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TARGETED EPIDURAL BLOOD PATCH VIA POSTERIOR TRANSFORAMINAL APPROACH IN VENTRAL CSF LEAK: A CASE-BASED PERSPECTIVE

Nurain Mahfar[1], Naveen Rajadurai[1], Divann Esvaran[1]

[1]Department of Radiology, KPJ Damansara 2 Specialist Hospital, Kuala Lumpur, Malaysia

ABSTRACT

A 34-year-old female presented with persistent postural headache following diagnostic lumbar puncture. MRI confirmed a ventral cerebrospinal fluid (CSF) leak. A targeted epidural blood patch (EBP) was performed under fluoroscopic guidance using a right L2-3 posterior transforaminal approach, with 15 mL of autologous blood delivered precisely into the ipsilateral third of the ventral epidural space. Immediate symptom relief was noted, with complete resolution within 24 hours and no complications. This case demonstrates the efficacy of a transforaminal EBP technique in treating ventral CSF leaks where interlaminar approaches may be inadequate.

Keywords: Cerebrospinal fluid leak, Epidural blood patch, Ventral dural leak, Transforaminal approach, Image-guided intervention

TUNNEL SIGN – THE CHARACTERISTIC MRI SIGN IN NEUROMELIOIDOSIS: A CASE REPORT

Suranjan PDM[1], Madushani WNM[1], Pallewatte AS[2], Lokubalasooriya C[2], Peiris TPC[2], Rajapaksha J[2], Chandrakumara A[2], Fernando MPS[3]

[1]*Postgraduate Institute of Medicine, University of Colombo.*
[2]*Department of Radiology, National Hospital of Sri Lanka, Colombo.*
[3]*Mildura Base Public Hospital, Victoria, Australia.*

ABSTRACT

Neuromelioidosis is a severe manifestation of Burkholderia pseudomallei infection in the CNS. Imaging diagnosis is a challenge due to its variable clinical and radiological features. A 41-year-old male with a history of fever and headache was referred for imaging. MRI brain revealed geographic areas of diffusion restriction with possible micro abscess in the right posterior frontal (premotor) and right occipital lobes. These extended along the white matter tracts involving the right internal capsule, the cerebral peduncle and brainstem giving rise to "tunnel sign". Associated hemorrhagic components also noted. This case highlights the importance of recognizing this characteristic MRI pattern in neuromelioidosis to improve diagnostic accuracy and patient outcomes. Key imaging features like diffusion restriction with micro abscesses and "tunnel sign" should raise suspicion for neuromelioidosis. Timely diagnosis helps initiation of appropriate therapy crucial in patient management.

Keywords: Neuromelioidosis, MRI Brain Tunnel sign

ASSOCIATION BETWEEN DIFFERENT TUMOUR RADIOLOGICAL CHARACTERISTICS OF THE HEPATOCELLULAR CARCINOMA WITH ALPHA-FETOPROTEIN (AFP), PROTEIN INDUCED BY VITAMIN K ABSENCE OR ANTAGONIST (PIVKA-II) AND THE GENDER-AGE-AFP-DCP (GAAD) SCORE

Muhammad Imran AA[1], Nur Karyatee K[2,4,5], Lee YY[3,5], Mohd Hafizuddin H[1,5]

[1]*Department of Radiology, School of Medical Sciences, Health Campus, Universiti Sains Malaysia, Kota Bharu, Kelantan, Malaysia*
[2]*Department of Chemical Pathology, School of Medical Sciences, Health Campus, Universiti Sains Malaysia, Kota Bharu, Kelantan, Malaysia*
[3]*Department of Medicine, School of Medical Sciences, Health Campus, Universiti Sains Malaysia, Kota Bharu, Kelantan, Malaysia*
[4]*School of Dental Sciences, Health Campus, Universiti Sains Malaysia, Kota Bharu, Kelantan, Malaysia*
[5]*Hospital Universiti Sains Malaysia, Kota Bharu, Kelantan, Malaysia*

ABSTRACT

Background
Local studies have yet to adequately explore the association between specific radiological features of Hepatocellular Carcinoma (HCC) and the GAAD algorithm, a relatively new diagnostic tool. This study aims to analyse the association of the GAAD score, PIVKA-II levels, and AFP with tumour radiological characteristics.
Methodology
A cross-sectional study was conducted involving 32 HCC patients. Previous CT scans were reviewed to assess tumour size (≤3 cm or >3 cm), tumour number, and portal vein thrombosis. Biomarker levels, including AFP, PIVKA-II/DCP, and the GAAD score, were measured and statistically analysed using Chi-square and Fisher's exact tests to identify potential associations with the imaging findings.
Results
AFP levels ≥20 ng/mL were significantly associated with tumours >3 cm (p=0.004). All patients with tumours ≤3 cm had AFP <20 ng/mL. While elevated PIVKA-II (≥28.4 mAU/mL) was more frequent in larger tumours, the association was not statistically significant (p=0.451). High GAAD score (cutoff ≥2.57), exhibited a non-significant trend towards association with tumour size >3 cm (p=0.185), with 85.2% of patients with high GAAD scores also having large tumours. No significant association were found between biomarkers and tumour number or portal vein thrombosis.
Conclusion
AFP is a strong predictor of tumour size in HCC. Though GAAD and PIVKA-II demonstrated diagnostic potential, their association with radiological features were not statistically significant. Larger studies are recommended to confirm GAAD's clinical utility in HCC assessment.

Keywords: *Hepatocellular carcinoma, Radiological characteristics, Alpha-fetoprotein (AFP), PIVKA-II, GAAD score*

UNEXPECTED INCIDENTAL FINDING OF ASCENDING PARAAORTIC COLLECTION IN A PATIENT WITH DUAL PRIMARY MALIGNANCIES: A RARE CASE REPORT

AN C M Nor Azmi[1], WA Wan Ahmed[1]

[1]Department of Radiology, School of Medical Sciences, Hospital Pakar Universiti Sains Malaysia, Jalan Raja Perempuan Zainab II, 16150 Kubang Kerian, Kelantan, Malaysia.

ABSTRACT

Paraaortic collections is rare radiological findings that may be benign or malignant and can be challenging to interpret in oncology patients. We report an incidental ascending paraaortic collection in a 47-year-old woman with dual primary cancers: right breast invasive ductal carcinoma and left lung adenocarcinoma with lung, pleural and bone metastases. She underwent wide local excision, lobectomy, and chemotherapy. A routine post-treatment CT thorax, abdomen, and pelvis unexpectedly showed a new rim-enhancing paraaortic collection near the ascending aorta, not seen in previous scans. There was no contrast extravasation, lymphadenopathy, or vascular involvement. Echocardiography and blood results were unremarkable, and the patient remained asymptomatic. While malignancy recurrence was a concern, imaging features suggested an infective process, especially given her immunosuppressed state. This case highlights the importance of recognizing non-malignant causes of mediastinal collections in cancer imaging to avoid unnecessary intervention.

Keywords: Paraaortic collection, breast carcinoma, lung adenocarcinoma, dual malignancy, oncology imaging

DIAGNOSTIC VALUE OF CONTRAST-ENHANCED CT IN DETECTING METASTATIC LESIONS AMOUNG PROSTATE CANCER PATIENTS AT HOSPITAL SULTAN ABDUL AZIZ SHAH: CORRELATION WITH PSA LEVELS AND GLEASON SCORES

Sitinur Sufia Mohammad[1], Subapriya Suppiah[1,2,3], Soo Tze Hui[1], Suzana Ab Hamid[1], Nor Azra Md Din[2], Omar Ahmed Fahmy Ahmed[4]

[1]*Department of Radiology, Hospital Sultan Abdul Aziz Shah, Universiti Putra Malaysia, Malaysia*
[2]*Seksyen Pengimejan Nuklear, Hospital Sultan Abdul Aziz Shah, Universiti Putra Malaysia, Malaysia*
[3]*Pusat Pengimejan Diagnostik Nuklear, Universiti Putra Malaysia, Malaysia*
[4]*Department of Urology, Faculty of Medicine and Health Sciences, Universiti Putra Malaysia, Malaysia*

ABSTRACT

Background
Prostate carcinoma (PCa) is the third leading carcinoma in Malaysian males and consist of 9.5% of total cases. It is one of the leading causes of cancer-related death. Thus, early detection and proper staging is crucial for improved prognosis of the disease. CT scans of the chest, abdomen, and pelvis are often used to stage PCa when it is first diagnosed. However, not all agree on when and how they should be used. Nevertheless, CT remains a quick, widely available, and practical tool for detecting the progress of PCa to bones and other organs. Contrast-enhanced computed tomography (CT) of the chest, abdomen, and pelvis is widely used for initial staging, yet its role in predicting metastasis based on clinical parameters such as Prostate-Specific Antigen (PSA) levels and Gleason scores remains under debate. There is a need for institution-specific data to refine imaging guidelines and optimize patient management strategies.

Methodology
A retrospective study was conducted involving prostate cancer patients who were followed up at Hospital Sultan Abdul Aziz Shah (HSAAS) between 2021 and 2025. Out of these, 100 patients met the inclusion and exclusion criteria. Patient records were reviewed for contrast-enhanced CT findings, PSA levels, and Gleason scores at the time of imaging.

Results
The analysis revealed that patients with a Gleason score of ≥8 and PSA levels >10 ng/mL had a significantly higher incidence of metastatic lesions on CT imaging. The diagnostic yield of contrast-enhanced CT in detecting metastasis was notably higher among these subgroups.

Conclusion
This study provides institution-specific evidence demonstrating that contrast-enhanced CT is especially effective in identifying metastases in high-risk groups (PSA >10 ng/mL and Gleason score ≥8). These results advocate for tailored imaging protocols, potentially leading to more efficient use of imaging resources and earlier intervention for high-risk patients.

Keywords: Metastatic prostate cancer, PSA Value, Gleason Score, Contrast CT

MALIGNANT PERIPHERAL NERVE SHEATH TUMOR (MPNST) OF CERVIX MIMICKING BENIGN LESION: A RARE CASE

Shamimi Mahmad Puzi[1, 2], Bazli Md Yusoff[1,2], Muhd Rifqi Rahim[3]

[1]Department of Radiology, School of Medical Sciences, Universiti Sains Malaysia, 16150 Kubang Kerian, Kelantan, Malaysia
[2]Hospital Pakar Universiti Sains Malaysia, Universiti Sains Malaysia, Health Campus, Jalan Raja Perempuan Zainab 2, 16150 Kota Bharu Kelantan, Malaysia
[3]Department of Radiology, Hospital Raja Perempuan Zainab 2, Bandar Kota Bharu, 15566 Kota Bharu, Kelantan

ABSTRACT

MPNST are very rare and aggressive soft tissue sarcomas with a poor prognosis. MPNST presenting as a gynecological mass is extremely rare. Imaging features may overlap with other differential diagnoses and hence affect the management. A magnetic resonance imaging and computed tomography examinations were performed for a 15-year-old girl who presented to the emergency department complaining of abdominal pain with a history of brownish, foul-smelling vaginal discharge for 2 weeks. She had a history of trauma before the symptoms. MRI revealed a lobulated, peripherally enhancing heterogeneous lesion within the vaginal cavity**.** She was initially diagnosed with an intraluminal vaginal infected organized hematoma. She underwent mass excision, and histopathological examination proved to be a MPNST. In this case report, we discussed the radiologic features of a malignant peripheral nerve sheath tumor. This rare entity should be considered as a differential in patients presenting with a vaginal mass of uncertain origin.

Keyword: Malignant peripheral nerve sheath tumor, sarcoma, gynaecological

ASSOCIATION BETWEEN MRI BRAIN ABNORMALITIES WITH POST-IMPLANT AUDITORY AND SPEECH OUTCOMES AMONG PAEDIATRIC COCHLEAR IMPLANT COHORT

Muhammad Hazim Azizul[1], Chong Chia Yin[1], Goh Bee See[2], Chai Jia Ning[1], Asma Abdullah[2], Wan Fazlina Wan Hashim[3], Norazlin Kamal Nor[4], Faizah Mohd Zaki[1]

[1]*Department of Radiology, Faculty of Medicine, Universiti Kebangsaan Malaysia*
[2]*Department of Otorhinolaryngology, Faculty of Medicine, Universiti Kebangsaan Malaysia*
[3]*Department of Medical Rehabilitation Service, Faculty of Allied Health, Universiti Kebangsaan Malaysia*
[4]*Department of Pediatrics, Faculty of Medicine, Universiti Kebangsaan Malaysia*

ABSTRACT

Background: Magnetic Resonance Imaging (MRI) of the inner ear and brain is a crucial assessment prior to cochlear implant for children with sensorineural hearing loss (SNHL). Incidental brain abnormalities were frequently encountered during these screening causing an impact in the decision making for cochlear implant (CI) as the associated neurological development deficits may directly affect the subsequent post-cochlear implantation rehabilitation. The objective of this study is to analyse the association between post-CI audiological and speech outcomes in children with abnormal brain imaging findings in our institution.

Methodology: MRI brain images were evaluated for any structural or nonstructural abnormality among children with severe to profound SNHL who underwent CI from January 2013 to June 2023. The significant association between these abnormalities with the 1-year outcomes of CI were correlated by measuring the Category of Auditory Performance II (CAP-II) and Speech Intelligibility Rating (SIR).

Results: Out of the total of 42 patients with pre-implant brain abnormalities in the pediatric CI cohort, 31 patients (73.8%) had non-structural abnormalities, and 11 patients (26.2%) had structural brain abnormalities. The most common structural abnormality was temporal cystic lesion (94.1%), where most of them (17 out 19 patients; 89.5%) had associated white matter (WM) lesions. Majority patients in this cohort showed improvements in CAP-II and SIR score. There was no improvement in CAP-II and SIR score in patients with ventriculomegaly and polymicrogyria.

Conclusions: The prevalence of incidental brain abnormalities in children with SNHL is 19.2% in our study cohort. There were improvements in the audiological and speech score post-CI in 95.2% of our study cohort, proving that abnormal brain imaging pre-CI should not be a limiting factor in CI candidacy. Exception applies when it comes to ventriculomegaly and polymicrogyria cases where the post-CI outcomes were guarded.

Key words: White matter lesion; Sensorineural hearing loss; Cochlear implant.

EXPLORING A RARE UREA CYCLE DISORDER: A TWO-CASE REPORT ON ORNITHINE TRANSCARBAMYLASE DEFICIENCY

Ze Xuan Tan[1], Norafida Bahari[1]

[1]*Department of Radiology, Hospital Sultan Abdul Aziz Shah (HSAAS), UPM, Selangor, Malaysia.*

ABSTRACT

Ornithine transcarbamylase deficiency (*OTCD)* is the most common inherited urea cycle disorder. It is an X-linked metabolic condition marked by encephalopathic symptoms resulting from the accumulation of urea precursors. This report describes two pediatric cases, presenting with neurological symptoms and metabolic decompensation, with a particular focus on their magnetic resonance imaging findings. A combination of imaging findings and metabolic screening as well as molecular analysis led to the diagnosis of ornithine transcarbamylase deficiency. Although both exhibited features of encephalopathy, notable differences in clinical progression, imaging patterns, and severity of presentation highlight the diverse spectrum of ornithine transcarbamylase deficiency. Recognizing the characteristic MRI findings can facilitate earlier diagnosis and intervention.

Keywords: Ornithine, OTCD, Urea cycle disorders, encephalopathy.

CASK GENE MUTATION IN A 2-MONTH-OLD BOY WITH PONTOCEREBELLAR HYPOPLASIA: A CASE REPORT

Siang Ching RC[1], Vidhyah S[2], Fatin Nur Shaheera MA[3]

[1]*Department of Biomedical imaging, University of Malaya Medical Centre, Jalan Profesor Diraja Ungku Aziz, 59100 Lembah Pantai, Kuala Lumpur, Malaysia*
[2]*Department of Radiology, Hospital Tengku Ampuan Rahimah, Jalan Langat, 41200 Klang, Selangor, Malaysia.*
[3]*Department of Paediatrics, Hospital Tengku Ampuan Rahimah, Jalan Langat, 41200 Klang, Selangor, Malaysia.*

ABSTRACT

Both pontomedullary hypoplasia (PCH) and early infantile epileptic encephalopathy (EIEE) are rare disorders that are debilitating to the child and parents. We present a case of EIEE that is caused by PCH. The child had infantile spasms at 2 months of age. EEG showed the typical burst-suppression pattern of EIEE. Ultrasound cranium showed small posterior fossa and cerebellum appearance. The MRI brain showed hypoplasia of the pons and cerebellum with residual central cerebellar vermis. Otherwise, normal appearance of the corpus callosum and adequate myelination of cerebral cortex. The patient was refractory to anti-epileptic drugs. Genetic study showed hemiazygous variant of CASK gene mutation. Increasing the understanding of this disease spectrum will lead to better care and counselling for patients and families.

Keywords: Pontocerebellar hypoplasia, early infantile epileptic encephalopathy, posterior fossa

CHORIOCARCINOMA IN CHILDHOOD: A RARE AND LIFE-THREATENING TUMOR OF TROPHOBLASTIC ORIGIN

Nur Saufiah K[1], Azian AA[1]

[1]*Department of Radiology, Sultan Ahmad Shah Medical Centre (SASMEC), Kuantan, Pahang, Malaysia.*

ABSTRACT

Choriocarcinoma is a rare, highly malignant tumour of trophoblastic origin with aggressive behaviour. Non-gestational choriocarcinoma is extremely rare in children and presents diagnostic and therapeutic challenges. This case highlights the importance of imaging, histopathology, and multidisciplinary management. We reported a 9-year-old girl presented with lower abdominal pain and progressive distension. Examination revealed a firm pelvic mass equivalent to 16 weeks gestation. Ultrasound showed a solid-cystic mass with papillary projections (10 x 8 cm), and CT confirmed a large adnexal mass causing bilateral hydronephrosis. Serum β-hCG was markedly elevated (264,400 mIU/ml). She underwent midline laparotomy, revealing a haemorrhagic left ovarian mass adherent to surrounding structures. Left salpingectomy and partial resection were performed. Intraoperative tumour rupture led to major bleeding, requiring transfusions and ICU care. Histopathology confirmed non-gestational choriocarcinoma. Overall, paediatric non-gestational choriocarcinoma is rare and mimics other ovarian tumours. Early imaging, accurate diagnosis, and multidisciplinary care are essential for effective management.

Keywords: Choriocarcinoma, trophoblastic, β-hCG

PARENCHYMAL DIFFUSIVITY IN FETUS WITH CHIARI II MALFORMATION

Wong SH[1]; Hasyma AH[1]

[1]*Hospital Sultan Abdul Aziz Shah, UPM, Persiaran Mardi- UPM, 43400 Serdang, Selangor, Malaysia*

ABSTRACT

Introduction:
Chiari II malformation describes a congenital downward displacement of the hindbrain through the foramen magnum into the spinal canal, associated with open neural tube defects, such as lumbosacral or thoracic myelomeningoceles. MR imaging of fetus is used in cases of suspected Chiari II malformation. Fetal MRI acts as an adjunct imaging in assessment of the fetal brain as well as the spinal dysraphism. Previous study demonstrated increased diffusivity in the cerebellum of fetuses with Chiari II malformations, reflecting altered CSF hydrodynamics in the posterior fossa or the indirect effects of such dynamics on membrane and fiber composition. While another study revealed lower ADC values in the brain parenchyma of the Chiari II group compared to the normal fetuses.

Materials and methods:
We identified four fetuses diagnosed with Chiari II malformation who had had fetal MRI performed. Measurement of ventriculomegaly, tonsillar herniation, ADC values of basal ganglia and cerebellum. Pearson correlation was used. Gravida, gestational age and antenatal history were obtained. We postulated that the size of the ventriculomegaly and tonsillar herniation affects the fetal cerebral and cerebellar diffusivity.

Results:
We found good inverse correlation between cerebellar ADC value and tonsillar herniation (r=-0.9586) and moderate inverse correlation between cerebellar ADC values & ventricular size (r=-0.583). Low inverse correlation between basal ganglia ADC value and tonsillar herniation(r=-0.33). No correlation was found between basal ganglia ADC value with ventricular size.

Conclusion:
The degree of tonsillar herniation in Chiari II malformation determines diffusivity of the basal ganglia and cerebellum with more diffusion restriction demonstrated with higher degree of tonsillar herniation.

Keywords: Chiari Malformation II, tonsillar herniation, ventricular size, diffusivity, cerebellum, basal ganglia