription factor family. Elk-1 signaling pathways support growth and progression of tumour cells. However, the mechanism of Elk-1 in prostate adenocarcinoma remains unclear. Analysis of Elk-1 expression on prostate adenocarcinoma has never been carried out in the population of West Sumatera. Therefore, this study aimed to analyse Elk-1 expression correlated with Gleason score of prostate adenocarcinoma in West Sumatera, Indonesia. **Materials and Methods:** As many as 56 samples (slides and paraffin blocks) of prostate adenocarcinoma were collected from Anatomical Pathology Laboratories in West Sumatera. Gleason score (GS) was determined according to the International Society of Urological Pathology (ISUP) 2014/WHO 2016. Immunohistochemical staining of Elk-1 protein was also applied. **Results:** Prostate adenocarcinoma in this study had a high GS (scores of 8 – 10). Approximately 76.79% of cases had GS of 9 (44.64%) and 8 (28.57%). The tumour cells showed positive Elk-1 immunoexpression in 34 (60.71%) cases. Approximately 88.24% of prostate adenocarcinoma with high GS revealed higher levels of positive Elk-1 expression by comparison with Elk-1-negative cases. There was statistically significant correlation between Elk-1 expression and GS ($p = 0.012$). **Conclusion:** Elk-1 signaling pathway is likely to be activated in prostate adenocarcinoma as it promotes growth and progression of the tumor cells. Elk-1 is potential as prognostic biomarker for prostate adenocarcinoma.

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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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:

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- *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.

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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

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14.1. Letters to the Editor

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

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- *Figure Legend (if needed)*
- *Figure (if needed)*

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The Original Article manuscripts consist of the following order:

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- *Materials and Methods*
- *Results*
- *Discussion*
- *Conclusions*
- *Acknowledgements*
- *References*
- *Table (s)*
- *Figure Legend (s)*
- *Figure (s)*

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The Review Article manuscripts consist of the following order:

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- *Unstructured Abstract*
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- *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:

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- *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:

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- *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)*

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

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The Editorial Office of Asian Archives of Pathology

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Telephone: +66 (0) 90 132 2047

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317 Rajavithi Road, Rajadevi, Bangkok 10400 Thailand

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Editor-in-Chief of Asian Archives of Pathology

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Assistant Professor Dr Chetana Ruangpratheep

The Editorial Office of Asian Archives of Pathology

Department of Pathology, Floor 6, Her Royal Highness Princess Bejaratana Building

Phramongkutklao College of Medicine

317 Rajavithi Road, Rajadevi, Bangkok 10400 Thailand

Telephone: +66 (0) 90 132 2047

Fax: +66 (0) 2 354 7791

Email: editor@asianarchpath.com

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