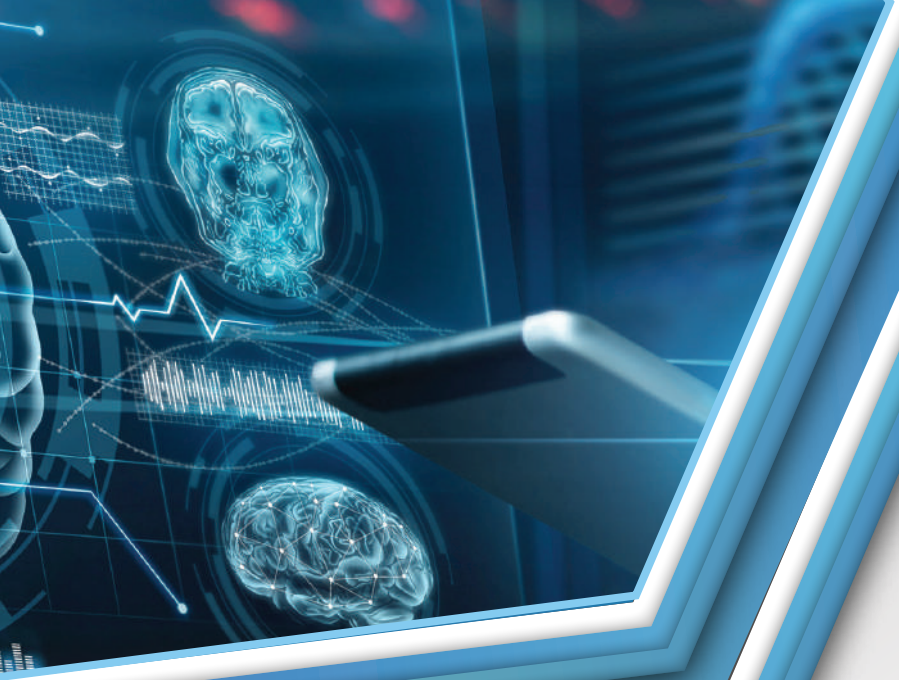

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Date

21st – 23rd July 2023

MCOR

Theme

Intertwining Foundation With Innovation

ABSTRACT BOOK

The design of the cover page was inspired by the seamless blending of state of the art imaging modalities and techniques with traditional Malay art to signify the theme chosen for the Malaysian Congress of Radiology 2023.

Foreword

We stand at the crossroads of medical progress, where the intricate tapestry of tradition intertwines seamlessly with the boundless realms of innovation. The Malaysian Congress of Radiology 2023, held from 21-23rd July 2023 in the vibrant city of Kuala Lumpur, serves as a beacon for the convergence of foundational knowledge and cutting-edge advancements in the field of radiology.

Within the pages of this abstract book, we present the culmination of intellectual pursuit and scientific rigor, showcasing the top 100 abstracts carefully curated from a pool of brilliant minds. The theme of "Intertwining Foundation with Innovation" encapsulates the essence of this congress, as radiologists, radiology trainees, and allied health professionals come together to explore the harmonious interplay between time-honoured practices and pioneering technologies.

I commend the dedication and expertise of all those who have contributed to this abstract book. May it inspire fruitful discussions, ignite fresh insights, and foster collaborations that will shape the future of radiology, ensuring the highest standards of patient care and medical excellence.

Dr. Farhana Fadzli

Organising Chair

Malaysian Congress of Radiology 2023

Dr Anuradha P.S Janardhanan

Scientific Chair

Malaysian Congress of Radiology 2023

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ORAL01

TOWARDS ESTABLISHING NATIONAL DIAGNOSTIC REFERENCE LEVELS FOR CARDIAC COMPUTED TOMOGRAPHY ANGIOGRAPHY IN MALAYSIA: A MULTICENTRE CROSS-SECTIONAL SURVEY

K Karuppannan J & Abdullah H, Mohd Hayazi MI, Azmi MI, Awang KA, Syed Abas SI, Shamsuddin MH, Md Ariffin N, Othman N
Hospital Sultanah Aminah

Keywords: *Cardiac Computed Tomography Angiography (CCTA), Diagnostic reference level (DRL), Dose-Length-Product (DLP) and CT volume dose index (CTDI vol).*

Background
The prevalence of coronary artery disease (CAD) continues to increase and utilization of Cardiac Computed Tomography Angiography (CCTA) for diagnosis and management has become increasingly important. However, potential for patient exposure to radiation necessitates critical radiation protection measures. This study seeks to evaluate patient radiation dose levels and establish a local diagnostic reference level (DRL), which will inform the proposal of a national DRL for CCTA. Additionally, the study aims to conduct an audit and analysis of current CCTA protocols, with the goal of improving the quality of diagnostic procedures.

Methodology
Cross-sectional study examined CCTA exams performed at five specialized cardiac CT centres throughout Malaysia. Selective patient study parameters, including routinely done CCTA combined and calcium scoring, were extracted from local databases between August 1st and September 31st, 2022. The study analysed Dose-Length-Product (DLP) and CT volume dose index (CTDI vol) values at the 75th, 50th, and 25th percentiles.

Results
DRL for combined CCTA and Calcium Scoring are 240.4 and 307.8 for $CTDI_{vol}$ and DLP respectively at 75^{th} percentile.

Conclusion
Despite variations in machine capabilities and scanning protocols among the centres, the extrapolated CTDI and DLP values were either comparable or superior to other. Ultimately, this study will contribute to the development of improved CCTA protocols. The next step is to establish national DRL values to standardize service with regular audits and follow-up studies to ensure optimal radiation quality assurance practices.

ORAL02

THE FEASIBILITY OF CONTRAST-ENHANCED CT TO IDENTIFY THE ADHESIVE RENAL VENOUS TUMOR THROMBUS OF RENAL CELL CARCINOMA

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Keywords: *Tomography, X-ray computed; Carcinoma, Renal Cell; Thrombosis; Adhesives; Inflammation*

Background
To identify adhesive renal venous tumour thrombus (RVTT) of renal cell carcinoma (RCC) by contrast-enhancement CT (CECT).

Methodology
Our retrospective study included 53 patients who underwent preoperative CECT and pathologically confirmed RCC combined with RVTT. They were divided into two groups based on the intra-operative findings of RVTT adhesion to the venous wall, with 26 cases in the adhesive RVTT group (ARVTT) and 27 cases in the non-adhesive group (NRVTT). The location, maximum diameter (MD) and CT values of tumours, the maximum length (ML) and width (MW) of RVTT, and length of inferior vena cava tumor thrombus were compared between the two groups. The presence of renal venous wall involvement, renal venous wall inflammation, and enlarged retroperitoneal lymph node were compared between the two groups. A receiver operating characteristic curve was used to analyze the diagnostic performance.

Results
The MD of RCC and the ML and MW of the RVTT were all larger in the ARVTT group than in NRVTT group ($P = 0.042$, $P < 0.001$ and $P = 0.002$). The proportion of renal vein wall involvement and renal vein wall inflammation were higher in the ARVTT group than in NRVTT groups (both $P < 0.001$). The multivariable model including ML and vascular wall inflammation to predict ARVTT could achieve the best diagnostic performance with the area under the curve, sensitivity, specificity, and accuracy of 0.91, 88.5%, 96.3%, and 92.5%, respectively.

Conclusion
The multivariable model acquired by CECT images could be used to predict RVTT adhesion.

ORAL03

COMPARISON OF RADIOMIC FEATURES OF SELF-DEVELOPED KIDNEY PHANTOM WITH RENAL CELL CARCINOMA

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Keywords: *radiomic feature, kidney phantom, RCC*

Background

Type over here Many studies on renal cell carcinoma (RCC) were mostly based on analysis of images of conventional computed tomography (CT), which was often interfered by human factors and lack of quantification. This research aims to find the correlation with the PDMS phantom sample by conducting texture analysis using 3D Slicer

Methodology

Type over here The phantoms were scanned with different four potentials (kVp) to test the reproducibility of the texture features as the phantom should portray stability and not be influence by other factors. In total 33 patients' CT images with stage 1 RCC were segmented by 3D Slicer and consequently compared with CT scan images from kidney patients obtained from The Cancer Imaging Archive (TCIA). Subsequently, performance evaluation was done using SVM and a confusion matrix.

Results

In this study eighteen (18) features that show good robustness from 96 features were selected through heatmap analysis**.** There was a statistically significant correlation between the texture features with no perceptible difference noticed based on the variations in kilovolt of 80 kVp, 100 kVp, 120 kVp and 140 kVp. The segmentation using semiautomatic mode had a significant correlation between the phantom's tumor and stage 1 RCC in the first-order class features. In contrast, the manual segmentation method did not have a significant correlation between phantom's tumor and stage 1 RCC. The classification model for kidney VS PDMS has higher performance than the classification model for kidney tumor phantom VS RCC.

Conclusion

There is a significant correlation between the radiomic features of self-developed kidney phantom and renal cell carcinoma. Finally radiomics analysis showed that kidney tumor phantom able to mimic the RCC as it has low accuracy compared to PDMS vs kidney. **Thus suggest this phantom is stable, viable and can be used for CTTA**.

ORAL04

VISION LOSS- AN UNUSUAL PRESENTATION OF LUNG CARCINOMA

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Keywords: *choroidal metastases, lung cancer, oncology imaging*

Introduction

Once considered a rare entity, choroidal metastases are now the most common intraocular malignancy in the adult population. In a review of patients dying from the malignancy, 8% displayed choroidal metastases on autopsy. Most ocular metastases, however, go undetected unless they affect the vision or cause proptosis. Choroidal metastases tend to become apparent late in the course of malignancy and are associated with disseminated disease and poor prognosis.

Report

A 63-year-old male presented with painless, progressive loss of vision in the right eye for 6 months. There were no known comorbidities. Right eye visual acuity perception of light and left eye 6/6, N6. On fundus examination, choroidal mass and exudative retinal detachment(RD) in the right eye was seen. Thereafter, the chest radiograph revealed left lower lobe mass which on biopsy was proven to be adenocarcinoma. MRI brain showed choroid metastasis with RD in the right eye along with cerebral and cerebellar metastases. PET scan showed lung primary and disseminated metastases to the right choroid, brain, liver, pancreas, adrenals, and bones.

Conclusion

9–11% of patients present with no symptoms and lesions may be found on routine ocular examination thus making regular eye screening mandatory in all cases of metastasis. With increasing treatments available leading to longer survival rates for cancer patients, metastases have the potential to become more prevalent. Effective control of these lesions is imperative. Systemic chemotherapy allows tumor control in some cases, while focal therapy is advised in tumors causing visual loss or is unresponsive to systemic treatment.

ORAL05

ROLE OF POSTCONTRAST T2FLAIR IN POSTCONTRAST MRI BRAIN

Rajul Rastogi
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Keywords: *brain,MRI,lesions,edema,scans,images,pathologies,patients,tumors necrosis*

Background

Usually pre & postcontrast T1GRE scans are compared to assess lesion vascularity, internal necrosis, or breach in blood brain barrier in MRI brain scans. However, post-gadolinium enhancement is also seen on T2-fluid attenuated inversion recovery (T2FLAIR) images because of T2-prolongation effect of various lesions and T1-shortening effect of gadolinium acting in synergism. Hence, we share our experience on postcontrast T2FLAIR images in variety of brain pathologies.

Methodology

Eighty patients with brain pathologies underwent noncontrast and postcontrast MRI brain examinations on 1.5T MR scanner. Noncontrast and postcontrast 3D-T1GRE and 3D-T2FLAIR images in high-resolution matrix were used and data was compared in different disease entities.

Results

Postcontrast-T1GRE images are superior to postcontrast-T2FLAIR images in delineating degenerating cysts of cysticercus, in demonstrating internal air and perilesional edema in patients with pyogenic abscesses, in determining the extent of meningeal enhancement especially in sulcal spaces (especially in tubercular meningitis) and dural sinuses due to presence of luminal signal void of sinus lumen on T2FLAIR images; in determining the nature of internal contents and number of lesions in cases of tuberculoma with an additional advantage of demonstrating edema; in determining the nature of internal contents and mural characteristics in cases of intracranial tumors and may obviate the need for noncontrast-T2FLAIR images.

Conclusion

Postcontrast-T2FLAIR images may be used as an additional tool to postcontrast-T1GRE scans in MRI of a variety of brain pathological conditions as it provides additional clinical information helpful in management and predicting prognosis.

ORAL06

OUR INITIAL EXPERIENCE WITH CARDIAC MRI IN A TERTIARY HEALTH CARE CENTER IN NEPAL

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Keywords: *Cardiac Magnetic Resonance (CMR), Viability, Hypertrophic cardiomyopathy (HCM), Dilated cardiomyopathy (DCM), Myocarditis, Nepal*

Background
Cardiac Magnetic Resonance (CMR) is a crucial non-invasive imaging technique for the thorough evaluation of the heart in various cardiovascular conditions. The potential to offer quantitative data on cardiac viability, perfusion, and function make CMR an exceptional choice of imaging providing functional and morphological information about the heart. We performed cardiac MR evaluation of patients over a period of 12 months. Our aim was to establish the common cardiac MR indications and the diagnosis in different age groups of a low socioeconomic status country as Nepal.

Methodology
A retrospective analysis of patients undergoing CMR at Shahid Gangalal National Heart Center, Kathmandu, Nepal over the period of 12 months, from October 1, 2021 to September 30, 2022 was done. All patients who underwent cardiac MRI at our center, irrespective of age, sex, and indication were included in the study. A total number of 392 patients were included who had performed Cardiac MRI on a 3Tesla platform at our center. The respective protocols were followed based on the indication of each patient undergoing CMR. Data were entered in a predesigned proforma and SPSS was used for the analysis.

Results
The most common indication to perform CMR was found to be the myocardial viability test. Among 147 patients (37.5 % of the study population) assessed for myocardial viability, 120 (81.6 %) showed infarction in the left anterior descending (LAD) territory, 17 (11.5 %) showed LCX territory infarction and 10 (6.8 %) showed RCA territory infarction.The most common cardiomyopathy diagnosed with cardiac MRI at our center was hypertrophic cardiomyopathy (HCM) (15.5 %) followed by dilated cardiomyopathy (DCM) (10.0 %). Other cardiac MR diagnoses of patients were congenital heart disease (CHD) (5.8 %), valvular heart disease (VHD) (3.0 %), myocarditis (3.0 %), arrhythmogenic right ventricular cardiomyopathy (ARVC) (5.6 %), cardiac mass/pseudo mass (2.0 %), pericarditis (1.7 %), and others (3.3 %). While about 48 number of patients that represents about 12.2 % of the total study population who underwent cardiac MRI had normal CMR findings.

Conclusion
Cardiac MRI is an excellent imaging modality in the evaluation of different groups of cardiovascular diseases. It provides additional information regarding the diagnosis and management of patients with different cardiac conditions. Hence, the use of CMR is encouraged in clinical practice to implement early and appropriate therapies that may ultimately improve patient outcomes.

ORAL07

A RETROPSPECTIVE STUDY OF CT IMAGING OF PULMONARY EMBOLISM IN PATIENTS WITH COVID-19 PNEUMONIA USING DUAL ENERGY CT

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Keywords: *CT pulmonary angiography (CTPA), dual energy computed tomography (DECT), Pulmonary embolism(PE)*

Background
Pulmonary Embolism(PE) is a known complication of COVID-19, and CT pulmonary angiography (CTPA) is commonly recommended for its detection. DECT offers additional value in diagnosing COVID-19 and its complications, particularly in detecting small pulmonary emboli. The aimed of this study is to assess the presence of PE , to determine the location of the thrombus and assess the utility of iodine density mapping in evaluating embolism with DECT.

Methodology
Retrospective study from May until September 2021 conducted on 163 patients with COVID-19 infection (positive PCR) and suspected PE.

Results
163 patients PE suspicions with confirmed COVID-19 underwent CTPA. 19 patients were diagnosed with PE with a predominant segmental distribution. All the PE positive patients showed increased in D-Dimer value. Interestingly, four cases initially interpreted as PE negative by the previous radiologist were later found to be PE positive. The study found no significant difference in detecting pulmonary embolism between the conventional algorithm and dual-source energy reconstruction. However, DECT demonstrated practical advantages over conventional CTPA in detecting acute PE.

Conclusion
Currently, DECT is not considered a routine diagnostic procedure for evaluating PE according to guidelines. However, with increasing familiarity among radiologists and adjustments in image acquisition and post-processing methods, the application of DECT for PE evaluation could expand. This could lead to the recognition of its benefits and the potential to enhance the detection and confident diagnosis of pulmonary embolism.

ORAL08

CONCURRENT MIXED-METHOD ANALYSIS ON PATIENT SATISFACTION WITH THE SERVICES OF THE MEDICAL IMAGING DEPARTMENT OF A TERTIARY PUBLIC HOSPITAL TOWARD POLICY DESIGN

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Keywords: *Patient Satisfaction, Medical Imaging, Policy Design*

Background

The Department of Health (DOH) implemented the Customer Satisfaction Survey (CSS) to support and to strengthen its initiatives and efforts toward high-quality healthcare services in the Philippines. Through good governance and quality requirement of ISO 9001: 2015, CSS helps in preventing and discouraging the occurrence of fraud, abuse of power, graft, and corruption in the public sector. Its main purpose is to keep an eye on things, confirm that the required activities are being taken, respond, and implement policy control mechanisms in a government unit. In the Las Piñas General Hospital and Satellite Trauma Center (LPGH-STC), CSS is conducted by the different Process Owners including the Medical Imaging Department (MID). Results of the survey were tallied and compiled monthly and served as basis in creating policies and guidelines that will provide safe and excellent healthcare to its clients with the best standards in teaching, training, and research.

Methodology

A mixed-methods concurrent design was adopted for this study. The quantitative and qualitative responses were collected simultaneously from the Client Experience Survey (CES) Form prepared by the Medical Imaging Department by combining the narrative responses with the rating scale responses from 2020 to 2022. For the quantitative analysis, that is, the assessment of the patients' satisfaction, the responses to the 5-point level of agreement scale on the different attributes of the MID were presented using the frequencies and percentages and were summarized using the median and interquartile range. The answers to the open-ended question as well as comments written on the Likert scale were treated as qualitative data. Patterns of similar patient descriptions of their level of satisfaction on the treatment and services they received were the themes identified and analyzed.

Results

The four types of patient feedback drawn from the 56 comments are classified into compliments, complaints, requests, and appreciations. Since most of the comments received are compliments and appreciations, then the patients are satisfied with the kind of care they received from the department. For instance, descriptions of effective patient care include "fast or quick and smooth service", "kind" staff, and "modern equipment". This suggests that patients perceive patient care as effective when the staff is accommodating while moving at a speedy pace. Its implication on policy design is reducing steps or using digital tools in the request processing and rewarding effective personnel performance.The four criteria of effective healthcare staff performance in the order of preference are cordial, caring, courteous, and competent. These criteria are drawn from observable behavior that satisfies a patient's expectation of quality service instead of technical skills and mastery of hospital and healthcare systems. Moreover, patients feel better when personnel are allowed to maintain a friendly and casual demeanor. Although the patients prefer these, it does not diminish the significance of providing employee training to improve healthcare service and prioritizing technical know-how. Therefore, personnel training on a confident and professional yet friendly demeanor needs to be provided for everyone on staff.

Conclusion

In this study, the implication on policy design is reducing steps or using digital tools in the request processing and rewarding effective personnel performance was established. Moreover, personnel training on a confident and professional yet friendly demeanor needs to be provided for everyone on the Medical Imaging department. Most of the positive feedback suggests the patients as clients' satisfaction on the quality of health care received from the medical personnel including staff, nurses, and doctors. However, there is an urgent need to improve the waiting area specific to comfort especially during warm weather months of March to May. To cool down the area, it is recommended to require professional architectural and engineering services in designing a manageable ventilation system. If feasible,

plants can also be included in the area to ease the tension of the patients waiting for their results and tests. Suggested changes in personnel training to continue the culture of quality performance includes an institutionally defined set of actions that reflect intelligent kindness. This can be done through asking the staff to first determine acceptable actions of kindness in a given number of situations commonly encountered by the department. Once the list of descriptions is provided, the management would narrow down the list into a personnel manual or handbook. By providing the staff with clear guidelines on institutional value base in line with the hospital's vision mission, it is expected that the patient's perception of the staff's kindness is no longer singular but departmental.

ORAL09

WHOLE BODY COMPUTED TOMOGRAPHY (WBCT) : CLINICAL AUDIT OF HOSPITAL KUALA LUMPUR EXPERIENCE USING HIGH IMPACT TRAUMA COMPUTED TOMOGRAPHY (HIT CT) PROTOCOL

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Keywords: Whole Body Computed Tomography (WBCT), High Impact Trauma Computed Tomography (HIT CT) protocol, clinical audit

Background

Trauma is one of the leading causes of death and disability for adults worldwide. The use of computed tomography (CT) has developed to become an essential part of the management of patients with acute traumatic injuries. In 2017, the Health Technology Assessment Section, Medical Development Division, Ministry of Health Malaysia had published a paper titled 'Whole Body Computed Tomography (WBCT) In Adult With Major Blunt Trauma Injuries', suggesting that usage of WBCT early in the management of major blunt trauma injuries seemed to be clinically efficient, cost-effective and fairly safe. In Hospital Kuala Lumpur, our Radiology Department, together with team from Emergency and Trauma Department, had adopted the published proposed triage criteria for WBCT in adult major blunt trauma with some changes to suit our practices and named the protocol as High Impact Trauma Computed Tomography (HIT CT) protocol which we started to use from January 2022.

Methodology

The purpose of the clinical audit is to assess the HIT CT protocol and the triage criteria in clinical practice. Data from trauma cases that had undergone CT examination using the HIT CT protocol from January till June 2022 were collected and reviewed. Subsequently, the triage criteria for the HIT CT protocol was revised based on the audit result. The newly refined criteria for the CT examination was implemented on January 2023. Another data collection for trauma cases that had used the new criteria was carried out for the period of January till June 2023.

Results

For the first phase of the clinical audit (period of January till June 2022), a total of 115 cases were performed whereby 41% of the CT examination showed negative or minor findings, with 59% of cases showed significant thoracic and abdominal injuries. One of the triage criteria, the mechanism of injury, was found to be least predictive for the severity of the traumatic injuries. Therefore, this triage criteria was excluded in the new and refined criteria for the HIT CT examination. We are still collecting data for the second phase of the audit (period of January till June 2023). Its preliminary result so far showed reduction in the percentage of cases with negative findings to 25%.

Conclusion

In conclusion, when the WBCT (HIT CT protocol) is used judiciously, it becomes an important tool in the management of patients with major acute trauma injuries as it reduced the time-delay for CT examination and assisted in the early diagnosis of the injuries, especially in cases of multi-organ injuries.

ORAL10

ASSOCIATION OF CHEST X-RAY SEVERITY SCORES WITH CLINICAL OUTCOMES OF COVID-l9 IN A TERTIARY HOSPITAL IN MAKATI FROM MARCH 2021 T0 MARCH 2022

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Keywords: *Patients, Severity, Hospitalization, Outcomes, Care, Disease, Chest Patient, Threshold, Mortality*

Abstract

Coronavirus disease 19 (COVID-19) disease has emerged as an unprecedented health care crisis in the Philippines. In an effort to alleviate the burden on tertiary care centers, multiple alternate care sites and vaccines have been administered since March 1, 2021. To efficiently manage patients, risk stratification as well as prediction of clinical outcomes was evaluated through the use of severity scoring systems. This study determined the association between modified Chest X-ray Severity Scores and patient's clinical outcomes among COVID-confirmed in-patients at Ospital ng Makati. Patients that tested positive for COVID-19 who were hospitalized between the dates of March 2021 and March 2022 were included. The initial and highest threshold value chest x-rays of these patients taken during hospitalization were scored. Patients were grouped according to the threshold value of the CXR score, and demographic data and vaccination status. A total of 1160 patients were included in this retrospective cross-sectional study. It was determined that finding a CXR score threshold value of 6 or above during hospitalization predicted poor clinical outcome (mortality, admission to ICU and intubation). Hence, chest radiography, through the use of chest severity scoring, can be considered as an additional tool for risk stratification of patients and decision regarding hospitalization and close monitoring of specific patients with COVID-19 pneumonia.

ORAL11

OPHTHALMIC ULTRASOUND IN OCULAR EMERGENCIES

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Keywords: A/B-Scan, 10 MHz, Endophthalmitis, Retinal Detachment

Background

The Ophthalmic Ultrasound over the years became a true necessity in most if not all ophthalmic Clinics/set up.True ophthalmic emergencies are cases if not treated immediately will cause permanent sight damage or even blindness. Endophthalmitis, penetrating eye injury, Intra ocular foreign bodies are true examples.Ophthalmic Ultrasound is a harmless, noninvasive procedure that can be used as long as needed and does not require any special setting. It is very valuable, and it will indicate the severity of disease, location of tumor or foreign body with accuracy.

Methodology

Ophthalmic Ultrasound unit Aviso A/B-scan (Quantal Medical) with 10 MHz posterior Segment Ophthalmic Ultrasound Transducer and 50 MHz Ultrasound Bio Microscopy (UBM) transducer

Results

In our clinical setup, all patients with ocular traumas, suspicion of Intra ocular foreign bodies as well as tumours are sent to the Diagnostic Imaging Department for Ophthalmic Ultrasound as the first tool for assessment. It has proven to be extremely accurate in diagnosis of ocular infection like endophthalmitis, very accurate in identifying the location of IOFB as well as assessment of the integrity of ocular wall post traumas. Extremely helpful and accurate in the diagnosis of Retinal Detachment especially if involving central vison (Macula area).

Conclusion

Ophthalmic Ultrasound is considered the first line in diagnosing Endophthalmitis, gives accurate location for IOFB and retinal detachment before surgery and is used as true measurement tool in many international institutes for assessment of tumors.

ORAL12

COMPARISON OF MR ARTHROGRAPHY WITH CONVENTIONAL MRI IN CASES OF SHOULDER INJURIES

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Keywords*: MR arthrogram, shoulder injuries , Rotator cuff*

Background
Lesions of the rotator cuff are a common occurrence affecting millions of people across all parts of the globe. Improper athletic technique, poor muscular conditioning, poor posture may result in a progression of injury from acute inflammation, to calcification, to degenerative thinning, and finally to tendon tear. Modern radio-diagnostic means of ultrasonography, magnetic resonance imaging, and magnetic resonance arthrography provide excellent visualization of structural details and are crucial in determining further course of action for these patients.

Methodology
Study Setting:
The present study will be carried out in a tertiary care teaching hospital in North India.
Study design:
The present study will be undertaken as a prospective cross-sectional comparative study of diagnostic accuracy.
Study period:
Jun 2019 to July 2022 .
Study Population:
Patients referred to the department of Radiodiagnosis with suspect rotator cuff pathology for imaging.
Inclusion Criteria:
Patients who are clinically suspected to have a rotator cuff pathology, both acute and chronic.
Exclusion Criteria:
- Patients with metallic implants, cardiac pacemakers

Result
A total 50 patients were included in study. Patients were evaluated with clinical history and MR imaging and arthrography . The characteristics of different rotator cuff disorders were described. Arthroscopy was considered as a gold standard for diagnostic accuracy.

Conclusion
We conclude that magnetic resonance arthrography (MRA) is well suited for detecting rotator cuff injuries. The presented diagnostic results of MRA are superior to the results of magnetic resonance imaging. Therefore, MRA can act as a reliable diagnostic tool prior to arthroscopic or surgical intervention.

ORAL13

MOLECULAR AND RADIOLOGICAL CHARACTERIZATION OF GLIOBLASTOMA BASED ON MRI SEQUENCES

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Keywords: *Glioblastoma, MRI, Diffusion weighted imaging, histopathology*

Background

Gliomas are the most common form of primary malignant brain tumors which originate from glia and/ or their precursor cells within the central nervous system.Despite surgical intervention and clinical management, the average period of survival for GBM patients ranges between 12 to 15 months. Despite extensive research and development of new treatment protocols, these statistics have not changed significantly in the past decade. Hence, new treatment strategies are sought.The previous term multiforme refers to the tumor displaying areas of necrosis and hemorrhage on gross examination and on microscopic analysis areas of pleomorphic nuclei, cells, pseudo-palisading, necrosis and microvascular proliferation. These varied morphologic features indicate the existence of heterogeneous cell populations within the tumor.The molecular heterogeneity of GBM is evidenced by the expression studies of oncogenes and the brain tumor. Isocitrate dehydrogenase 1 (IDH 1) and IDH 2 are involved in a variety of cellular function including cellular metabolism, histone and DNA methylation, and hypoxia sensing and collagen modification.IDH 1 (cytosolic) and 2 (mitochondrial) catalyze the oxidative decarboxylation of isocitrate to alpha-ketoglutarate to reduce NADP to NADPH. IDH mutations have been shown to produce oncometabolite, 2-hydoxyglutarate. This, in turn, antagonizes alpha-ketoglutarate to competitively inhibit alpha-keto dependent dioxygenases, histone and TET family demethylases. IDH mutations are also associated with glioma-CpG island causing hypermethylation, changes to hypoxic response, oxidative stress and epigenetic silencing. A meta-analysis showed that mutations in (IDH1) and IDH2 genes are closely linked with genomic profile of glioma and are potential biomarkers of secondary GBM.BTSC, expressing CD44 and CD133 markers, are involved in GBM initiation, recurrence, metastasis and treatment resistance. stem ceCD133 as a cancer stem cell marker plays a significant role in GBM. Therefore, CD133 could potentially be used as a therapeutic target in GBMs.Similarly, CD 44 antigen could be a therapeutic target.Despite heterogeneity of GBM at a molecular level being assured, surgically it is still treated as a homogenous mass and resected.Magnetic resonance imaging (MRI) sequences also show heterogeneity within a tumor. It allows the observation of functional, hemodynamic, cellular, metabolic and cyto-architectural evidence in a single mass.For this purpose a reliable method for detection of features of GBM is Apparent Diffusion Coefficient (ADC) as well as Contrast Enhancement (CE). The images collected using ADC reflect the density of the tissue and the magnitude of water molecule diffusion within it.On the other hand, MRI using CE with agents such as gadolinium allow the identification of areas of necrosis, active proliferation with insufficient blood supply and disruption of BBB. Additionally, Barajas et al using microarrays have shown distinct RNA expression in areas of different ADC tumor regions.This study aims to plot contrast enhanced regions against Apparent diffusion coefficient of Glioblastoma to characterize four regions at cellular and molecular levels.o chemotherapy and

Methodology

20 patients diagnosed with GBM during 1st January 2016 and 31st December 2017 presenting at Aga Khan University Hospital, Karachi Pakistan, were identified and recruited for this study.

Radiological identification of tumour regions

After receiving written consent of patients to participate in the study and publish of any obtained data, as well as accompanying images, MRI of 20 patients were collected with a 1.5-T Scanner (Avanto, Siemens). 3D Neurovigation Raw Data were acquired from Post contrast. Parameters for axial diffusion weighted imaging were as follows: repetition time msec/echo time msec, 10 000/99; 5-mm section thickness; no intersection gap; 24-cm field of view; and 1000 sec/mm2 b value. The ADC was generated using syngo MR D13 software (MAGNETOM Avanto). The two radiological markers using MRI are ADC and contrast enhancement (CE) were

identified by a single Neuroradiologist with more than seven years of post fellowship experience. Four separate regions of the tumor were identified based on the PACS based on the ADC and CE values as follows: 1) low ADC and high CE, 2) low ADC and low CE, 3) high ADC and high CE and 4) high ADC and low CE.In order to ensure accurate tissue sampling BrightMatter™ Servo was used in all cases. BrightMatter™ Servo is a novel integrated system comprising of a video microscope (BrightMatter™ Drive) that can align to surgical instruments and a neuronavigation system (BrightMatter™ Guide) that can display whole brain tractography. Predetermined segments of patient's tumor were resected using regional sampling using BrightMatter™ Servo.[17] In this study images of pre-identified areas on the basis of radiological properties were exported from the BrightMatter ™ Plan to the BrightMatter™ Servo. Using the ADC mapping and tractography, BrightMatter™ Servo was navigated to the target areas through a safe trajectory. To minimize the effect of brain shift, samples were taken by two Neurosurgeons with more than twenty and seven years of experience before debulking of the tumor. Approximately 1 cm^3 samples were obtained from each of the four target areas.

Immunohistochemistry

The biopsy samples were fixed in 10% buffered formalin and processed to preserve in paraffin wax as previously described.[18] For immunohistochemistry experiments, 5µm thick sections were cut, deparaffinized and dehydrated, followed by incubation in antigen retrieval solution (Dako). Then the sections were blocked with bovine serum albumin and incubated with primary antibodies anti CD-44 (Abcam, cat# ab51037) or CD133 (Abcam, cat# ab19898) or anti-IDH (Abcam, cat# ab81653). Then using the previously described protocol for immunohistochemistry experiments[14], 5µm thick sections were cut, deparaffinized and dehydrated, followed by incubation in antigen retrieval solution (Dako). The EnVision horseradish peroxidase kit (Dako, cat# K5007), which contained the secondary antibody, was used to develop DAB labelling of the areas of sections that had primary antibody bound to them. The sections were then counter stained with hematoxylin. Separately, sections from all 4 areas of the GBM from 20 patients were stained with H&E and examined for differences in nuclear pleomorphism, vascularity, necrosis and mitotic activity.

Immunohistochemistry Analysis

The slides were analyze by 2 independent observers. The histological features were qualitatively analyzed for nuclear pleomorphism, vascularity, necrosis and mitosis, from the radiologically distinct area from where the biopsy samples were collected. For immunohistochemistry using antibodies against CD44, CD133 and IDH qualitative analysis was conducted on the above mentioned radiologically distinct areas. For each immunohistochemistry experiment a blank and a positive as well as negative control was run to ensure the accuracy of results. Percentage of tumor cells exhibiting positive staining was calculated in each case. Positive expression was labeled when more than 1% cells demonstrated positive expression, as described in previous studies.[15,16] Percentages of positive cases were compared in different regions. In each region, positive cases were assessed whether the expression was diffuse or confined to perivascular region as stem cells are usually present in perivascular location. Positive cases were also assessed to see the relationship of IHC expression with the nuclear pleomorphism. Since CD44 and CD133 are stem cell markers we hypothesized that their expression will be more marked in poorly differentiated cells being originated from stem cells.

Results

In this study we have shown that ADC and CE MRI can be used to describe four distinct areas of GBM. Furthermore, not only do these areas have distinct radiological features, but they also express distinct cellular characteristics, making them independent at histological level. Interestingly, the vital cellular characteristics of nuclear pleomorphism, vascularity and necrosis were distinctly present in Region 2 (where both ADC and CE are low).One possible explanation for this could be that Region 2 is an area with high density pleomorphic cells which require extra blood supply. This results in growth of new blood vessels, however, they are not enough to fulfill the requirement of the growing area. This could result in apoptosis leading to necrosis.Identifying IDH as a marker of malignancy for GBM could be useful . However, is the expression of IDH uniform across the entire tumor or does it follow a specific pattern?One of the most interesting finding of this study was that two stem cell markers, CD133 and CD44 showed completely different expression

patterns when looked at from radiological perceptive. Of note is the fact that CD133 and CD44 plays different roles in the cells. CD133, is a member of pentaspan transmembrane glycoproteins, which is specifically localized in cellular protrusions . Similarly, CD44 is a cell surface glycoprotein which is a receptor for hyaluronic acid and participates in cell-cell adhesion, migration and interaction, lymphocyte activation, recirculation and homing, hematopoiesis, and tumor metastasis . It is possible that the stem cells in these radiologically distinct areas mutate when they slightly further down the generation line. Never the less, we have reported that highest expression of CD133 can be associated with Region 3 and highest expression of CD44 can be associated with Region 1.Since the correlation between radiologically distinct areas and cellular characteristics of GBM have not been previously defined. For neurosurgeons to differentially perform surgery of GBM the findings of this study can be used as a road map for their own surgeries that which areas of GBM needs to be removed more aggressively and which area as per routine. However, whether this approach changes the long term survival of patients, remains to be seen.

Conclusion

Protein expression of oncogene IDH and stem cell markers CD44 and CD133 not uniform across radiologic ally distinct regions of Glioblastoma.This study has provided the first evidence that radiological characteristics can be used to predict the histological and cellular characteristics of Glioblastoma.

ORAL14

CORRELATION OF CEREBROSPINAL FLUID (CSF) DENSITY WITH THE SEVERITY AND CLINICAL OUTCOME OF TRAUMATIC BRAIN INJURY (TBI) IN RECENT HEAD TRAUMA PATIENTS IN ILOCOS TRAINING AND REGIONAL MEDICAL CENTER (ITRMC)

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Keywords: *TBI, CSF density, CT scan*

Background
Traumatic brain injury (TBI) is sudden damage to the brain caused by a blow or jolt to the head. Prompt and proper management of TBI can significantly alter their course especially within 48 hours of injury. This study aims to determine if there is a significant correlation between CSF density measured on non-contrast cranial CT scan and the severity and clinical outcome of patients who sustained recent head trauma.

Methodology
This study employed a cross-sectional retrospective study design. The study population consists of patients who sustained recent head trauma/injury during a time period from January 2018 to December 2018 who have undergone non-contrast CT scan imaging at the Ilocos Training Regional and Medical Center radiology department.

Results
A total of 361 patients were included. Majority of the subjects were ages 36 +/- 19 (X+/- SD). Most of the patients are male (75.9%). Vehicular accident is common (87.8%). Study findings show that the increase in the CSF density among the patients was significant using the Mann-Whitney U test; Kolmogorov–Smirnov test; and Chi-square test (P=<0.00001). Correlation between CSF density and severity of TBI assessed by GCS on admission using the Pearson Product Moment Correlation indicated that there is negative moderate relationship between CSF density and GCS (R= -0.58922). Findings also show that there is a significant correlation between CSF density and the clinical outcomes of patients who sustained head trauma (Chi square=116.7527, P value <0.00001).

Conclusion
There is significant increase in the CSF density measured on non-contrast cranial CT scan among patients who sustained recent head trauma with evident abnormal findings (mean CSF density of 15.372, P= 0.000). An increase in CSF density correlates with the severity of head trauma (based on the Glasgow Coma Scale) such that increased CSF density was observed in those with poorer/ severe GCS status. Also, there is significant correlation between CSF density and clinical outcomes of patients who sustained recent head trauma. Increased CSF density was predominantly found in those who were admitted, subsequently received surgical intervention and those who died.

ORAL15

PATTERNS AND SCORING OF COVID-19 CXRS WITH PATIENT OUTCOMES, A RETROSPECTIVE DESCRIPTIVE STUDY

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Keywords: *COVID-19 Malaysia, CXR, Brixia-score, patients' outcomes*

Background:
To describe COVID-19 patterns on CXR and to determine association between Brixia-score and patient outcomes in Malaysia.

Methodology:
Descriptive retrospective descriptive study of 241 COVID-19 patients admitted to Hospital Kuala Lumpur which includes patients aged above 18-year-old with positive RT-PCR and initial CXR during admission (01.03.2020-30.06.2020). Radiographic patterns were identified and given objective scoring: Scoring of 0 (normal), Score 1 (GGO only), Score 2 (GGO and consolidations - GGO predominant) and Score 3 (GGO and consolidations - consolidations predominant). Patterns distribution on CXRs were assessed in terms of zonal predominant (upper, middle, lower, or diffuse) and location of distribution (central or periphery). Severity scores were categorized into Normal (0), Mild (1-8), Moderate (7-12) and Severe (13-18) as per Brixia-score. Patient outcomes defined as 'Non-ICU admission', 'ICU admission and survived' and 'Death'. Consensual agreement between readers (radiologist trainee and thoracic fellowship radiologist) in applying initial CXR Brixia-score.

Results:
Patients below 60 years old are likely to have non-ICU admission, and patients above 60 years old are likely to encounter death from COVID-19. Most common pattern of COVID-19 on CXRs are ground glass opacities, consolidations and nodular opacities. Our data demonstrate significant correlation between initial CXR Brixia-score in predicting patients' outcomes (Fisher Exact test p-value <0.05).

Conclusion:
COVID-19 patterns on CXRs include ground glass opacities and consolidation with lower zone and peripheral distribution. Initial CXR Brixia-score is a valuable method of predicting patient outcomes in Malaysia which is reproduceable, an easy communication method among doctors and feasible in resource-constrained setting.

ORAL16

THE USE OF BRIXIA CHEST XRAY SEVERITY SCORING SYSTEM AS A PROGNOSTIC PREDICTOR FOR MORTALITY IN COVID-19 PATIENTS ADMITTED IN A TERTIARY HOSPITAL IN MAKATI

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Keywords: *BRIXIA, Covid-19, Chest X-ray severity scoring*

Background
The Brixia chest X-ray (CXR) severity scoring system was utilized as a prognostic predictor for mortality in COVID-19 patients admitted to a tertiary public hospital in Makati. The said scoring was selected because of its established good interrater reliability and simplicity, therefore, considered a good objective radiological tool to aid in the initial management of COVID-19 patients.The study aimed to determine the significance of the Brixia scoring system and its association with clinical outcomes among COVID-19 patients. It also aimed to determine the correlation between COVID-19 severity classification and Brixia scores, explore the association between Brixia score and selected independent variables as predictors of mortality, identify optimal score cut-offs in classifying COVID-19 pneumonia based on the DOH (Department of Health) clinical severity classification (mild, moderate, severe, critical) and identify the score cut-off that correlate with increased mortality.

Methodology
A retrospective cross-sectional study was conducted using records of COVID-19 confirmed patients with chest X-ray admitted at Ospital ng Makati from June to December 2021. The first X-rays of patients with COVID-19 pneumonia were graded using the Brixia scoring system by two board-certified radiologists who were randomly assigned samples. The Brixia scoring system for COVID-19 pneumonia involves dividing the lungs into six zones and assigning a score from 0 to 3 based on abnormalities detected on frontal chest projection. The scores of the six zones are added to obtain an overall score ranging from 0 to 18. Measures of central tendencies, measures of association and logistic regression were used to analyze the data. Also, an ROC curve was utilized to determine the optimal score cut-offs based on DOH severity classification.

Results
A total of 550 samples were obtained, and 503 sample radiographs were included in the analysis, comprising of 49.1% females and 50.9 % males, with overall mean age of 54.46 years old. Other demographics including vaccination status, 102 (20.28%, fully vaccinated), comorbidities, 227 (45.13%, hypertension), 129 (25.65%, diabetes), 6 (1.19%, cancer) have, and 144 (28.63% multiple co-morbidities) . In terms of COVID-19 severity classification, 64 (12.72%) were classified as mild, 183 (36.38%) moderate, 166 (33.00%) severe, and 90 (17.89%) critical. In terms of patient outcomes, 398 (79.13%) recovered, while 105 (20.87%) expired. Increasing scores reflects near total or complete lung involvement are at higher risk for poor clinical outcome with higher rates of mortality, thus patients with higher Brixia scores had higher odds of mortality. The results also showed that the lower lung zones are mostly involved and had more severity than the upper zones. Older patients, those with multiple comorbidities or hypertension, and those classified as having severe or critical COVID-19 also had higher odds of having higher Brixia scores. Fully vaccinated patients had lower odds of mortality compared to unvaccinated patients. The optimal score cut-offs that would relate the Brixia scores associated with clinical DOH severity classification are as follows: Mild (0-6); Moderate(7-9); Severe (10-14) and Critical (15-18), with a score of >= 10 correlating with increased mortality among patients with COVID-19.

Conclusion

Increasing scores are at higher risk for poor clinical outcome with higher rates of mortality. In predicting the disease severity using the scoring system, the optimal score cut-offs that would relate the Brixia scores with the DOH clinical severity classification of COVID-19 are Mild (0-6); Moderate(7-9); Severe (10-14) and Critical (15-18), with a score of >= 10 correlating with increased mortality.

ORAL17

YIELD OF CLINICALLY SIGNIFICANT INJURIES IN WHOLE-BODY COMPUTED TOMOGRAPHY FOR BLUNT TRAUMA PATIENTS: A RETROSPECTIVE SINGLE CENTRE STUDY

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Keywords: *Whole-body computed tomography, Blunt trauma*

Background
Whole-body computed tomography (WBCT) to investigate blunt trauma patients from emergency departments (ED) is increasing worldwide. In Hospital Sg Buloh (HSB), triaging selection criteria for WBCT for trauma patients has been introduced in 2019. However, some WBCT scans failed to pick up positive significant injury despite adherence to the triaging criteria. The study aims to measure the yield of clinically significant injuries (CSI) in more than one anatomical region in WBCT for blunt trauma cases.

Methodology
This is a retrospective cross-sectional study, performed in the year 2019 at HSB. We included adult patients from ED with acute blunt trauma and had emergency CT scans performed, either selective or combination CT. Findings were classified into CSI in each anatomic region; either (i)head/cervical spine, (ii)chest, and (iii)abdomen/pelvis.

Results
A total of 1179 patients (age:16 – 90 years) were included in the final analysis. The yield of CSI in selective (i)CT head/cervical was 44.2%; (ii)CT chest was 100%, and (iii)CT abdomen/pelvic was 35.3%. The yield of CSIs for combination in two anatomic regions was CT head/cervical and chest (i and ii) was 37.5%; CT head/cervical and abdomen/pelvic (i and iii) was 11.1%, and CT chest and abdomen/pelvic (ii and iii) were 33.3%. The yield of CSI in all three anatomical regions (WBCT) was 11.3%.

Conclusion
The yield for CSI in more than one anatomic region was low (11.1 – 37.5%) and in WBCT was lower (11.3%). Hence, selective CT imaging of a specific anatomic region for blunt trauma rather than WBCT is sufficient to detect CSIs.

POS01

RUPTURED RIGHT SINUS OF VALSALVA WITH FISTULOUS TRACK BETWEEN RIGHT SINUS AND RIGHT VENTRICLE ON MULTISLICE CT AT RAWALPINDI INSTITUTE OF CARDIOLOGY, RAWALPINDI, PAKISTAN

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Keywords: Sinus Of Valsalva, Rupture, Fistula,Shunt, CT Imaging

Abstract:
We describe a case of ruptured right coronary sinus with a long windsock type of fistulous track connecting the right sinus with the right ventricle producing aorto-cardiac shunting (left to right shunting). The case was evaluated by echo and 128 -slice cardiac CT imaging, which was later confirmed by perioperative findings.A 26 year old male labourer presented with history of acute chest pain and breathlessness just after lifting heavy weight--bricks. On physical examination, a continuous murmur was heard in the left parasternal region along with peripheral cyanosis. Chest radiograph showed mild cardiomegaly with left atrial enlargement. Echocardiography performed in the parasternal short axis view showed slightly dilated right coronary sinus at the site of rupture. Modified 4-chamber view showed a track communicating between the sinus and the right ventricle. Mild enlargement of the right atrium and right ventricle was also noted. Severe tricuspid regurgitation with moderate pulmonary hypertension was noted. There were features of right heart strain.The patient was then evaluated by 128-slice cardiac CT, which demonstrated slight enlargement of right sinus of Valsalva .A long windsock type of tubular fistulous track was seen extending between right sinus and right ventricle. The site of rupture was just posterior to the origin of the right main coronary artery. Volume rendered images clearly depicted the fistulous track in relation to the adjacent structures.The patient underwent open heart surgery through median sternotomy. The site of rupture at right coronary sinus was closed by placing a graft. The right coronary artery was reimplanted. The opening in the right ventricle was closed by direct suturing.

POS02

EFFECT OF GADOLINIUM ON AMIDE PROTON TRANSFER (APT) VALUE IN PATIENTS WITH INTRACRANIAL MENINGIOMA

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Keywords: *Amide proton transfer, magnetic resonance imaging, intracranial meningioma*

Background
Amide proton transfer (APT) is a new magnetic resonance imaging (MRI) technique based on chemical exchanged saturation transfer. It is capable to detect endogenous proteins and peptides in tissue via saturation of amide protein in the peptide bonds of intracranial tumours.

Methodology
This study recruited 12 patients with typical intracranial meningioma appearance on MRI, APT sequence, pre- and post-gadolinium administration was added. The images were then pre-processed and analysed using IntelliSpace Portal Version 10 (Best, The Netherland 2013) to determine the APT value using magnetization transfer ratio asymmetry (MTR*asym*). The calculated APT values were compared between pre- and post-gadolinium injection and the effect of the gadolinium to the APT value was analysed.

Results
The median APT post-gadolinium administration has lower value compared to pre- gadolinium administration. Wilcoxon signed-rank test showed statistically significant difference in median APT value between pre- and post-gadolinium images of typical intracranial meningioma ($p < 0.05$).

Conclusion
This study found that the APT value of intracranial meningioma was lower in post-gadolinium administration compared to pre-gadolinium. It was also proven that there was significant alteration of the APT value post-gadolinium. This study also suggests the potential use of APT value for intracranial meningioma in future.

POS03

DOES MAGNETIC RESONANCE ARTERIAL SPIN LABELLING (ASL) IMAGING NEED IN NEUROCOGNITIVE DISORDER? - A CASE REPORT

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Keywords: Neurocognitive disorder, Dementia, ASL, MRI

Neurocognitive disorder is a debilitating condition that gradually impairs the quality of life. It affects physical and cognitive domains, including memory and aberrant behaviors. Perfusion, functional and molecular imaging are valuable when the atypical presentation is in doubt. FDG PET imaging is a well-established marker for diagnosing Alzheimer's Disease. Congruous regional abnormality is identified between ASL sequence of MRI and FDG PET. Hence, potential role in assisting in dementia diagnosis. Our case, 78 years old lady with underlying syphilis and metabolic risk factors. She presented with a gradual change in aggressive behavior. MRI shows mild atrophy of medial temporal lobe and bilateral parietal lobe with multiple foci deep white matter hyperintensities on T2W/FLAIR. ASL reveals significantly reduced cerebral blood flow in affected regions. Thus, the coexistence of Alzheimer's and Vascular dementia was identified. ASL with pertinent imaging features enables precise diagnosis. Therefore, appropriate therapy and early prognostication facilitate better treatment.

POS04

HISTOPATHOLOGICAL CORRELATION OF MRI BIRADS CATEGORY 4 LESION

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Keywords: *MRI BIRADS 4*

Background
BIRADS ACR category 4 is defined as suspicious lesion and further categorized into 4a , 4b and 4c by likelihood of malignancy and histopathological diagnosis are always indicated in this category. However, in the case of BIRADS 4a lesion, lesion is usually benign and unnecessary biopsy can be prevented by MRI as problem solving tool.This study aimed to investigate the correlation of breast MRI in BIRADS category 4 lesions with histopathological diagnosis.

Methodology
Retrospective cohort study, MRI reports of patients examined in the radiology department between January 2022 till April 2023 were reviewed.Cases reported as BIRADS category 4 lesion on MRI were determined and histopathological diagnosis was established by image-guided biopsy; Patient without histopathological diagnosis were excluded from the study. Total of 22 female patients were included in the study.

Results
With HPE, 5 cases were diagnosed as carcinoma, 3 were papillary lesions and 14 were benign lesions.

Conclusion
Most of BIRADS 4 lesions on MRI were benign lesions. So MRI should not be used in every case of BIRADS 3, 4 lesions on MMG/USG. It could be used as a problem solving modality when MMG/ultrasound shows equivocal findings and biopsy is not feasible but it requires further large scale studies.

POS05

CHONDROSARCOMA OF THE SYNOVIUM: A RARE SOFT TISSUE TUMOR

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***Keywords**: Synovial chondrosarcoma, Knee, Intraarticular Tumor, Soft tissue Tumor*

Chondrosarcomas are malignant cartilaginous tumors commonly involving long bones. Rarely, it arises from the synovium within the intraarticular space with slight male preponderance and often occurs in their 50s. Synovial chondrosarcoma can either arise from a preexisting synovial chondromatosis or as a *de novo* tumor. Due to its rare entity, we would like to discuss the clinical and radiological features of an intraarticular tumor which was then histologically proven as low-grade chondrosarcoma. A 40-year-old lady presented with left knee slow-growing swelling since 2019 with worsening symptoms over the years. We would like to highlight a common feature which is the presence of ring and arc mineralization within, highly suggestive of chondroid related tumors. Synovial chondrosarcoma is a very rare malignancy that often causes dilemmas among radiologists to consider it as a diagnosis for intraarticular tumors. Hence, this case would be in favor to familiarize us with the common features of this disease.

POS06

BENIGN FIBRO-OSSEOUS LESION OF THE ZYGOMATIC ARCH IN A 4-YEAR-OLD BOY : A CASE REPORT

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Keywords: *benign fibro-osseous lesion, zygomatic arch, craniofacial bone tumor*

Benign fibro-osseous lesions (BFOLs) are a heterogeneous group of disorders characterized by the replacement of normal bone by fibrous tissue and immature bone. We reported a case of a 4-year-old boy who presented with a spontaneous onset of right infraorbital swelling over one month. Ultrasound revealed a heterogeneous solid lesion at the right zygomatic region and computed tomography (CT) scan of the skull showed an enhancing soft tissue lesion with bone destruction at the right zygomatic arch. The patient underwent excision biopsy of the lesion and histopathological examination confirmed the diagnosis of BFOL, which could include fibrous dysplasia or ossifying fibroma. BFOLs are rare in the craniofacial region and even rarer in the zygomatic arch and can mimic malignant tumours. A high index of suspicion and a multidisciplinary approach are essential for the diagnosis and management of these lesions.

POS07

SPONTANEOUS HAEMATOMA IN SCURVY: NEARLY FORGOTTEN DISEASE – A REPORT OF 2 CASES

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Keywords: *scurvy, haematoma, MRI, children*

Introduction: Scurvy is a nutritional disorder caused by vitamin C deficiency. It is rarely encountered in modern times. However, it can still occur in paediatric patients which are usually associated with poor nutrition and socioeconomic status. The diagnosis of scurvy is challenging due to its rarity and non-specific symptoms. It is diagnosed by clinical and radiographic findings with low serum vitamin C. In paediatric scurvy, muscoloskeletal manifestations are prominent with variable findings. Case Report: We report 2 cases of paediatric scurvy with presence of subperiosteal haematomas on MRI, which were initially diagnosed as infection and abscesses. Both patients responded well to vitamin C supplementation, and resolution of the haematoma on MR imaging was observed in one of the patient. Conclusion: Musculoskeletal manifestations are common in paediatric scurvy with subperiosteal haematoma being an important clue for diagnosis. Early detection of scurvy is important as it has excellent prognosis with proper treatment.

POS08

CHOLEDOCHAL CYST (TYPE I) COMPLICATED WITH HAEMOBILIA SECONDARY TO AN INTRAHEPATIC ARTERY PSEUDOANEURYSM: A CASE REPORT ON AN UNUSUAL SITUATION REQUIRING SURGERY AND EMBOLIZATION OF THE PSEUDOANEURYSM

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Keywords: *choledochal cyst, haemobilia, pseudoaneurysm, embolization*

Late presentation of a Choledochal Cyst complicated with haemobilia is an unusual cause of upper gastrointestinal hemorrhage in paediatric patients. Furthermore, intrahepatic artery pseudoaneurysm complicating a type 1 Choledochal Cyst is extremely rare and has never been reported before. We describe a 12-year-old girl presented with upper gastrointestinal hemorrhage. Pre-operative radiological images showed a Choledochal Cyst with haemobilia but did not reveal the pseudoaneurysm. The patient underwent successful resection of the cyst and a hepaticojejunostomy. Unfortunately, she still developed hematemesis post resection. An urgent CT Angiogram was done and revealed a small left intrahepatic pseudoaneurysm, which was managed by an embolization. Given the rarity and associated morbidity, a high index of suspicion on the diagnosis of pseudoaneurysm as the cause of haemobilia is required. This study reviews the potential etiologies of pseudoaneurysm, and the challenges involved in the diagnosis and surgical management along with embolization of massive haemobilia.

POS09

PROGNOSTICATION OF PSYCHOSIS BASED ON ARTIFICIAL INTELLIGENCE VOLUME ANALYSIS OF MRI BRAIN IMAGING OF CORPUS CALLOSUM IN PATIENTS WITH PSYCHOSIS

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Keyword*:Patients, Imaging, Psychosis, Progression, Prognosis, Disease, Brain, Mri, Patient, Tool*

Background: Psychosis is a complex group of disease showing significant alterations in corpus callosum affecting the cognitive behavior of the patient. Diffuse tensor imaging (DTI) is an advanced MR imaging tool that depicts the microstructural changes in the white matter of the brain. Since DTI can predict callosal changes before visible thinning, hence it can be used to determine the prognosis of patients and manage patients accordingly.

Methodology: Twenty patients with proven psychosis for more than one year underwent noncontrast MRI brain and DTI on 1.5T scanner followed by evaluation of callosal MD, FA & ADC measurement as well as changes in its thickness. This data was compared to 20 age & sex matched subjects who were normal healthy volunteers.

Results: Fourteen out of 20 patients revealed alterations in MD, ADC and FA of the corpus callosum with only 3 out of 14 revealed thinning of corpus callosum with ventriculomegaly. *

Conclusions: Callosal DTI MR imaging in psychotic patients may be a novel screening tool of disease progression and prognostication allowing early identification of patients who may require adjuvant psychotherapy or more aggressive management. It may also serve as an objective tool for evaluating the effects of various drug in the management of retarding or cessation of the progression of psychosis.

POS10

PROGNOSTICATION OF PSYCHOSIS BASED ON ARTIFICIAL INTELLIGENCE VOLUME ANALYSIS OF MRI BRAIN

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***Keywords**: Brain, MRI, Patients, Atrophy, Progression, Ganglia, Psychosis, Prognosis, Thalamus, Disorders*

Background: Psychosis is a group of disorders, not only difficult to diagnose & manage but also prognosticate. For long it has been proved that psychotic patients show reduction in cognitive powers especially if untreated or partially/intermittently treated. This reduced cognition has been linked to atrophy of multiple brain structures especially thalamus & basal ganglia. Hence, we planned a pilot study for evaluation of the above fact using Artificial Intelligence (AI) Based Volumetric Analysis of MRI Brain

Methodology: Twenty-five patients with proven psychosis and on treatment for more than six months underwent MRI brain on 1.5T scanner followed by MRI brain volumetric analysis using AI based tool. The volumetric data thus obtained was then compared with age & sex matched 25 control subjects.

Results: Nearly two-third patients revealed some degree of volume loss in important structures of brain especially thalamus and basal ganglia and one third of them showing significant degree of volume loss which correlated well with the poor control of their disease.

Conclusions: AI based volumetric analysis of brain can be very useful in objectively identifying patients with poor prognosis and faster progression helping in better management and determining the need of aggressive management and psycho-counselling. It may also aid in research of such drug molecules which can objectively reduce the progression of brain atrophy.

POS11

ROLE OF ARTIFICIAL INTELLIGENCE IN PROGNOSTICATING NEURODEGENERATIVE DISEASES

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***Keywords**: Disease, MRI, Patients, Brain, Diseases, Diagnosis, Disorders, Analysis, Alzheimer, Parkinson*

Background: Neurodegenerative disorders is a group of debilitating and progressive neurological diseases like Alzheimer's disease, Parkinson's disease, etc. The diagnosis is often based on clinical criteria following exclusion of organic disorder. These diseases are associated with neuronal loss evident in form of grey and while matter volume reduction which is visually apparent on brain MRI late in the disease. Hence, we conducted pilot study to assess the volumetric alterations in brain on MRI using Artificial Intelligence (AI) based tools.

Methodology: Twenty patients with clinical neurodegenerative disease and 20 age & sex matched controls underwent MRI brain with subsequent volumetric analysis using AI based tool.

Results: Age range of patients was 40-50years with only males in our study group. All the patients revealed variable but diffuse volumetric loss of grey and white matter on AI based volumetric analysis of brain compared to controls which was apparent visually in only 6 out of 20 patients.

Conclusions: Artificial Intelligence Based Volumetric Brain Analysis on MRI in neurodegenerative disease can objectively identify neurodegeneration early in the course of disease allowing time for institution of aggressive medical treatment and psycho-counselling. It helps in detecting volume loss of grey & white matter before it becomes visually apparent, also allowing objective assessment of the various drugs in their role of retarding or cessation of the progression of neurodegenerative disease.

POS12

PREDICTION OF PROGNOSIS BY DIFFUSION TENSOR IMAGING ON MRI BRAIN IN PATIENTS WITH STROKE

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***Keywords**: MRI, Patients, Stroke, Brain, Findings, Imaging, Recovery, Morbidity, Deficit, Displacement*

Purpose: Stroke is one of the most common indications of MR imaging. It can be ischemic or hemorrhagic and causes significant morbidity and mortality, which can be partially overcome if prognostication is done early. Presently, the main prognosticating factor is size and neurological deficit at the time of presentation. Recently, diffusion tensor imaging (DTI) along with tractography has been used to evaluate white matter tracts. Hence, we planned a study correlating DTI findings on brain MRI at the time of presentation with neurological deficit at 3months.

Methodology: Forty patients with stroke (35 ischemic & 5 hemorrhagic) underwent MRI brain with DTI & tractography. Displacement, thinning or disruption of the white matter tracts were noted in the affected region and the findings were correlated with neurological deficit at least three months post-stroke.

Results: In 33 of 40 patients, DTI findings correlated well with the neurological deficit 03months post-stroke. Displacement of white matter tracts at the site of stroke was associated with near-complete recovery, thinning of tracts with moderate recovery and partial to complete disruption with poor to very poor recovery.

Conclusions: DTI with tractography can help prognosticate patients with stroke allowing identification of patients who may require more aggressive management in form of counselling and physiotherapy helping in better recovery and maintaining good psychological status. Hence, tt should be a part of standard protocol of MRI brain for stroke.

POS13

COMPARATIVE STUDY OF CT & MRI IN EVALUATION OF AIRSPACES DISEASES OF LUNG

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***Keywords**: MRI, Patients, CT, Diseases, Thorax, Chest, Disease, Lymph, Diagnosis, Morbidity*

Background: Pulmonary diseases are broadly categorized into airspace & interstitial pattern with former being commoner and major cause of morbidity & mortality. Computed Tomography (CT) is the gold-standard for diagnosis of pulmonary diseases. Various limitations of CT especially radiation exposure have created the space for Magnetic Resonance Imaging (MRI) in thorax, which has superior contrast resolution.

Methodology: Fifty patients of pulmonary airspace disease as detected on chest radiograph underwent contrast-enhanced CT thorax on 128-slice scanner & noncontrast MRI thorax on 1.5Tesla MR scanner on the same day and their findings were compared.

Results: In our study, CT diagnosed higher number of patients with ground glass opacity & lymph nodes while MRI diagnosed more nodules, atelectasis, pleural effusion & pleural involvement. Patients with consolidation or chest wall involvement were detected equally by both CT & MRI. MRI detected greater number of patients with malignancy or tumor coexisting with consolidation than CT. Sensitivity, specificity & accuracy of detection of chest wall involvement was highest with MRI being 100%. MRI revealed an overall accuracy of 94% in evaluating various parameters of pulmonary airspace disease.

Conclusions: Though CT thorax is a gold standard imaging tool for evaluation of pulmonary airspace diseases, but MRI is equal or superior in depicting majority of morphological patterns. Hence, noncontrast MRI thorax should be preferred in children & young patients, pregnant females, patients with deranged renal functions and those with hypersensitivity to iodinated contrast agents.

POS14

ARTERIAL SPIN LABELING TECHNIQUE VERSUS POSTCONTRAST T1WI IN EVALUATING FOCAL BRAIN LESIONS

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***Keywords**: Lesion, MRI, Imaging, Brain, Diagnosis, Perfusion, Patients, Seizures, ASL*

Background: Focal brain lesions are common causes of seizures detected commonly on routine MRI brain imaging. Once suspected on noncontrast images, all patients undergo contrast MR imaging. But when MRI contrast is contraindicated, the diagnosis is often incomplete and non-confident. Arterial spin labelling (ASL) is a novel MR technique evaluate the perfusion of brain parenchyma without the using of contrast imaging. As all focal lesions are associated with some degree of perfusion alterations, hence we designed this study to understand the utility of ASL in focal brain lesion.

Methodology: Fifty patients with suspected focal lesions on noncontrast MRI brain underwent both ASL imaging and postcontrast T1W imaging on 1.5T MR scanner. The final diagnosis was then compared based on benign vs malignant lesion as well as final diagnosis.

Results: Noncontrast MRI brain along with ASL was more than 90% accurate in correctly identifying the lesion as benign or malignant. However, the overall accuracy was slightly more than 70% compared to noncontrast with postcontrast MRI brain.

Conclusions: ASL technique is highly sensitive and accurate in identifying the benign/malignant nature of the lesion and moderately accurate in diagnosing the specific brain lesions. Hence, it should be a preferred mode of imaging whenever, postcontrast imaging is contraindicated. ASL provides perfusion information of the lesion without contrast helping in differentiating benign from malignant lesions.

POS15

EVALUATING THE ROLE OF ARTIFICIAL INTELLIGENCE IN IDENTIFYING VENTRICULOMEGALY OF CLINICAL SIGNIFICANCE

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***Keywords**: Nerve, Patients, MRI, Brain, Disk, Assessment, Volume, Index, Hydrocephalus, AI*

Background: Ventriculomegaly can occur due to variety of causes including hydrocephalus. However, the relationship between ventriculomegaly and raised intraventricular pressure is non-linear. The management is however, guided by changes in optic nerve disk. Routinely, linear indices like Evan's index is used to assess ventriculomegaly. Recent literature suggests that ventricular volume is more sensitive in predicting optic nerve disk changes. Hence, we conducted the pilot study to assess the relationship of Artificial Intelligence Based Ventricular Volume and Changes in Optic Nerve disk in patients with Ventriculomegaly.

Methodology: Thirty patients with ventriculomegaly based on Evan's index in MRI brain performed on 1.5T MR scanner underwent Artificial Intelligence Based Ventricular Volume Assessment followed by Optic Nerve Disk Examination. Thirty age & sex matched controls also underwent MRI brain and AI based ventricular volume assessment.

Results: Only 16 out of 30 patients with ventriculomegaly based on Evan's index had true ventricular volume increase compared to controls as per AI based tool. Fourteen out of sixteen patients with increased ventricular volume on AI based assessment revealed changes in Optic Nerve Disk.

Conclusions: Artificial Intelligence based Ventricular Volume Assessment on Brain MRI is superior to linear dimensions with better prediction of increase intraventricular pressure. It allows identification of patients with true hydrocephalus with high degree of accuracy, thus allowing early intervention in true cases and obviates apprehension & unnecessary procedure in false positive cases detected by linear ventricular dimensions.

POS16

EVALUATION OF PAINFUL WRIST JOINT BY HIGH-RESOLUTION ULTRASONOGRAPHY

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Keywords*: MRI, Diagnosis, Pathologies, Wrist, Imaging, Patients, Hypertrophy, Cases, Edema, Morbidity*

Background: Wrist joint is a common joint susceptible to various pathologies with significant morbidity linked to painful wrist. Though magnetic resonance imaging (MRI) is the usual imaging investigation preferred for evaluation of painful wrist joint but its inherent limitations of high cost, limited availability, higher scan time and lack of comparison with contralateral side has prompted us to design a study comparing the role of high-resolution ultrasonography (HRUS) with MRI in such cases.

Methodology: Eighty patients of painful wrist joint were evaluated with both HRUS & MRI, comparing various findings as joint effusion, synovitis, synovial hypertrophy, tenosynovitis, rice bodies, bone erosions, etc. and the final group of diagnosis.

Results: In our study HRUS was similar to MRI in detection of joint effusion, synovitis, synovial hypertrophy, tenosynovitis, rice bodies, etc. but was very poor in detection of bony pathologies especially marrow edema. However, HRUS was equivalent to MRI in the final diagnosis in 67.5% cases, inferior to MRI in 30% cases and superior to MRI in 2.5% cases.

Conclusions: Since HRUS has a high accuracy in detecting the pathologies in cases of painful wrist joint, it should be used as the first imaging modality. However, patients with equivocal diagnosis or requiring surgical planning may be further evaluation by MRI. HRUS in expert and experienced hands is able to detect the cause of pain in wrist joint in the majority.

POS17

A CASE OF DIAGNOSTIC DILEMMA IN POST INTRACRANIAL RADIATION THERAPY: TO REMOVE OR TO OBSERVE?

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Keywords: *Radiation necrosis, radiation induced cavernous malformation, MR perfusion*

Cranial irradiation is one of the main treatment modalities for central nervous system tumors. The late onset complications include radiation necrosis and radiation induced vasculopathy, with the radiation necrosis being the most challenging diagnosis for clinician and radiologist as it closely mimic tumor recurrence. Here we describe a patient who underwent cranial irradiation 20 years ago for juvenile pilocystic astrocytoma and currently presented with a right cerebellar mass. Additionally the patient has multiple intracranial lesions suggestive of radiation induced cavernous malformation. The use of MR perfusion in this case has helped to differentiate the right cerebellar mass between tumor recurrence, radiation necrosis and radiation induced cavernous malformation.

POS18

A RARE CASE OF PRIMARY CENTRAL NERVOUS SYSTEM (CNS) SOLID FIBROUS TUMOUR (SFT) WITH EXTENSIVE SYSTEMIC METASTASES

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Keywords: *Diagnosis, Liver, Pancreas, Lesions, CNS, Lesion, Tumour, Recurrence, CT, Radiology*

Introduction: SFT is a rare hyper-vascular tumour, accounting for only 0.4% of primary-CNS-tumours. Primary-intracranial-tumour rarely metastasise outside of CNS. We report a case of extensive-systemic-metastases from primary-CNS-SFT with the used of radiology-imaging in establishing diagnosis of this rare event.

Report: 41-year-old lady presented-with abdominal-distension and palpable-abdominal-mass. Her medical-history remarkable for primary-CNS-SFT which was resected 18 years-ago, with recurrence in 2017 where she had another tumour-resection. Abdominal-ultrasonography revealed multiple liver lesions where hepatoma suspected. Abdominal-CT scan showed hyper-vascular masses in the liver, pancreas and bones, possibly representing extensive-systemic-metastases from primary-CNS-SFT. Correlation with histopathological-examination of the pelvic-bone lesion, the diagnosis of extensive-systemic-metastases from primary-CNS-SFT was confirmed.

Conclusion: SFT is rare primary-CNS-malignancies that able to disseminate throughout the body, which may occur years after initial diagnosis. It presents a challenging case to determine the diagnosis. Advances in radiology imaging plays a vital role to diagnose and to guide for appropriate-management of this condition.

POS19

ASSOCIATION OF ISCHAEMIC STROKE IN YOUNG WOMEN AND COVID-19 INFECTION: A CASE REPORT

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Keywords: *COVID-19, thromboembolic, ischaemic, stroke symptoms, thrombosis*

Coronavirus disease 2019 (COVID-19) is one of the aetiology and risk factor for thromboembolic and acute ischaemic stroke. Elderly people have higher risk factors associated with acute ischaemic stroke or embolization vascular events and advanced age is strongly associated with severe COVID-19 and death. We reported a case of 29-year-old woman, Para 1 [day 7 post spontaneous vaginal delivery (SVD)], presented with loss of consciousness (LOC) at home, after witnessed by husband. Patient was brought by ambulance to Emergency Department (ED). Glasgow coma scale (GCS) on arrival was 12/15 with no documented temperature. Noted two episodes of fitting (generalized tonic clonic) and subsequently patient was intubated for protection of the airway. Proceeded with urgent computed tomography (CT) brain and showed dense basilar artery with ill-defined hypodensities in bilateral cerebellar hemispheres. CT angiograph of brain showed filling defect within the tip of basilar artery extending to bilateral superior cerebellar arteries. Magnetic resonance imaging (MRI) brain was performed 4 hours later showed distal basilar artery thrombosis with ischaemic changes of bilateral cerebellar hemispheres. Patient was immediately went for urgent endovascular thrombectomy of the basilar artery thrombosis. CT brain was performed 2 hours post thrombectomy and showed no significant interval change of the bilateral cerebellar hemisphere infarcts. Patient was put on cerebral protection for 24 hours and subsequently was extubated. Subcutaneous clexane (40mg OD) and oral aspirin (150mg ON) were initiated. Clinical recovery noted marked by improvement of clinical deficit. SARS-CoV-2 infection is linked to a prothrombotic state causing arterial thromboembolism and elevated D-dimer levels. It is associated with pro inflammatory cytokines which induce endothelial cells activation with expression of tissue factor leading to coagulation activation and thrombin generation. Associated with pro inflammatory cytokines which induce endothelial and mononuclear cell activation with expression of tissue factor leading to coagulation activation and thrombin generation. Circulation of free thrombin, uncontrolled by natural anticoagulants,

POS20

IDIOPATHIC HYPERTROPHIC SPINAL PACHYMENINGITIS: A CASE REPORT

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Keywords: *idiopathic hypertrophic spinal pachymeningitis, spinal dura, myelopathy, pachymeninx, meningioma*

Idiopathic hypertrophic spinal pachymeningitis (IHSP) is a rare inflammatory disorder that leads to spinal cord compression. It is characterized by marked fibrosis of the spinal dura mater of unknown aetiology. IHSP is a diagnosis of exclusion because meningioma, lymphoma, tuberculosis and sarcoidosis may present in a very similar fashion. The diagnosis also can be made by excluding the other known causes of hypertrophic pachymeningitis. It can be diffuse to the whole intracranial pachymeninx or affect the dura mater focally. We described a case of 61 year old female with background medical history of diabetes mellitus and hypertension presented with progressively worsening of bilateral upper and lower limb weakness as well as numbness for 3 months prior to admission. No bladder or bowel incontinence. No history of trauma. On arrival to Emergency Department HUKM, vital signs were stable and neurological examination showed normal tone and reflexes, with power of bilateral upper and lower limbs of 3/5. Proceeded with magnetic resonance imaging (MRI) of cervical spine the next day, demonstrated epidural mass at the craniocervical junction with peripheral enhancement causing spinal cord compression at this level. Differential diagnosis given at this time were en plaque meningioma or non granulomatous disease such as tuberculosis. Patient was advised for surgical removal however patient refused and went back home. However, 3 months later, patient came back with similar symptoms. MRI of cervical spine was performed and demonstrated enlarging epidural mass at the craniocervical junction causing worsening degree of spinal cord compression with focal oedema at this level. Patient underwent craniotomy and laminectomy with removal of the mass. The mass was sent for histopathological examination and the result showed no evidence of meningioma or malignancy. It is consistent with fibrous tissue scar with residual chronic inflammation. Patient discharged with oral prednisolone 10mg BD and recovered since then.

POS21

SPONTANEOUS CERVICAL EPIDURAL HEMATOMA OF IDIOPATHIC ETIOLOGY WITH STROKE MANIFESTATIONS: A CASE REPORT

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Keywords: *spontaneous cervical epidural hematoma, neurological, stroke, quadriplegia, paraplegia, laminectomy*

Spontaneous cervical epidural hematoma (SCEH) is a rare disease, which leads to acute onset of neurological deficits including quadriplegia or paraplegia. SCEH can cause compression to the spinal cord resulting in its clinical manifestations. If it is not recognized early, it can have catastrophic consequences. The reported etiological risk factors including anticoagulants, coagulopathies, vascular malformations, infection and herniated disc. We report a 53-year-old woman with no known medical illness, presenting with chief complaint of right hemiparesis, imbalance gait and unable to walk for 2 hours prior to admission. No previous history of neck trauma. The initiating presentation were hemiparesis, in favour of ischaemic stroke, thus stroke protocol activated. Computed tomography (CT), CT angiography and CT perfusion brain were performed and showed acute left temporal infarct with small penumbra. No evidence of large vessel occlusion. Incidental finding of hyperdensity at the posterior epidural space at the level C5/C6 vertebrae. Thrombolysis was initiated. On next day, patient complained of sudden pain of right shoulder with loss of sensation at the right upper limb and urgent magnetic resonance imaging (MRI) whole spine was performed. Findings of C5/C6 epidural hematoma noted. Proceeded with CTA whole spine the next day to rule out any vascular malformation or dural AVF prior to the C5 and C6 laminectomy. However, the epidural hematoma is no longer visualized and patient showed clinical recovery the day after. Thus not proceeded with the surgical procedure. Her muscle strength and neurological symptoms improved gradually after the physiotherapy.

POS22

CT ARTEFACT MIMICKING BRAIN INFARCT DUE TO AIR BUBBLES: A CASE SERIES

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Keywords: *artefact, CT, stroke, air bubbles*

Most types of artefact in CT scan are easily recognisable by their characteristic finding. However, the artefact caused by air bubbles within x-ray tube can cause ill-defined hypodensity in CT brain which resembles acute brain infarct. This poses a challenge to radiologist whether to report as stroke or as an artefact. We report three young patients who presented with headache, vomitting and diplopia respectively. All these patients were scanned using the same CT machine, within 3 days. There are ill-defined hypodensity in CT brain that resemble acute infarct, without mass effect. Due to repeated non-suspected finding within short period, MRI was done to confirm, which show normal findings. Investigation found out that air bubble within the x-ray tube as a cause. These cases highlights the importance of understanding this newly discovered CT artefact, especially if it is not tallied with clinical history, so that misdiagnosis and unnecessary treatment can be prevented.

POS23

EVALUATING MR URETRHOGRAPHY IN MALE PATIENTS WITH ANTERIOR URETHRAL STRICTURES

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Keywords*: MRI, Diagnosis, Pathologies, Wrist, Imaging, Patients, Hypertrophy, Cases, Edema, Morbidity*

Background: MR Urethrography (MRU) has gained acceptance over Retrograde Urethrography in anterior urethral strictures as it can also evaluate periurethral region affecting further management besides obviating radiation exposure. This study evaluated the Impact of MRU in Evaluation of Anterior Male Urethral strictures.

Methodology: Forty male patients with suspected anterior urethral strictures underwent MRU on 1.5T MR scanner following distension of the urethra by sterile gel per urethram. High-resolution, T2 weighted images were obtained in all planes. Data related to site & length of stricture; presence or absence of spongiofibrosis with its extent and any other associated abnormality was recorded. The findings were compared to that of the intraoperative findings.

Results: Out of 40 patients, six patients were excluded from our study due to suboptimal scan. Long-segment stricture was detected in 28 out of 34 (82.4percent) patients. In rest six cases, though the stricture was diagnosed as short segment but revealed spongiofibrosis affecting the patient management. Thus, MRU had an overall accuracy of 100 percent when correlated with final management.

Conclusions: MRU can be used with high accuracy in anterior male urethral strictures to predict the correct mode of management, thus preventing related morbidity due to recurrence. Since MRI does not entail radiation and provides all information needed by the urosurgeon to decide the mode of management - conservative or surgical, MRU can serve as a single stop shop for evaluation of anterior male urethral strictures.

POS24

INTRACRANIAL CALCIFICATIONS ON CT : PHYSIOLOGICAL OR PATHOLOGICAL ?

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Keywords: *calcifications, CT scan , brain*

Background :
Intracranial calcifications (IC) are frequently encountered in non-contrast computed tomography scan, they refer to calcifications within the brain parenchyma or vasculature. The usage of Computed Tomography scans has largely contributed in the accurate detection, localization and classification of intracranial calcifications.

Methodology :
We reviewed in this pictorial essay the diseases associated with intracranial calcifications and emphasized the utility of CT for the differential diagnosis. We present a wide array of intracranial calcifications with a particular focus on their appearance, size and location in order to formulate a better clinical approach of IC.

Results :
IC include physiologic/age-related calcifications and a wide spectrum of pathological calcifications wich can be classified into several major categories: dystrophic, congenital disorders, infectious, vascular, neoplastic, metabolic/endocrine, inflammatory and toxic diseases.

Conclusion :
Even with the introduction of magnetic Resonance Imaging in the 1990s, CT scan yet proved to be superior in the detection and characterization of brain calcifications.

POS25

RESIDUAL HIPPOCAMPAL AND PARAHIPPOCAMPAL GYRUS VOLUME POST ANTERIOR TEMPORAL LOBECTOMY AND SEIZURE CONTROL IN TEMPORAL LOBE EPILEPSY

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Keywords: *Temporal lobe epilepsy, anterior temporal lobectomy, MRI volumetry, seizure control.*

Background

Temporal lobe epilepsy (TLE) is the most common of the localization-related epilepsies. Hippocampal sclerosis (HS) is the most common cause for TLE. Surgery is usually used for drug resistant TLE. There is variability with regards to the extent of resection in different centres whether minimizing the degree of posterior hippocampus excision may lessen the possibility of post-operative memory deterioration or more extensive mesial resections, including the posterior hippocampus, will achieve better seizure control. Therefore, precise measurements using volumetry of the spared temporal lobe structures might help us to understand the relations between the extent of hippocampal removal and seizure outcome. There is currently no data correlating post operative MRI volumetry and seizure outcome in Malaysia. As Hospital Sungai Buloh is one of the few centres in which epilepsy surgery is performed, this provides a platform to begin data acquisition. This study aim to correlate the residual hippocampal and parahippocampal gyrus volume and post operative seizure control.

Methodology

A retrospective cross sectional study of all patients underwent epilepsy surgery from January 2014 till December 2020. Information on patients' details was obtained from the Computerized Medical Record System. MRI images was transferred to an independent computer by running an open source segmentation software(ITK- SNAP).The seizure control post surgery was recorded and classified using surgical outcome scale at 1 year post surgery was then recorded. This residual volume of hippocampus and parahippocampus volume was then compared to the patient's seizure control. A p value of <0.05 was considered statistically significant.

Results

A total of 40 patients were enrolled into study after fulfilled the inclusion criteria. 72.5% of the cohort obtained good seizure control. A lesser post operative residual hippocampal volume was associated with better post operative control (176.9mm^3 vs. 364.8mm^3, p = 0.014). All seven patients with the duration of epilepsy less than 12 years had seizure free post operatively (Engel class I) but the results were not statistically significant (p = 0.159). There was no correlation of gender, laterality, age of onset, age of surgery, EEG findings , and/or presence of risk factors to post operative seizure control.

Conclusion

A lesser post operative residual hippocampal volume was associated with better seizure freedom, similar to other studies that have shown that adequate hippocampal resection is important for seizure control.

POS26

SYMPTOMOLOGY OF CELIAC ARTERY COMPRESSION: CLASSIFYING PATIENTS BY THE DEGREE OF CELIAC ARTERY STENOSIS AND PRESENCE OF COLLATERAL CIRCULATION ON COMPUTED TOMOGRAPHY ANGIOGRAM

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Keywords: *celiac artery compression; median arcuate ligament syndrome; CT; collateral circulation*

Background
This study aimed to analyze the correlation between the degree of celiac artery (CA) stenosis and the presence of collateral circulation in patients with CA compression (CAC) by computed tomography (CT) and to classify patients by the combination of the two imaging features.

Methodology
Consecutive patients with radiographic evidence of CAC by contrast-enhanced CT or CT angiography (CTA) at our institution between January 2012 and December 2013 were retrospectively enrolled. The patients were divided into the symptomatic group and the asymptomatic group based on their reasons for administration. The degree of CA stenosis was measured as a percentage at the focal compression of the proximal CA and graded into three categories (mild stenosis, moderate stenosis, and severe stenosis). The collateral circulation was also classified into three groups (absent, visible, and prominent). A multivariate regression method was used to select the independent risk factors for a symptomatic CAC.

Results
In total, 150 patients (79 men and 71 women) were included in this study, and 49 patients (32.7%) were symptomatic. Using multivariate logistic regression analysis, the degree of CA stenosis (odds ratio [OR] 3.20, $p = 0.001$) and collateralization classification (OR 0.14, $p < 0.001$) were proven to be independent risk factors for the median arcuate ligament syndrome. We further classified the patients into the following three subtypes: Type A, mild stenosis of CA; Type B, moderate to severe stenosis with collateral circulation; and Type C, moderate to severe stenosis without collateral circulation. Only one patient with Type A (1/26 [3.8%]) was symptomatic; a small proportion of patients with Type B (23/99 [23.2%]) were symptomatic; and all patients with Type C (25/25 [100%]) were symptomatic.

Conclusion
The combination of the degree of CA stenosis and collateral circulation contributes to the symptomology of patients with CAC. Classification based on the two CT features may benefit the management of patients with CAC.

POS27

ALTERED BASAL GANGLIA AND THALAMIC METABOLISM AS REFLECTED BY LOWER READINGS OF STANDARDISED UPTAKE VALUE ON FDG PET-CT FOR PAEDIATRIC EPILEPSY

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Keywords: *Basal ganglia, thalamus, FDG PET-CT*

Background

Basal ganglia (BG) and thalamus are paired deep gray matter structures and typically being metabolically active but can be affected by variety of conditions. They can be evaluated using fluorodeoxyglucose (FDG) PET-CT. Altered metabolism may be reflected by lower standardised uptake value (SUV). We aimed to investigate SUV readings of BG and thalamus obtained on paediatric neurology FDG PET-CT.

Methodology

We conducted review of paediatric refractory epilepsy PET-CT scans (September 2020 - January 2021). Scans performed as inter-ictal imaging for neurology covering from vertex to skull base. Known underlying BG and/or thalamic pathology or structural abnormality cases were excluded. BG and thalamic peak SUV (SUVpeak) readings were obtained. Data were statistically analysed.

Results

There were 14 refractory epilepsy cases who underwent FDG PET-CT. Mean age was 8.3 years (SD 4.303; 2-17 years). One patient had no detectable cortical FDG hypometabolism whereas 13 patients had demonstrated features indicating epileptogenic focus (unilateral lesions in 69.2%, bilateral lesions in 30.8%). Overall, the average SUVpeak readings for right thalamus, left thalamus, right BG, and left BG were 5.836, 5.857, 7.579 and 7.407. Nevertheless, those with bilateral epileptogenic lesions had lower average SUVpeak of 4.500, 4.450, 5.775 and 5.650 for right thalamus, left thalamus, right BG, and left BG respectively. These preliminary data may point towards altered BG and thalamic metabolism particularly in patients with epileptogenic foci in bilateral cerebral hemisphere.

Conclusion

Those with bilateral epileptogenic lesions on FDG PET-CT demonstrated lower BG and thalamic SUVpeak readings. Further research needed to validate these findings.

POS28

OLFACTORY SCHWANNOMA MASQUERADING AS ESTHESIONEUROBLASTOMA

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Keywords: *olfactory nerve, schwannoma, esthesioneuroblastoma, mri, dumbbell lesion*

Our case was a 27-year-old man presenting with a nine-month history of anosmia and no other significant history or finding on the physical examination. MRI of the brain showed a large lobulated and dumb-bell shaped heterogeneously enhancing mass expanding the right nasoethmoidal region with intracranial extension via the right cribriform plate. Foci of SWI dropout were also seen within it along with some cystic change. Based on the clinical and imaging findings, the initial impression was esthesioneuroblastoma. After gross total surgical resection, pathologic microscopic examination showed a spindle cell lesion arranged in hypo and hypercellular areas in a collagenous background consistent with schwannoma with degenerative change. The most common diagnoses of extra-axial enhancing mass lesions of the anterior fossa and olfactory region include meningioma, adenoid cystic tumors or esthesioneuroblastoma. Although a rarity since no Scwann cell is present around the olfactory bulb, olfactory schwannoma should be considered in the differential. Figure 1: A & B) T2 axial and sagittal sequences showing a heterogeneously hyperintense T2 mass in the sinonasal region with extra-axial intracranial extension (arrows). Low-insensity foci were seen with which were attributable to calcifications or foci of hemorrhage.
C & D) The mass shows intense enhancement with areas of cystic change (arrowhead in C). Dumb-bell shape of the mass was thought to be characteristic of esthesioneuroblastoma.

POS29

TAKOTSUBO SYNDROME: A REPORT OF TWO CASES AND REVIEW OF RELEVANT CARDIAC MAGNETIC RESONANCE IMAGING FINDINGS.

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Keywords: *Takotsubo syndrome(TTS), Apical ballooning syndrome, Stress cardiomyopathy, Cardiac MRI (CMRI)*

Takotsubo syndrome (also called tako-tsubo syndrome and commonly abbreviated as “TTS” or apical ballooning syndrome) is a stress-induced reversible cardiomyopathy which causes transient left ventricular myocardial dysfunction without significant coronary artery stenosis. At presentation, the symptoms, preliminary assessment and laboratory test results of a patient with TTS may be indistinguishable from the acute coronary syndromes (ACS). Demographically, the worldwide incidence of TTS is higher in Asians and predominantly affects the female population. At the present time, coronary angiography (COROS) with left ventriculography is accepted as the gold standard diagnostic tool for TTS. However, recently the role of cardiac magnetic resonance imaging (CMRI) in TTS is emerging and recent studies suggest its potential for diagnosis, assessment of concomitant disease and complications, as well as for follow-up evaluation. We report on 2 cases of TTS where CMRI was crucial for diagnosis and for assessment of resolution at follow up. The diagnosis of Takotsubo syndrome (TTS) may be confounded by its similar presentation, electrocardiogram (ECG) features and cardiac biomarker findings to those of acute coronary syndrome (ACS). Cardiac magnetic resonance imaging (CMRI) is an accurate, fast and non-invasive imaging modality. We would like to highlight the role of CMRI in relation to diagnosis and follow-up for cases of TTS.

POS30

ANOMALOUS LEFT CORONARY ARTERY FROM THE PULMONARY ARTERY (ALCAPA) AND TETRALOGY OF FALLOT: A RARE OCCURRENCE

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Keyword: Anomalous Left Coronary Artery from the Pulmonary Artery.

Introduction:
Anomalous Left Coronary Artery from the Pulmonary Artery (ALCAPA) is a rare congenital malformation of the heart with its occurrence in less than 1% of all congenital heart diseases. ALCAPA can be associated with other types of CHD but an association particularly with Tetralogy of Fallot (TOF) is very uncommon.

Report:
ALCAPA has bimodal age of onset by which it can present at infancy or adult age groups depending on the degree of collateral formation from the right coronary artery to cope and supply both right and left coronary artery territories. For the infant type, the patient may present as neonatal angina as well as tachycardia and respiratory distress. Further examination may detect a cardiac murmur. The mortality rate is extremely high for the infant type as the patient may develop myocardial infarction, ischaemia or heart failure. Dilatation of the right coronary artery on echocardiogram may be the first findings to be elicited other than the flow direction of the left coronary artery on this non-invasive cardiac assessment tool. The reversal of flow within the left coronary artery develops as the pulmonary artery pressure drops and the left coronary artery is supplied entirely by the right coronary artery collaterals. This condition is defined as a myocardial steal. Inefficient collateral channels from RCA will lead to devastating outcomes of the condition and hence the clinical presentation.We report a case of an 8 month old boy with TOF, which was referred from a district hospital for further surgical management. Upon pre-operative assessment, echocardiogram findings confirm the diagnosis of TOF but in the same setting, we noted features that may suggest ALCAPA. ALCAPA was confirmed on ECG gated CTA cardiac which was performed later during the same admission. We present the features of ALCAPA on cross sectional imaging, including reconstructed volume rendering images. Additionally, we review the literature on its association with TOF. Our findings demonstrate the utility of cross sectional imaging in the diagnosis of ALCAPA, as well as its potential association with TOF.

Conclusion:
The use of cross-sectional imaging in the diagnosis of ALCAPA with TOF has several advantages. It is less invasive than coronary angiograms, which can be uncomfortable for the patient. Additionally, reconstructed images, such as volume rendering images, provide a more detailed view of the heart and its structures, allowing for a more accurate diagnosis. This can be especially important in cases where the malformation is not immediately apparent.

POS31

COMPARATIVE ROLE OF CONTRAST ENHANCED US AND TRIPLE-PHASE CECT ABDOMEN IN FOCAL HEPATIC LESIONS

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Keywords: *lesions, abdomen, patients, tumor, exposure, agents, diagnosis, cases, intestine, patient*

Background: Triple phase CECT abdomen is the primary imaging modality for evaluation of focal hepatic lesions. But the disadvantages like radiation exposure, iodine sensitivity and poor renal function have created the space for evaluation of such patients by ultrasound (US) contrast agents. Hence, we conducted a pilot study to gain experience on the comparative role of US contrast agents in focal hepatic lesions at our Medical College Tertiary Care Hospital.

Methodology: Twenty-five patients who were detected with focal hepatic lesions underwent evaluation with US contrast agents followed by TPCT abdomen in a single blinded manner. The results were compared using histological diagnosis as gold standard.

Results: Out of 25 cases of focal hepatic lesions, we were able to correctly diagnose 21 cases based on the pattern of enhancement & contrast dynamics using US contrast agents while TPCT abdomen could diagnose 22 of 25 cases. One additional case diagnosed correctly on TPCT was due to additional finding of tumor in the intestine that was not visualised on USG abdomen.

Conclusions: US Contrast agent characterisation of focal hepatic lesions has approximately the same accuracy as TPCT abdomen especially in cases with isolated finding. It avoids repeated radiation exposure in patient needing follow-up especially in cancer patients and those with compromised renal function. Hence, US contrast agent can be used as a useful alternative to Triple phase CECT abdomen in focal hepatic lesions.

POS32

PROGNOSTICATING EPILEPSY BY ARTIFICIAL INTELLIGENCE BASED BRAIN VOLUMETRIC ANALYSIS

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Keywords: *Epilepsy, Patients, Brain, Atrophy, MRI, Morbidity, Prognosis, Analysis, Seizures, Detection*

Background: Epilepsy is a neurological disorder associated with high morbidity and psychosocial impact. Evidence exists in Medical Literature suggesting neuronal loss or neurodegenerative phenomenon in patients with Epilepsy. However, this may be visually apparent late in the disease when other manifestations may occur. Hence, we planned a pilot study where we utilised Artificial Intelligence (AI) based volumetric assessment of brain patients suffering with epilepsy to establish its relationship with brain atrophy, hence predicting prognosis.

Methodology: Hundred patients with epilepsy and 100 age & sex matched subjects underwent MRI brain with subsequent brain volumetric analysis using AI based tool. Patients with seizures due to organic caused were excluded from the study.

Results: The age range of patients was 30-50years with equal number of males & females. At least 55 out of 100 patients revealed some degree of reduced brain volume compared to controls.

Conclusions: Epilepsy is associated with brain atrophy and neurodegenerative process, hence serial artificial intelligence based volumetric brain analysis should be part of the routine imaging protocol for Epilepsy by MRI Brain for its early detection and instituting aggressive management & psycho-counselling. As brain atrophy is a long-term complication of epilepsy which often escapes visual detection in early stage, AI based volumetric brain analysis may not only aid in better management but may also be used to evaluate the effect of drugs retarding or halting the progression of brain atrophy objectively.

POS33

EVALUATING LEVATOR HIATUS BY MRI IN PELVIC FLOOR ABNORMALITIES

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Keywords: Dysfunction, MRI, Specificity, Incontinence, Sensitivity, Abnormalities, Evaluation, Dimensions, Pelvis, Stress

Background: Levator hiatal dysfunction is one of the major causes of Pelvic Floor abnormalities including prolapse, stress urinary Incontinence and fecal incontinence. The purpose of this study was to investigate magnetic resonance imaging (MRI) pelvis in the evaluation of levator hiatus and to define cut-offs for hiatal dimensions predictive of dysfunction in Indian female.

Methodology: One Hundred subjects, 50 each with pelvic floor dysfunction and controls were included in the study. The subjects were examined by MRI using 1.5T MR scanner. The levator hiatal antero-posterior diameter (Lhap) and levator hiatal area (Lha) diameter were measured in both groups followed by statistical evaluation.

Results: The Lhap of 51mm had a sensitivity of approximately 85% and a specificity of nearly 90% in predicting PFD. The Lha of 15cm^2 had a sensitivity of nearly 90% and specificity of more than 95% in predicting PFD. Our results of hiatal dimensions were quite different from those of similar study conducted by Dahlia O. El-Haieg et al. in the year 2019 in Egypt probably representing demographic changes.

Conclusions: MRI pelvic floor evaluation yields detailed anatomic information with dynamic sequences adding functional data. Since, there is no definite range of hiatal dimensions predictive of pelvic floor weakness in Indian literature, hence the significance of our study. Establishing cut-off dimensions of levator hiatus in asymptomatic female may help in deciding the mode of management - conservative or surgical.

POS34

ISOLATED DISTAL GRACILIS MUSCLE STRAIN: A CASE REPORT

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Keywords: *gracilis, muscle injury, athletes*

We present a case of a 26-year-old sportswoman with two weeks of history of right lower thigh pain. She developed pain and a sudden loud 'pop' sound during the stretching session. On examination, there was bruise and tender over the medial aspect of the right lower thigh. Vague swelling palpable over the distal tendon insertion. MRI revealed isolated right gracilis muscle sprain. She was given an analgesic and referred to sports clinic and physiotherapy. Subsequently during follow up pain significantly improved. Isolated gracilis myotendinous injury is a rare condition. It is caused by atypical mechanisms of injury such as vigorous exercise related activities, which are mostly reported among athletes. Management included initial rest period, ice, compression, analgesics, physiotherapy, and gradual return to sport activities. Gracilis injury should be considered in the differential diagnosis of distal medial thigh pain, especially among athletes or in cases with similar interventional profiles.

POS35

HIRAYAMA DISEASE: AN OVERLOOKED CAUSE OF CERVICAL MYELOPATHY WITH DISTINCT RADIOLOGICAL FEATURES

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Keywords: *neuroradiology, spine, Hirayama disease, asymmetrical cord atrophy*

Hirayama Disease is a rare neurological condition that predominantly affects young males and is characterized by asymmetrical weakness and atrophy of the upper limbs. We present a case of a 20-year-old gentleman who initially presented with right upper limb tremors that progressed to weakness and deformity. Examination revealed atrophy of the right thenar and hypothenar muscles. Nerve conduction study showed above elbow right ulnar neuropathy. Magnetic Resonance Imaging (MRI) of the cervical spine demonstrated asymmetrical cervical myelopathy with irregular flattening of the right lateral aspect of the spinal cord from C4/5 until C6/7 levels. On slight neck flexion, there was mild anterior displacement of the dorsal dura with a prominent posterior epidural space. Based on clinical and radiological findings, we diagnosed the patient with Hirayama Disease. It is important to consider this disease in patients with asymmetrical cord atrophy/flattening in the absence of any focal external lesion.

POS36

CROSSED DOUBLED PATELLAR TENDON: POTENTIALLY TREACHEROUS ANATOMICAL VARIANT

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Keywords *Tendon, Cartilage, Degeneration, Ligament*

Case report:

The doublecrossed patella tendon is a normal anatomical variant with interesting embryological origin.This is rare, occurring in one percent of cases with anterior knee pain. There is a postulated link with chondro malacia patella and anterior compartment of property resulting from this variant.We present case report, and highlight the importance of pre-surgical diagnosis of this interesting variant. It is also important to recognise this in the setting of anterior cruciate ligament tears and planned reconstruction by patellar tendon harvesting may be complicated by this variant.Altered biomechanics of the extensor mechanism resulting from this variant are poorly understood. This patient presents with advanced cartilage degeneration despite young age. It is important for the reporting radiologist to recognise this variant.

POS37

ACCURACY OF MAGNETIC RESONANCE IMAGING IN FEMALE INFERTILITY

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Keywords: *brain,mri,lesions,edema,scans,images,pathologies,patients,tumors necrosis*

Background: In modern era of conservative therapies and minimal invasive surgeries, imaging plays an important role in diagnosis, treatment, and determination of the prognosis of diseases. Role of imaging in female infertility has been documented in medical literature. In this study, we aim to determine the role of magnetic resonance imaging (MRI) in determining variety of causes of female infertility using hysterolaparoscopy as a gold standard.

Methodology: One hundred and ten females in reproductive age-group presenting with primary and secondary infertility who were candidates for laparoscopy were included in the study. All the patients underwent noncontrast MRI pelvis. Contrast enhanced MRI was performed wherever indicated. The data obtained from MRI was compared using that from laparoscopy as gold standard.

Results: MRI was nearly 100 percent accurate in detecting the cause of infertility showing nearly 100 percent sensitivity and specificity in detecting various causes of infertility except for tubal diseases.

Conclusion: MRI is highly accurate in detecting polycystic ovaries, leiomyoma, endometriosis/adenomyosis, endometrial thickening and uterine and ovarian anomalies. MRI can complement hysterolaparoscopy especially when tubal diseases or endometriosis are suspected causes of infertility.

POS38

EVALUATING ULTRASOUND ELASTOGRAPHY IN DIABETIC NEPHROPATHY

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Keywords: *Nephropathy, Disease, Ultrasound, Patients, Progression, eGFR, Elasticity, Reduction, Tissues, Onset*

Background: The onset of diabetic nephropathy is insidious, and its detection is usually based on 24-hour microalbuminuria which is not only cumbersome and occurs only in bilateral disease. Alterations in the stiffness of renal tissues are better indicators of renal involvement in diabetic nephropathy which may prognosticate the stage of the renal disease. Hence, a pilot study was planned to understand the utility of ultrasound elastography in detecting the progression of nephropathy in diabetics.

Methodology: The study involved 50 diabetic patients including 25 each with and without nephropathy. The ultrasound elastography was performed using ARFI at the midpolar and inferior polar locations. The ARFI values were compared with patients without nephropathy and among those with different stages of disease.

Results: The Renal elasticity increases progressively with mild & moderate reduction in eGFR corresponding to microalbuminuria & overt proteinuria clinical stages respectively. With further severe reduction in eGFR corresponding clinically to end-stage renal disease, the renal elasticity values start declining. Maximum renal parenchymal elasticity is noted with moderate reduction in eGFR.

Conclusions: Ultrasound elastography is useful in mild to moderate reduction in eGFR corresponding to microproteinuria and overt proteinuria. Since US elastography is easily performed and can suggest early changes in unilateral disease as well, hence it should be included in the regular follow-up of patients with diabetic nephropathy for noninvasive assessment of its progression obviating cumbersome biochemical tests which may be affected by the diet and collection errors.

POS39

POST-COVID MYOCARDITIS ON CARDIAC MRI ---- FIRST CASE- SERIES AT RAWALPINDI INSTITUTE OF CARDIOLOGY

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ABSTRACT:

BACKGROUND:
Cardiac magnetic resonance imaging (CMRI) has already been established for the noninvasive detection of myocarditis. Cardiovascular complications have been reported in several cases of COVID-19, and most have concluded that myocarditis is the cause of the primary cardiac dysfunction. We report a few cases of post-COVID-19 myocarditis. This is the first case-series of post COVID-19 myocarditis from Rawalpindi Institute of Cardiology, in which the diagnosis was confirmed with the help of CMR.

OBJECTIVE:
To determine cause of symptoms of acute cardiac dysfunction with normal coronary arteries in post-COVID-19 patients refractory to routine treatment, using CMRI and to modify treatment accordingly.

METHODS:
A retrospective case-series. Clinical and radiological data of patients was analyzed.

RESULTS:
Cardiac MRI with contrast was performed on 07 patients on 3 Tesla MRI. Imaging findings showed decreased left ventricular ejection fraction with hypokinetic myocardial walls, edema and late myocardial enhancement. Based on the CMR findings, the patients were diagnosed as acute myocarditis using the modified Lake Louise Criteria.

CONCLUSION:
CMR is recommended as a promising tool to solve various problems in the diagnosis of myocarditis as well as in acute myocarditis associated with the disease of COVID-19.In such cases intravenous immunoglobulin and corticosteroids in combination have been widely used to date with effective results. Our patients received similar treatment along with antiarrhythmics and beta-blockers with uneventful hospital stay.

KEYWORDS*: COVID-19, CMRI, Late gadolinium enhancement, intravenous immunoglobulins, Lake Louise criteria*

POS40

ADNEXAL MASSES, A CASE BASED SIMPLIFED APPROACH ON MRI

Avni Skandhan
Aster Mims Kottakkal

KEYWORDS : *Lesions, MRI, Imaging, Patients, Lesion, Masses, Tumors, Prognosis, Biopsy, Carcinoma*

ABSTRACT
Ovarian masses are a common finding in routine clinical practice , with many of them being incidentally detected and some identified in symptomatic patients. Ovarian neoplasms may be benign, borderline or malignant. Characterization of an ovarian lesion is of utmost importance, in order to plan adequate therapeutic management. Ovarian cancer is the second most common gynaecologic malignancy and a leading cause of death among these diseases. A multidisciplinary approach, based on physical examination, laboratory tests and imaging techniques must be undertaken. An important issue to consider in the management of ovarian masses is that they are very common, but most of them are benign and only a small part is borderline or malignant. Preoperative biopsy should not be performed in ovarian masses, particularly if the mass appears to be surgically resectable at the moment, as this invasive procedure raises the risk of spreading cancer cells and potentially leads to iatrogenic upstaging the disease and worsening the prognosis.Pre-operative assessment is a diagnostic challenge. Optimal assessment of adnexal masses requires a multidisciplinary approach, based on physical examination, laboratory tests and imaging techniques. Characterization of an ovarian mass is of the utmost importance in the preoperative evaluation of an ovarian neoplasm. It enables the surgeon to anticipate carcinoma of the ovary before the operation so that adequate procedures can be planned. In recent years, surgical laparoscopy has been used to manage benign adnexal masses with minimal surgical morbidity. Surgery can be averted in many scenarios too with careful examination and MRI imaging of the sonologically intermediary lesions. Therefore, familiarity with the clinical and imaging features of various ovarian tumors is important in determining the likelihood of a tumor being benign or malignant.

BACKGROUND
Magnetic Resonance Imaging (MRI) is an essential problem solving tool to determine the site of origin of a pelvic mass and then to characterize an adnexal mass, especially in patients with indeterminate lesions. MRI is also reliable in detecting local invasion. The main advantages of MRI are the high contrast resolution with excellent soft tissue contrast and lack of ionizing radiation exposure, which is particularly important in young female patients.Morphological characteristics of adnexal masses range from cystic (both unilocular and multilocular), complex (cystic and solid) and predominantly solid. There is a certain overlap between benign and malignant tumours; in particular, it has to be considered that borderline lesions are very difficult to differentiate because they have both benign and malignant features. However with the advent of using advancements such as diffusion weighted imaging, dynamic contrast imaging etc, sensitivity and specificity of the studies have increased, thereby helping many difficult cases.

RESULTS
MRI can be used as a problem solving tool for ovarian and adnexal lesions, in indeterminate lesion, especially with a structured approach.

CONCLUSION
Providing a structured approach to MRI for ovarian and adnexal lesions and simplifying the analysis, filling the gap between differentiating benign and malignant.

POS41

THE ROLE OF 18-F-FLUORO-2-DEOXY-D-GLUCOSE POSITRON EMISSION TOMOGRAPHY/COMPUTED TOMOGRAPHY IN ASSESSING BONE MARROW INVOLVEMENT IN PATIENTS WITH LYMPHOMA

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Keywords: *lymphoma, hodgkins disease, PET/CT, bone marrow, trephine, diagnostic accuracy*

Background
Bone marrow involvement (BMI) affects lymphoma stage, survival, and treatment. Non-invasive Fluorodeoxyglucose positron emission tomography/computed tomography (FDG PET/CT) is used increasingly to identify marrow infiltration in addition to bone marrow biopsy (BMB). The objective of this study is to evaluate the diagnostic accuracy of PET–CT in diagnosis of bone marrow infiltration using bone marrow biopsy as a gold standard.

Methodology
A total of 256 adult patients with lymphoma (Hodgkin's and non-Hodgkin's) were enrolled in this cross-sectional study to determine the diagnostic accuracy of PET/CT in detection of bone marrow infiltration.

Results
Among total study subjects, bone marrow infiltration was found positive in 74 patients and negative in 172 patients on PET/CT examination. With bone marrow biopsy, bone marrow infiltration was found in 48 patients and 198 patients were negative. Our results yielded that 36 patients were true positive, correctly diagnosed and 160 patients were true negative, correctly diagnosed. Using BMB as the gold standard, the overall sensitivity of PET/CT was 75.00 %, specificity 80.81 %, positive predictive value (PPV) 48.65 %, and negative predictive value (NPV) was 93.02%.

Conclusion
The results from this study suggest that BMI should not be decided solely based on PET/CT or BMB findings. It is reasonable to use both diagnostic assays along with clinical and laboratory findings. PET/CT result, clinical and laboratory findings could be useful for predicting BMI in patients for whom BMB is contraindicated. Furthermore, PET/CT may provide a roadmap to guide a high yield for bone marrow biopsy.

POS42

ROLE OF TRAUMA WHOLE BODY CT SCAN: SELAYANG TRAUMA ALERT DIAGNOSTIC (STAD) PROTOCOL IN ESTABLISHING DIRECTION OF CARE FOR MAJOR TRAUMA PATIENTS

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Keywords: *trauma, trauma imaging, whole body CT, WBCT, dual bolus*

Background
Trauma is the leading cause of injury related death. Currently in Selayang Hospital, STAD protocol was introduced as the gold standard whole body CT scan (WBCT) diagnostic work-up to identify hidden injuries in major trauma patients. Early and accurate detection of organ injuries in patients presenting with polytrauma to the Emergency Department (ED) can change the direction of care from operative to conservative.

Methodology
All patients presenting with major trauma (using the revised trauma score) from the 1st of April until the 1st of May 2023 were included in this study. Within this cohort, patients who received a CT STAD protocol (using the ED Selayang criteria) were analysed and their disposition either to the operating room or conservative in acute care was studied.

Results
A total of 58 patients presented with major trauma to the ED, out of this there were 17 patients (29%) received a CT STAD Protocol. Out of these 17 patients who received a CT STAD Protocol, 14 patients (82%) were treated conservatively in acute care units.

Conclusion:
Only 29% of patients with major trauma received a CT STAD protocol. This may be due to the selective criteria in ED Selayang in selecting the probable candidates with multi organ injuries, to avoid unnecessary radiation and negative scans. 82% of patients who received a CT STAD protocol were treated conservatively as the injuries were diagnosed accurately on CT, thus avoiding unnecessary exploratory laparotomies.

POS43

CONGENITAL INTERVENTRICULAR MEMBRANOUS SEPTAL ANEURYSM

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Keywords: interventricular aneurysm, cardiac aneurysm, ventricular septal defect, cardiac magnetic resonance

Aneurysm of the membranous part of the interventricular septum is a rare congenital heart malformation which is commonly found concurrent with other cardiac abnormalities. The common theory of its etiology is that it forms during spontaneous physiological closure or reduction in size of a ventricular septal defect, with other etiologies being trauma and infection. This aneurysm is often asymptomatic, but it can develop complications such as right ventricular outflow tract obstruction, rupture, or thromboembolism. The mainstay of management in asymptomatic patients is conservative with close follow up.Herein, we are reporting a case of interventricular membranous septal aneurysm in a 12-year-old boy with underlying atrial and ventricular septal defects. As the appropriate management strategy is yet established, identification of this rare entity is crucial as it may cause potentially severe complications.

POS44

PARTIAL ANOMALOUS PULMONARY VENOUS RETURN AND ATRIAL SEPTAL DEFECT IN AN ADULT PATIENT DETECTED WITH 128-SLICE MULTIDETECTOR COMPUTED TOMOGRAPHY ---–A CASE PRESENTATION

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Keywords: *Partial anomalous pulmonary venous return (PAPVR), atrial septal defect (ASD), multidetector computed tomography (MDCT),CT cardiac angiography(CTCA),superior vena cava(SVC), pulmonary arterial hypertension (PAH).*

Abstract:
The present case describes a 34 years old male, who presented with shortness of breath at emergency of Rawalpindi Institute of Cardiology. An initial working diagnosis of pulmonary embolism was made.CTPA excluded pulmonary embolism.However,further evaluation with ECG-gated 128-slice multidetector computed tomography (MDCT) i.e. CT Cardiac angiography (CTCA), showed left-to-right shunt including partial anomalous pulmonary venous return (PAPVR), an atrial septal defect (ASD),persistent left superior vena cava(SVC) and pulmonary arterial hypertension (PAH) . PAPVR is defined as a left-to-right shunt where one or more, but not all, pulmonary veins drain into a systemic vein or the right atrium. PAPVR involving the right upper pulmonary vein can be associated with a sinus venosus ASD. The presence, course, number of anomalous veins and associated cardiovascular defects can be reliably observed by 128-slice MDCT angiography.

POS45

OSMOTIC DEMYELINATION SYNDROME COMPLICATING SEVERE HYPOKALEMIA : A CASE REPORT

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Keywords: Osmotic demyelination syndrome, hypokalemia, MRI

Osmotic demyelination syndrome (ODS) is a severe neurological condition that reflects demyelination secondary to rapid correction of hyponatremia. MRI plays an essential role in the positive and differential diagnosis.We report the case of a patient admitted to the intensive care unit for a flaccid paraplegia complicated by respiratory distress that required invasive ventilatory assistance. The biological work-up showed hypokalemia at 1.2 mmol/l without any other abnormality. MRI was in favor of ODS but rapid correction of hyponatremia was not found in his history, the evolution was favorable under potassium supplementation. The association of osmotic demyelination syndrome with rapid correction of hyponatremia is well known, but the involvement of hypokalemia in the pathogenesis of this syndrome is rarely reported in the literature.

POS46

MAGNETIC RESONANCE ANGIOGRAPHY (MRA) STUDY ON ANATOMICAL VARIATIONS OF THE CIRCLE OF WILLIS (COW) IN HOSPITAL KUALA LUMPUR POPULATION

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Keywords: *Circle of Willis, Magnetic Resonance Angiography, Anatomical Variation*

Background
The morphology and diameters of the COW arteries are thought to be important in determining the optimal blood distribution and collateral potential of the COW. This study aimed to look into the variations in COW morphology in Malaysian population based on gender, age, and ethnicity.

Methodology
This retrospective study was carried out at Kuala Lumpur Hospital on 152 patients, including 92 males and 60 females. These patients were taken from three major ethnic groups: Malay, Chinese, and Indian. The variations in COW morphology were assessed using three-dimensional time-of-flight (3D-TOF) MRA. The COW completeness and variants were investigated.

Results
Complete, partially complete, and incomplete configurations of the COW were observed in 16.4%, 48.7%, and 34.9% of cases, respectively. The anterior part of the COW had a complete configuration in 56.58 % of cases, with types A, G, and H being the most common variants. Only 25% of cases had a complete configuration in the COW's posterior part, with types E, A, D, F, and H being the most common variants.

Conclusion
Understanding the anatomical variations and diameters of the COW arteries is critical for explaining various neurological symptoms and completing neurovascular surgery successfully.

POS47

SPONTANEOUS REGRESSION OF SPINAL DURAL ARTERIOVENOUS FISTULA WITH DELAYED MRI DIAGNOSIS

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Keywords: *spinal dural arteriovenous fistula, magnetic resonance imaging, spontaneous regression*

Spinal dural arteriovenous fistula (SDAVF) is a rare phenomenon and often under- or misdiagnosed at presentation. They typically located in the thoracolumbar region and frequently present with non-specific symptoms of congestive myelopathy.Here, we report an unusual case of an elderly man presented with bilateral lower limb weakness and sensory disturbance that was initially treated as prolapsed intervertebral disc and underwent lumbar decompressive surgery. He was subsequently referred to our tertiary center as symptoms progressively worsened after a year. A diagnosis of SDAVF which was missed on the initial MRI was then made. Serial imaging that includes MRI with MRA, catheter angiogram and CTA of the spinal arteries indicates regression of the vascular shunt. Spontaneous disappearance of SDAVF has been scarcely reported and the exact mechanism that causes the occlusion remains unknown.

POS48

ORBITAL IMAGING FOR NEUROLOGICAL DISEASES-A WINDOW INTO THE BRAIN

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Keywords: *Orbit, MRI, Multiple Sclerosis, caroticocavernous fistula*

Background: The orbital imaging is usually performed for indications like visual problems,trauma and proptosis. However, orbital imaging sometimes is an effect of what`s happening inside the brain.

Methodology: Its a retrospective collection of cases with above indications on whom MRI Orbits was performed. The images were retrospectively reviewed by a trainee and neuroradiologist with more than 20 years of experience. Medical records were also reviewed.

Results: In all cases orbital contents gave us a clue what`s happening inside the brain.

Conclusion: We found careful evaluation of orbit give us a clue and in diagnosing some very difficult cases. Its recommended by our analysis that always screen orbits in all MRI Brains.

POS49

QUANTITATIVE MEASUREMENT OF RENAL ARTERY SPIN LABELING IMAGING: A NONINVASIVE INDICATOR OF PERFUSION IMPROVEMENT AFTER INTERVENTIONAL THERAPY FOR RENAL ARTERY STENOSIS

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Keywords *: Magnetic resonance Image; Arterial spin labeling; Renal artery stenosis; Glomerular filtration rate*

Background: To assess the feasibility of arterial spin labeling (ASL) imaging as a non-invasive indicator to evaluate the perfusion improvement of interventional therapy in patients with renal artery stenosis (RAS).

Methodology: Eleven patients who were determined with RAS by Digital Subtraction Angiography and underwent preoperative ASL exam were enrolled in the prospective study. All patients received interventional therapy, and seven patients underwent postoperative ASL examination. The renal blood flood (RBF) of the renal cortex and local abnormal perfusion region were measured in both preoperative and postoperative ASL imaging. The local abnormal perfusion region was subjectively assessed by the radiologist. The correlation between RBF and kidney glomerular filtration rate (GFR) was evaluated. The differences between preoperative and postoperative RBF in patients with RAS were compared.

Results: The Systolic and diastolic blood pressure decreased in all RAS patients after interventional therapy. There was a significant correlation between preoperative cortical RBF and preoperative single kidney GFR (r= 0.504, p=0.024), but no significant correlation between preoperative cortical RBF and preoperative estimated GFR (r= 0.159, p=0.530). Of the seven patients who underwent postoperative ASL imaging, the renal cortical RBF was higher than preoperative RBF (203.19±51.42 vs.164.00±68.10, p=0.005). The postoperative RBF in the region of abnormal perfusion was also higher than the preoperative RBF (159.92±46.10 vs. 108.55±39.57, p=0.001).

Conclusion: Renal RBF obtained by ASL images was significantly correlated with single renal function, and could be used to evaluate the perfusion improvement in RAS patients after interventional therapy.

POS50

THE DIFFERENCE FINDING IN MAGNETIC RESONANCE IMAGING STUDY OF THE AMYGDALA-HIPPOCAMPAL COMPLEX AND SUPERIOR TEMPORAL GYRUS AMONG TREATMENT-RESISTANT SCHIZOPHRENIA AND NON-TREATMENT-RESISTANT SCHIZOPHRENIA - A PILOT STUDY.

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Keywords: *Treatment-resistant schizophrenia, amygdala-hippocampal complex, superior-temporal gyrus, Magnetic resonance imaging.*

Background

Structural brain abnormalities is one of the leading cause of developing treatment-resistant schizophrenia. The main region affected is temporal lobes structures. Conventional magnetic resonance imaging has higher sensitivity, lacks ionising radiation and has been widely used in detecting structural brain abnormality. Because of the anatomic orientation of the temporal lobe, MRI findings are best identified by using a coronal oblique view. The purpose of this study is to compare the structure, signal intensity, and volumes of bilateral amygdala-hippocampal complex and superior temporal gyrus in treatment-resistant schizophrenia (TRS) and non-treatment-resistant schizophrenia (non-TRS) in this view.

Methodology

This prospective cohort study was conducted at Hospital Universiti Sains Malaysia (USM) on 30 patients, including 14 TRS patients and 16 non-TRS patients. These patients are subjected to an MRI brain study using epilepsy protocol. MR images were evaluated for loss of volume and abnormal signal intensity of bilateral amygdala-hippocampal complex (AHC) and superior temporal gyrus (STG) on T1- and T2-weighted images, as well as FLAIR images. The volumes of those structures are measured using Philips Intellispace Portal Software. Mean and standard deviations (SD) were obtained for each measurement, and the level of significance was determined (p-value < 0.05). The structure, signal intensity, and volumes of the bilateral amygdala-hippocampal complex and superior temporal gyrus for both groups were studied.

Results

There was a significant mean difference in volumetric values between the groups of right AHC in the coronal plane (AHC COR) and right AHC in the axial plane (AHC AX) (p-value < 0.05). The mean and SD of right AHC COR in TRS patients is 25.3 cm^3 (SD= 9.1 cm^3) were higher than in Non-TRS patients, which is 18.8 cm (SD=5.4 cm^3). The results also showed a high mean right AHC AX value in TRS patients, 29.0 cm^3 (SD=11.1 cm^3) compared to Non-TRS patients, 21.9 cm^3 (SD=5.5 cm^3). There were no significant mean differences of left AHC COR and AX between the patient groups (p-value > 0.05). The mean and SD of left AHC COR in TRS patients is 21.2 cm^3 (SD=7.7 cm^3) and Non-TRS patients is 16.6 cm^3 (SD=6.4 cm^3). The mean of left AHC AX in TRS patients is 25.0 cm^3 (SD = 10.7 cm^3) and Non-TRS patients is 20.4 cm^3 (SD=5.1 cm^3). There was no significant mean difference in volumetric values between the groups of bilateral STG in the coronal plane (STG COR) and sagittal plane (STG SAG) (p-value > 0.05). The mean and SD of right STG COR in TRS patients is 10.9 cm^3 (SD=5.9 cm^3) and Non-TRS patients is 12.0 cm^3 (SD=3.0 cm^3). The mean of left STG COR in TRS

patients is 17.3 cm^3 (SD=9.5 cm^3) and Non-TRS patients is 14.4 cm^3 (SD=2.4 cm^3). The mean of right STG SAG in TRS patients is 14.8 cm^3 (SD=3.6 cm^3) and Non-TRS patients is 14.5 cm^3 (SD=7.6 cm^3). The mean of left STG SAG in TRS patients is 24.1 cm^3 (SD=6.1 cm^3) and Non-TRS patients is 16.2 cm^3 (SD=5.4 cm^3). There was no significant association between the brain structures, signal intensity, and group of patients (p-value < 0.05). The finding shows that the proportion of patients in TRS and Non-TRS patients was almost similar in terms of brain structure. All patients were detected with no abnormal signal intensity.

Conclusion

In conclusion, our findings show that TRS was associated with an increase in the mean volume of right AHC in both axial and coronal planes relative to non-TRS patients.

POS51

SECONDARY CNS LYMPHOMA RELATED VENTRICULITIS

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Keywords: *Treatment-resistant schizophrenia, amygdala-hippocampal complex, superior-temporal gyrus, Magnetic resonance imaging*

Introduction:
Lymphoma-related CNS involvement is a severe and uncommon illness that can manifest in either primary or secondary forms. Secondary CNS lymphoma (SCNSL) is defined as lymphoma not originating from within CNS or systemic progressive disease. SCNSL presents either by leptomeningeal spread, parenchymal, or both.

Report:
We reported a case of a 63-year-old man who presented with thyroid swelling with obstructive symptoms for 5 months and underwent total thyroidectomy. Histopathology results revealed primary thyroid Diffuse Large B-Cell Lymphoma (DLBCL) and given chemotherapy. However, 2 weeks later he presented with subacute onset of encephalopathy and generalized body weakness. No infective symptoms. Blood investigations revealed raised lactate dehydrogenase (LDH) 340 IU/L. Lumbar puncture demonstrated an opening pressure of 12cm H_2O, acellular, raised CSF protein (5.18g/L), lactate (10.73 mmol/L), negative cryptococcal Ag, and negative CSF aerobic, anaerobic, and TB cultures. CSF cytology was inconclusive. CSF flow cytometry and brain biopsy were not performed. MRI showed thick nodular enhancing ependymal lining of the lateral ventricles and mild hydrocephalus. Because of the negative CSF culture, patient was empirically treated as SCNSL. However, patient's condition continued to deteriorate, and succumbed after 3 weeks due to aspiration pneumonia.

Conclusion:
We believe this is a rare case of secondary CNS lymphoma with ependymal involvement as the site of metastasis from primary thyroid DLBCL.

POS52

UNILATERAL ABDUCENS NERVE (CN6) PALSY AS CLINICAL MANIFESTATION OF INTRACRANIAL HYPOTENSION

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Keywords: *Lateral gaze palsy, hydrocephalus, intracranial hypotension, pseudomeningocele*

Patients with lateral gaze palsy often present to MRI to look for abducens nerve (CN6) pathology. The offending pathology could be located anywhere between the brainstem and orbit. We present a case of 63-year-old female with metastatic breast carcinoma who developed right eye lateral gaze palsy after cervical laminectomy. CT demonstrated obstructive hydrocephalus, which had developed 2 days after surgery. Neither the cause of hydrocephalus nor CN6 palsy was identified. A month later, MRI showed crowding of posterior cranial fossa structures with effacement of subarachnoid spaces. A paraspinal collection was partially visualized at the cervical laminectomy. Reexamination of earlier CT revealed progressive decent of posterior fossa structures toward the foramen magnum. Findings were concluded as intracranial hypotension secondary to cervical pseudomeningocele with non-localizing right CN6 palsy and hydrocephalus. This case highlights the complexity of intracranial hypotension, which frequently suffers from satisfaction of search error in radiology reporting.

POS53

BRAIN ABSCESS ASSOCIATED WITH TETRALOGY OF FALLOT: A CASE REPORT

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Keywords: *brain abscess, tetralogy of fallot, TOF, congenital heart disease*

This is a case of a 6/M, known case of Tetralogy of Fallot, who came in due to cough and fever. Patient was admitted since the patient refuses to take and voluntarily spits oral antibiotics. Upon admission imaging was done with contrast enhanced head CT part of the said work-up. Imaging findings revealed several, well-defined, intra-axial lesions with central fluid-attenuating component and hyperdense minimally-enhancing rings along the left frontal lobe. The largest measures 5.1 x 3.6 x 4.5 cm. Extensive perilesional edema, effacement of the overlying sulci and left Sylvian fissure are noted. Compression of the left lateral ventricle and resultant dilatation of the rest of the ventricular system is noted. Periventricular hypodensities are appreciated. Above findings compatible with early to late encapsulation stage of left frontal lobe abscess with ventriculitis, meningitis, secondary hydrocephalus with transependymal seepage. This is a relatively unusual but potentially life-threatening infection of brain parenchyma, which can occur in around 5%–18.7% of the population with cyanotic CHD with peak incidence occurring between 4 years and 7 years of age.

POS54

HAMMOCK SIGN: AN ALMOST FORGOTTEN FEATURE IN CARDIAC RADIOLOGY

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Keywords: *anomalous origin, coronary artery, coronary angiography, subpulmonic, transseptal, intraseptal*

Introduction:

Anomalous origin of the left coronary artery from right aortic sinus is a rare congenital anomaly associated with significantly increased risk of myocardial ischaemia, arrythmia and sudden cardiac death.We present a case of anomalous origin of left coronary artery from right aortic sinus evaluated with conventional coronary angiography and ECG-gated computed tomography who presented with cardiac arrest. This patient has a transseptal course of the left coronary artery, demonstrating a Hammock sign on imaging findings.

Case report:

A 56 years old gentleman presented with sudden shortness of breath then followed by ventricular fibrillation and asystole.He was successfully resuscitated. The echocardiogram showed inferior LV infarct (image not shown).Coronary angiography performed showed anomalous left main stem coronary origin from right coronary sinus (Fig 1).CTA coronary was then performed and showed left main coronary artery origin from right coronary cusp. It has separate ostium from the right coronary artery ostium.There is acute angulation of the proximal LMCA to the left (Fig 2). It courses below the pulmonary valve through the interventricular septal myocardium. Once it emerges from the interventricular septum it trifurcates into LAD, LCx and RI with normal courses.There is hammock-like downward slope of the mid LMCA segment (Fig 3).The lumen of the LMCA is patent and fairly uniform in shape during diastole and systole. No slit like appearance (Fig 4).

Discussion:

Coronary anomalies are rare. Based on a study only 1.5% are found to have anomalous aortic origin coronary (AAOCA) from total of 3539 subjects who were referred for CTA coronary[1]. This data is comparable to the study by Cheezum et al of 1.7% from total of 5991 subjects[2]. The left main coronary artery arising from right sinus is the least common than the left circumflex arising from right sinus and right coronary artery from the left sinus[1].Anomalous origin of the left coronary artery from the right sinus may be further classified into four subtypes; prepulmonic, anterior to the pulmonary artery ; interarterial, courses between aorta and pulmonary artery ; transseptal, intraseptal or subpulmonic, intramyocardial course before resurfacing at proximal interventricular groove; and retroaortic, passes posteriorly behind aorta[3].The standard imaging tool for evaluation of coronary artery anomalies is coronary CT angiography. The previous modality of choice was conventional cardiac angiography. Other modalities such as MRI is also useful in detecting coronary artery anomalies but is not widely used in clinical setting[4]. Essential features to be evaluated in coronary CTA are luminal diameter, proximal vessel morphology, length of narrowing, acute angle, intramural course, vessel take off level and ostia type[2].It is important to recognize the radiological difference between the s transseptal and interarterial subtypes. Both of these variants are considered malignant variant and carries high risk for significant cardiac events. Few cases has reported variable presentations of symptoms in transseptal such as atrial fibrillation, unstable angina and recurrent atypical chest pain [5,6,7].There are few features favoring the transseptal variant, one is the Hammock sign. The downward course of the coronary artery below the crista supraventricularis give rise to the Hammock sign. Other features favouring transseptal variant are the coronary vessel is surrounded by myocardium in the interventricular septum, and there is no slit like or oblong orifice[4].

Conclusion:

Hammock sign is due to downward course of the coronary artery below the crista supraventricularis. This

sign is pathognomonic to the transseptal variant of the anomalous aortic origin left coronary artery and should not be forgotten.

POS55

A MIDLINE DURAL SINUS MALFORMATION DIAGNOSED IN PREVIOUSLY HEALTHY YOUNG ADULT

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Keywords: *Adult, dural sinus malformation, seizure, torcula, midline*

Dural sinus malformation is a rare vascular anomaly usually found in foetuses and infants. The prognosis is reported to be poor in a midline type. Herein, we report a case of midline dural sinus malformation in a 26-year-old man who is previously healthy with no significant antenatal history and normal childhood. He has no learning disability and is employed in a well-to-do position. There are no prior neurological symptoms. He presented with his first episode of generalized seizure. Contrasted-enhanced CT scan of the brain showed hugely dilated cerebral venous sinuses involving the superior sagittal, torcula, straight and bilateral transverse sinuses with gross hydrocephalus caused by compression of the fourth ventricle.

POS56

MYCOTIC GIANT CORONARY ARTERY ANEURYSM: AN INCIDENTAL FINDINGS IN CONVENTIONAL CT THORAX OF PULMONARY TUBERCULOSIS.

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Keywords: *Mycotic giant coronary artery aneurysm, Tuberculosis*

Mycotic giant coronary artery aneurysm is a rare entity, and its diagnosis is even more unusual in conventional computed tomography (CT) thorax imaging. The patient, a 67-year-old man with chronic obstructive airway disease, smear-positive pulmonary tuberculosis (PTB), had a history of myocardial infarction. The CT scan revealed a large lobulated mass measuring up to 11.0cm, indicating a giant coronary artery aneurysm with mural thrombus that exerted mass effect onto right atrium. Lung reconstruction images displayed consolidations and cavitation in the adjacent middle and upper lobes, suggesting active tuberculosis with background bronchiectasis. The development of this entity is thought to be influenced by various factors including septic vascular dilatation, systemic bacteremia, local inflammation by Mycobacterium invading the vessel wall and possibly immune-complex deposition. Although often asymptomatic, this condition can lead to non-specific angina-related symptoms, and in severe cases, myocardial ischemia.

POS57

A RARE CASE OF FDG-AVID BENIGN METASTASIZING LEIOMYOMA WITH SKELETAL METASTASES

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Keywords: *Skeletal benign metastasizing leiomyoma, FDG avid, 18-FDG-PET/CT.*

Benign metastasizing leiomyoma (BML) is rare, usually occurring in women of childbearing age with a previous history of uterine leiomyoma. BML commonly metastasizes to the lungs. Less common sites include the bones, pelvis, abdomen, heart, and brain. We report a case of skeletal BML in a previously healthy lady who presented with right leg swelling. An initial MRI of the lower limbs demonstrated an aggressive right tibial lesion. Subsequent F-18 fluorodeoxyglucose positron emission tomography computed tomography (18-FDG-PET/CT) demonstrated a hypermetabolic uterine mass with multiple FDG-avid bone metastases. Histopathologically, the uterine and tibial lesions were consistent with leiomyomata. FDG-avidity is rare (three of 38 cases in a case series) in BML. Typically, in a patient with prior history of uterine leiomyoma and non-FDG-avid uterine lesions with metastases, BML should be considered. FDG-avidity and absence of previous uterine leiomyoma necessitated histopathological correlation for diagnosis and management.

POS58

A CASE OF ACUTE NECROTIZING ENCEPHALOPATHY (ANEC) IN ASSOCIATION WITH COVID-19 INFECTION IN A PREVIOUSLY HEALTHY MALE

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Keywords: ANEC, Covid 19

COVID-19 viral infection which may be linked to an acute severe encephalopathy, was thought to represent an immune-mediated phenomena . This is a case of a healthy 31yr old man presented with acute delirium, jaw opening dystonia and myorhythmic orofacial movement at day 10 of fever .PCR test for COVID-19 was positive. In ward, patient had episodes of fall. A contrasted CT brain revealed bilateral thalamic hypodensities. Patient's condition remained static despite on regular IV dexamethasone, IV Thiamine and T.Haloperidol. MRI at Day 17 of illness demonstrated diffuse bilateral thalamic T2W/FLAIR-hyperintensities which bloom in GRE and subtle T2W/FLAIR hyperintensities at bilateral dentate nuclei and pons, consistent with ANEC post Covid-19 infection. Patient improved after 3 days of IV Methylprednisolone 1g OD combined with Trihexyphenidyl and benzodiazepine. He was discharged well on Day 22. Repeated MRI Brain 6 weeks post infection showed resolving bilateral thalamic lesions which correlated with improving clinical symptoms.

POS59

ROLE OF POSTCONTRAST MAGNETIC RESONANCE CHOLANGIOGRAPHY IN OBSTRUCTIVE BILIOPATHY

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Keywords: *Patients, MRI, Obstruction, Resonance, Accuracy, Lesions, Obesity, MRC, Cause, Surgery*

Background: Heavy T2W, noncontrast, Magnetic resonance cholangiography (MRC) is a common screening protocol for all patients with obstructive biliopathy but is associated with multiple artefacts especially in patients with obesity, ascites, and high breathing rate. Postcontrast MRC performed following delayed scanning using hepatocyte specific Magnetic Resonance contrast agents (MRCA) can overcome majority of these disadvantages. Hence, we conducted a pilot study for evaluating and comparing their roles.

Methodology: Twenty-five patients with obstructive biliopathy underwent both postcontrast and noncontrast MRC on 1.5T MR scanner and the results were finally compared with those of ERCP/surgery.

Results: Postcontrast MRC was accurate in 100% compared to less than 90% accuracy of non-contrast MRI in delineating the exact site of obstruction. In many cases, postcontrast MRC was useful in revealing non-obstructive dilation of the biliary tract. Though, the accuracy of postcontrast MRC was 80% in delineating the cause but the accuracy of noncontrast MRC was less than 50%. The only disadvantage of postcontrast MRC was non-delineation of the anatomy of the pancreaticobiliary channel.

Conclusions: Postcontrast MRC scores over noncontrast MRC in obstructive biliopathy, significantly aiding in high accuracy of the site and cause of obstruction. Hepatocyte specific MRI contrast agents are not only useful in hepatic lesions but when used routinely in patients with obstructive biliopathy, yields better results than noncontrast MRC.

POS60

OROPHARYNGEAL TERATOMA - A CASE OF RARE CONGENITAL MALFORMATION WITH ATYPICAL CT FINDINGS

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Keywords: *Oropharyngeal; Teratoma; Cyst; Epignathus*

Newborn oropharyngeal teratomas are extremely rare disorders. Epignathus tumour is a congenital malformation characterized as a 'mature teratoma' located at the oropharyngeal region. Teratomas in the upper respiratory airway give rise to abnormal life-threatening airway obstruction during the neonatal period. It is associated with high morbidity and mortality, requiring proper and cautious planning and prompt surgery. We describe a rare case of oropharyngeal teratoma in a premature male neonate (35 weeks gestation) who presented with difficult intubation. On flexible laryngoscopy, it appears as a large vallecular cyst, while the Computed Tomography (CT) scan demonstrates a posterior pharyngeal wall cystic lesion causing oropharynx narrowing. The patient was operated on 8th day postpartum. Histopathological examination was compatible with mature cystic teratoma.

POS61

NASAL TYPE EXTRANODAL NATURAL KILLER/T-CELL LYMPHOMA: A CASE REPORT

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Keywords: *NK/T-cell lymphoma, natural killer lymphoma, Epstein-Barr virus, nasal type*

Extranodal natural killer/T-cell lymphoma (NKTL), nasal type, is a rare, unique subtype of non-Hodgkin lymphoma more common in Asia and Latin America but rare elsewhere. There is strong association with Epstein-Barr virus infection and male preponderance. Presenting symptoms are variable but usually similar to benign inflammatory diseases. However, clinical course is typically aggressive with high mortality, making early diagnosis imperative. We report a case which initially treated for presumed infection. A 55-year-old gentleman presented with left nasal swelling for 3weeks with nasal discharge and fever. Nasal endoscopy revealed whitish debris and mass blocking left nasal cavity. CT Paranasal Sinuses showed left nasal vestibule mass causing nasal obstruction, diffuse soft tissue swelling of upper lip and philtrum, left facial inflammation and anterior nasal spine erosion. Histopathological analysis concluded compatibility with NKTL. Our case demonstrates a rare, challenging diagnosis with common nasal presentation, alerting the need for its inclusion in differential diagnosis.

POS62

DELAYED CEMENT PULMONARY EMBOLISM

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Keywords: *Tomography, X-Ray Computed; Pulmonary Embolism (PE); Pulmonary artery thrombosis*

A 52-year-old woman presented with intermittent chest tightness and shortness of breath for six months. The patient underwent percutaneous vertebroplasty (PVP) 10 years prior for a vertebral compression fracture at T2, T4, T9, and T11. Further investigation revealed that the patient had no other significant medical history or deep vein thrombosis or pulmonary embolism before this presentation. The echocardiography showed a right ventricular-aortic-right pulmonary artery mass. Then a computed tomography pulmonary angiography (CTPA) showed high-density emboli in the main and right pulmonary arteries and their branches (Figure A). Multidetector CT three-dimensional reconstruction demonstrated that bone cement refluxed through the lumbar and ascending lumbar vein to the Azygos vein and then the right heart, and then entered the main and the right pulmonary artery and their branches. (Figure B). Anticoagulant therapy was suggested, but open-heart surgery was also an option. The patient declined surgery and underwent anticoagulant therapy. At a 1-month follow-up, her symptoms had abated.Figure A: A computed tomography pulmonary angiography (CTPA) showed high-density emboli in the Azygos vein, the main and right pulmonary arteries and their branches.Figure B: Multidetector CT three-dimensional reconstruction demonstrated that bone cement refluxed through the lumbar vein and ascending lumbar vein to the azygos vein and then the right heart, and then entered the main pulmonary artery and the right pulmonary artery and their branches.

POS63

A RARE CASE OF EXTRASKELETAL EWING SARCOMA IN A TEENAGE BOY

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Keywords: *Ewing Sarcoma, Paravertebral, Extraskeletal*

Ewing sarcoma comes under a family of tumours that origin from mesenchymal stem cells. It is considered as a rare malignant neoplasm, first described by James Erwing in 1921. They can have skeletal or extraskeletal manifestation. The commonly reported locations for Extraskeletal Ewing Sarcoma (EES) are paravertebral region (32%), lower extremities (26%), chest wall (18%), retroperitoneum (11%) and pelvic region (11%).We present a case of an 18 year old boy presented with worsening abdominal distension for duration of 4 months associated with significant loss of weight. Clinically, abdomen was grossly distended with normal blood investigation parameters. Initial imaging of ultrasound abdomen noted a right sided abdominal mass with right hydronephrosis. Proceeded with CT abdomen which revealed a large right paravertebral mass with no clear fat plane with the right psoas muscle extending to the left side of the abdomen. He was then transferred to tertiary centre for biopsy. The histopathological features and immunoprofile of the lesion are in keeping with Ewing Sarcoma. He completed seven cycles of chemotherapy. Repeated CTs post completion of chemotherapy did not show signs of reduction of the mass, hence did not proceed with surgical intervention thereafter. He then succumbed to death approximately 2 months post completion of chemotherapy. Although rare, Extraskeletal Ewing Sarcoma should be considered in teenage group presenting with large abdominal mass.

POS64

PASS THE TORCH: A CASE OF A PROBABLE MATERNOFETAL CYTOMEGALOVIRUS INFECTION IN UTERO

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Keywords: *congenital CMV, maternofetal infection, in utero, cytomegalovirus*

Infections during pregnancy pose a worrisome global health burden. Congenital perinatal infections present with varying degrees of morbidity, with overlapping clinical and imaging findings. This is a case of a newborn female with a constellation of findings secondary to a possible congenital infection. Imaging findings of cerebral and corpus callosal atrophy, lissencephaly, periventricular calcifications, and obstructive hydrocephalus secondary to narrowing of the cerebral aqueduct with the positive maternal and fetal serum IgG points to a possible primary versus non-primary Cytomegalovirus infection in utero.

POS65

NECROTIZING EPIGLOTTITIS : A CASE REPORT OF A SILENT LIFE-THREATENING EVENT

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Keywords: *necrotizing epiglottitis, epiglottitis, tracheostomy*

We report a rare case of an acute necrotizing epiglottis in a healthy adult who initially presented with mild upper respiratory tract symptoms, however experiencing sudden deterioration with acute airway obstruction needing emergency tracheostomy. Necrotizing epiglottis is a rare entity that is often seen in immunocompromised patients. It is an eminent morbid infection with high risk of functional deficits if left untreated. Rapid recognition of the symptoms and early intervention is important to prevent further complication. The core of treatment includes intravenous antibiotics and surgical debridement. Our patient fortunately recovers swiftly requiring no further invasive intervention. Although uncommon, we emphasized on awareness of early recognition, potential complications and benefits of early debridement to avoid local tissue loss and airway obstruction.

POS66

UNSPECIFIC RECURRING ABDOMINAL PAIN IN AN ADULT WITH ILEO-ILEAL INTUSSUSCEPTION INCURRED BY AN ILEAL LIPOMA: A CASE REPORT

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***Keywords**: intussusception, ileal lipoma*

The initial diagnosis of intussusception in adults very often can be missed and cause delayed treatment and possible serious complications. We report the case of an adult patient presented with an unspecified complaint of abdominal pain. A 54-year-old gentleman presented with abdominal pain, distension, tenesmus, per rectal bleed and altered bowel habits; constipation and loose stool for 1-month duration and obstructive symptoms for 2 days. Plain abdominal x-ray showed multiple dilated small bowels and abdominal computed tomography scan revealed a long segment ileo-ileal intussusception with a fatty ileal mass as the lead point. Upon emergency laparotomy, the radiological findings were confirmed and a small bowel resection was performed. An anatomical pathology examination revealed an ileal lipoma. In adults, intussusception is uncommon and preoperative diagnosis is very tricky because the symptoms can be short-lived or persistent. The cause of lead point can be detected by abdominal CT.

POS67

DIFFERENCE IN FOREARM COMPARED TO LUMBAR SPINE AND HIP FOR BONE MINERAL DENSITY IN POSTMENOPAUSAL WOMEN AT SULTAN AHMAD SHAH MEDICAL CENTRE @IIUM, KUANTAN

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Keywords: *osteoporosis, bone mineral density, postmenopausal*

Background

Osteoporosis is a widely known disease, particularly among elderly women. It is becoming more of a concern as the elderly population grows. Central Dual-energy bone absorptiometry (DEXA) scan is widely used to diagnose osteoporosis. The utilisation of peripheral DEXA scans is limited in certain medical conditions such as hyperparathyroidism. The purpose of our study is to compare bone mineral density at the peripheral site (forearm) with central bone mineral density (hip and lumbar spine) in postmenopausal women using a DEXA scan.

Methodology

A cross-sectional study was held among postmenopausal women at Sultan Ahmad Shah Medical Centre (SASMEC@IIUM). A total of 15 participants who fulfilled the inclusion and exclusion criteria were scanned using Hologic Discovery Wi DEXA machine from February 2021 until December 2021. Bone mineral density (BMD) measurement was taken at the wrist, hip, and lumbar spine.

Results

Forty per cent of our study cohort were diagnosed with osteoporosis using forearm assessment compared to only 20% using hip and 27% using the lumbar spine. There is no significant difference between the mean T-score at the forearm compared to the hip and lumbar spine. The BMD at the forearm shows a significant positive correlation with BMD at the hip with moderate strength of correlation.

Conclusion

Wrist bone mineral density is an alternative site for bone mineral density measurement in postmenopausal women.

POS68

ILEAL DIVERTICULITIS : A RARE DISEASE ENTITY, MIMICKING ACUTE APPENDICITIS

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Keywords: *diverticulitis, ileum, small bowel diverticulosis*

Ileal diverticulitis is a rare form of diverticulitis. It is acquired clinical entity with higher prevalence among patients aged between 60 and 70. The disease is considered relatively innocuous as patient mostly are asymptomatic. Small bowel diverticula including ileal diverticula are considered false diverticula. It can mimic other disease such as acute appendicitis. We report an interesting case of ileal diverticulitis in 84 year old male who presented to the emergency department with right lower abdominal pain and fever for 4 days, given clinical diagnosis of acute appendicitis. Computed tomography scan revealed diverticular formation in the ileum with inflammatory changes, suggestive of diverticulitis. He responding well to the intravenous antibiotic therapy. Considering the rarity of ileal diverticulitis, it should not be left out as one of the differential diagnosis in patient who presented with right lower abdominal pain.

POS69

RETINOBLASTOMA: LARGE SUPRASELLAR MASS PRESENTING CNS METASTASIS

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***Keywords**: Retinoblastoma, trilateral retinoblastoma, CNS metastasis.*

Retinoblastoma is the most common primary intraocular malignancy in infancy and childhood, accounts for 3% of all pediatric cancers. Delayed diagnosis and treatment leads to extraocular metastasis, including central nervous system (CNS) metastasis, visual loss and death. We report a case who presented with leukocoria and MRI shows left intraocular lesion suggestive of retinoblastoma. This patient defaulted follow-up and presented again with increased intracranial pressure symptoms, which subsequent MRI brain demonstrate left optic nerve enlargement with a large suprasellar mass and MRI whole spine showed diffused leptomeningeal enhancement. We concluded this patient developed CNS metastasis as direct invasion of intracranial optical nerve, suprasellar cistern and meninges were observed on the subsequent MRI Brain and Spine. Metastatic retinoblastoma is rare with incidence of 9 to 11 % and CNS metastasis is the most common presentation. It has exceedingly poor prognosis and a high mortality rate. Early detection of this disease are crucial to implement accurate treatment.

POS70

EVALUATING ROLE OF MAGNETIC RESONANCE IMAGING IN COLORECTAL DISEASES

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Keywords: *MRI, patients, bowel, lesions, diseases, carcinoma, colonoscopy, disease, sensitivity, morbidity*

Colorectal disease especially carcinoma are important causes of morbidity and mortality in modern era. With rising incidence of colorectal diseases and due to limitations of conventional flexible fibreoptic colonoscopy (gold standard tool), imaging plays a significant role in evaluation of these patients. Recent developments in magnetic resonance imaging (MRI) coupled with its advantages of non-invasive & radiation free nature, has made MRI a screening tool in colorectal diseases.

Methodology: Eighty-eight patients with signs and symptoms of colorectal disease were evaluated on 1.5T MR scanner followed by conventional, flexible, fibreoptic colonoscopy on the same day. Bowel preparation was done using polyethylene glycol. Data from MRI and colonoscopy was recorded and compared with the final diagnosis.

Results: Majority of patients in the study were in 21-40yrs age group with male predominance. Altered bowel habit followed by bleeding per rectum were the commonest presentations. Both MRI and colonoscopy overdiagnosed the lesions as malignant with higher errors on MRI. MRI was very effective in the detection of growth, strictures, diverticulosis, mucosal thickening/edema and extracolonic manifestation but failed in detecting small polyps and ulcers. MRI had high sensitivity & negative predictive value of 100% with an accuracy of greater than 70% in our study.

Conclusion: MRI with its noninvasive & radiation free nature along with its high sensitivity & negative predictive value for malignant lesions should be considered over colonoscopy as well as computed tomography in evaluation of colorectal diseases.

POS71

TORSION OF UNDESCENDED TESTIS IN ADULTHOOD: A RARE CASE

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Keywords: *undescended testis, testicular torsion, Cryptorchidism*

Cryptorchidism or undescended testis is one of the most common birth defects in male and also at higher risks of torsion. Symptoms at time of presentation are often non-specific and often a challenge for diagnosis, as delayed management may lead to testicular loss. A 40-year-old man was brought to the emergency department with a painful right groin swelling for 4 days duration. Physical examination showed a tender and erythematous right inguinal swelling. The right scrotal sac was empty. Urgent ultrasound revealed a heterogeneously hypoechoic structure resembling right testis in the right inguinal region with significant reduction in the internal vascularity on colour doppler. The right spermatic cord was twisted giving the 'whirlpool sign' appearance with absence of vascularity in the right spermatic cord. Presence of surrounding reactive hydrocele was seen. The right scrotal sac was empty. Thus a diagnosis of torsion of right undescended testis was made. Intraoperative findings were consistent with ultrasound findings whereby the right testis was seen just below the superficial inguinal ring as well as twisted right spermatic cord. The right testis was gangrenous with surrounding haemorrhagic hydrocele. Right orchidectomy was later performed. The exact incidence of torsion in undescended testis remains unknown. To date, only a few cases of undescended testicular torsion have been reported, mostly involving children. Due to the non-specific symptoms, diagnosis can be challenging. Ultrasound is a safe, fast and accessible imaging modality in aiding proper diagnosis, thus improving testicular salvage rate.

POS72

ETHMOID SINUS LANGERHANS CELL HISTIOCYTOSIS MIMICKING FIBROUS DYSPLASIA

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Keywords: *Langerhans Cell Histiocytosis, ethmoid sinus.*

Langerhans cell histiocytosis (LCH) is rare and it is more likely to occur in children below 15 years of age with the most common manifestations of the disease are bone lesions. Head and neck manifestations of LCH are frequent, however the involvement of paranasal sinus is very rare. We presented a case of 1 year old boy initially presented with unprovoked scalp and left lower limb swelling. Plain radiographs revealed multiple expansile lytic skull, femur, tibia and tarsal bone lesions with internal ground glass opacity. Differential diagnosis at the time was polyostotic fibrous dysplasia. Case subsequently default follow up, then came back a year later when presented with recurrent unilateral epistaxis. Flexible scope noted firm mass arising medial to middle turbinate, extending to spheno-ethmoidal recess. CT and MRI of paranasal sinus revealed posterior ethmoid sinonasal soft tissue lesion with local extensions. There is associated bony expansion and pressure erosion with internal ground glass density again noted. The latter results in primary diagnosis of fibrous dysplasia. Child underwent right functional endoscopic sinus surgery and biopsy consistent with Langerhans cell histiocytosis. Child was treated accordingly. In conclusion, although common cause of ground glass opacity of the bone is fibrous dysplasia, the presence of associated soft tissue makes LCH more likely.

POS73

ACUTE SUPPURATIVE APPENDICITIS

PRESENTED WITH ILEOCOLIC INTUSSUSCEPTION AND BOWEL ISCHAEMIA

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Keyword: Acute appendicitis, Intussusception, Bowel ischaemia

Intussusception in adolescent usually associated with a lead point. Clinically, both intussuception and appendicitis have similar presentation. We described an interesting case of 17 years old boy with Covid 19 Category 2A presented with one day history of abdominal pain, loose stool and vomiting. He had 2 weeks history of dyspepsia. He also had fever which resolved 2days prior to admission. There is tenderness and guarding at umbilical region. A computed tomography scan of the abdomen showed a long segment ileocolic intussusception with poor enhancement of the bowel wall which may represent a bowel ischaemia. No features of bowel perforation. The patient underwent laparotomy with right hemicolectomy and ileocolic anastomosis. He recovered well after surgery and discharged. Histopathology of the right hemicolectomy specimen is consistent with bowel infarction secondary to ileocolic intussusception with acute suppurative appendicitis.

POS74

INFLAMMATORY PSEUDOTUMOR IN THE PARAPHARYNGEAL SPACE – A DIAGNOSIS OF EXCLUSION

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***Keyword**: Inflammatory pseudotumor, parapharyngeal space*

Abstract:
Inflammatory pseudotumor in the parapharyngeal space is uncommon. We reported a case of parapharyngeal space inflammatory pseudotumor in a 19 years old female patient. She initially presented with persistent block right ear for 1 month without constitutional symptoms. Nasoendoscopic examination revealed fullness in the right torus tubarius and Fossa of Rossenmuller with intact overlying mucosa. Her blood investigations only showed microcystic hypochromic anaemia without derangement of autoimmune markers. Radiologically, her MRI showed an irregular right parapharyngeal mass with aggressive features. HPE revealed the diagnosis of inflammatory pseudotumor. She underwent a course of steroids with good response.

POS75

AN UNEXPECTED CAUSE OF BLOOD PRESSURE DISCREPANCY:

SUBCLAVIAN STEAL PHENOMENON SECONDARY TO A RARE VARIANT OF VASCULAR ANATOMY

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***Keyword**: Blood pressure discrepancy, aberrant left subclavian artery, right-sided aortic arch, subclavian steal phenomenon*

Right-sided aortic arch (RAA) is a rare anomaly with a prevalence of 0.1%, commonly associated with a Kommerell diverticulum (39.5%) or an isolated aberrant left subclavian artery (ALSA) (0.8%). We report a case of 72 year old gentlmen with discrepancy blood pressure (BP) reading between both arms greater than 20 mmHg. Chest radiograph showed apparent mediastinal widening. CT angiography (CTA) thorax was requested urgently to rule out aortic dissection. The CTA revealed a RAA with isolated ALSA, in which the distal ALSA was supplied by the retrograde flow of the ipsilateral vertebral artery. The opacified left ALSA was smaller in calibre likely resulting in the BP discrepancy. In conclusion, RAA with ALSA causing subclavian steal phenomenon (SSP) is a rare occurrence. Knowledge of variants of aortic arch branching patterns is helpful in identifying this anomaly. This case also highlights the possible differential diagnosis in a patient presenting with BP discrepancy.

POS76

METASTATIC THYROID CARCINOMA MIMICKING BRANCHIAL CLEFT CYST

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***Keyword**: branchial cleft cyst, cystic metastasis, thyroid carcinoma*

Branchial cleft cyst is a common cystic neck mass in younger age group, whereas metastatic lymph nodes is more common in older age group. These diagnoses are usually recognized radiologically by their characteristic finding, with branchial cleft cyst being more homogeneous, thin-walled with absence of surrounding infiltration. However, a proportion of patients with metastatic lymph node can have benign characteristics which may cause misdiagnosis. We report a middle-aged man who presented with cystic lateral neck mass. CT shows benign-looking lesion which was reported as branchial cleft cyst. Pathological examination confirmed as papillary carcinoma. Subsequent ultrasound showed the presence of thyroid lesion with fine-needle aspiration thereafter revealed papillary carcinoma. This case shows that excluding metastatic lymph nodes based on imaging alone is not recommended. Clinical history and age of the patient may help in suspecting metastatic lymph nodes in patients with benign-looking cervical neck mass, thus prompting to find primary malignancy thoroughly through imaging or pathological examination.

POS77

COMPUTED TOMOGRAPHY OF COMPLICATED CHOLECYSTITIS

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Keywords: Cholecystitis, CT scan , emergency

Background :
Acute cholecystitis (AC) is a common cause of abdominal pain. Unless treated promptly, patients with acute cholecystitis may develop complications such as gangrenous,perforated, or emphysematous cholecystitis.Imaging studies are helpful in the timely detection of complications associated with AC.

Methodology :
We reviewed in this pictorial essay the imaging finding of complicated acute cholecystitis and emphasized the utility of CT scan in identifying them.

Results :
Although ultrasonography is typically the initial diagnostic examination in patients with suspected AC, computed tomography is commonly performed to identify complications. Worrisome imaging findings for complicated cholecystitis included gallbladder wall abnormalities (asymmetric wall thickening, abnormal gas, loss of and contrast enhancement), intraluminal findings (sloughed mucosa, hemorrhage, abnormal gas),and pericholecystic changes (echogenic fat, pericholecystic fluid, abscess formation).

Conclusion :
An awareness of the computed tomography appearances can be helpful in the diagnosis of complicated cholecystitis ; Thus interpreting radiologists should be familiar with the spectrum of it’s CT findings.

POS78

A RASE CASE OF MELIOIDOTIC CALCANEAL OSTEOMYELITIS: MRI INTERESTING ILLUSTRATIVE FINDINGS.

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Keywords: *Cholecystitis, CT scan , emergency*

ABSTRACT:

Melioidosis is a gram-negative saprophytic bacterial infection occurring in tropical regions of the world. In recent years, it had been reported known to be predominant in South East Asian countries, South Asia, Northern Australia as well as China. The disease can affect any organ in causing multiple abscesses or cavity in internal organs. Diabetes is the most common predisposing factor. Melioidosis is associated with a high rate of death due to the early spread of infection to the blood causing septicaemia to the patient. This patient is a 58 years old female, with underlying diabetes mellitus and bronchial asthma. Presented with history of right ankle pain at medial side for 1 week. On examination tender, warm erythematous on bilateral malleolus extending to dorsum of foot. Foot Radiograph was unremarkable. Ultrasound shows right ankle cellulitis with no sonographic evidence of collection. MRI demonstrate right ankle and foot cellulitis, myositis with multifocal rim enhancing collection and multifocal intramedullary lesions within calcaneus consistent with osteomyelitis. Then, wound debridement and ankle washout done. Blood culture and sensitivity shows Burkholderia Cepacia and Burkholderia Pseudomallei. She completed IV ceftazidime for 6 weeks and was discharged with T. Augmentin for 6 months. In this case, we describe the importance of MRI in detecting early changes of melioidotic calcaneal osteomyelitis which are not detected using conventional radiograph. MRI is useful in detecting early changes of soft tissue changes as well as bone lesions. Here we illustrate the different modality findings, emphasising on MRI findings with regards to Melioidotic Calcaneal Osteomyelitis.

POS79

OLFACTORY SCHWANNOMA MASQUERADING AS ESTHESIONEUROBLASTOMA

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Keywords: *olfactory nerve, schwannoma, esthesioneuroblastoma, mri, dumbbell lesion*

Our case was a 27-year-old man presenting with a nine-month history of anosmia and no other significant history or finding on the physical examination. MRI of the brain showed a large lobulated and dumb-bell shaped heterogeneously enhancing mass expanding the right nasoethmoidal region with intracranial extension via the right cribriform plate. Foci of SWI dropout were also seen within it along with some cystic change. Based on the clinical and imaging findings, the initial impression was esthesioneuroblastoma. After gross total surgical resection, pathologic microscopic examination showed a spindle cell lesion arranged in hypo and hypercellular areas in a collagenous background consistent with schwannoma with degenerative change. The most common diagnoses of extra-axial enhancing mass lesions of the anterior fossa and olfactory region include meningioma, adenoid cystic tumors or esthesioneuroblastoma. Although a rarity since no Scwann cell is present around the olfactory bulb, olfactory schwannoma should be considered in the differential. Figure 1: A & B) T2 axial and sagittal sequences showing a heterogeneously hyperintense T2 mass in the sinonasal region with extra-axial intracranial extension (arrows). Low-insensity foci were seen with which were attributable to calcifications or foci of hemorrhage.C & D) The mass shows intense enhancement with areas of cystic change (arrowhead in C). Dumb-bell shape of the mass was thought to be characteristic of esthesioneuroblastoma.

POS80

A RADIOLOGIST APPROACH TO ACUTE PARENCHYMAL HEMORRHAGES: HOW TO INTERCEPT SHROUDED DRAGONS

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Keywords: *hemorrhage ,CT,MRI,DSA,CTA*

Background
Primary intracranial hemorrhage (ICH) or hemorrhagic strokes etiology is unknown in the initial stage. The location, size and morphology are three important factors when reading the scan of intracranial hemorrhage.Clinical ICH score correlates with a 30 day mortality which takes into consideration admission Glasgow coma scale,>80 years old, ICH volume, infratentorial and presence of intraventricular hemorrhage. Management includes finding the cause of hemorrhage or symptomatic management.

Introduction:
Acute intracranial bleeding can be due to a myriad of reasons. Most of these are obvious and can be easily picked on imaging. Sometimes, however, it may be challenging to determine the precise reason for these bleeds on initial examination. In such cases, it is crucial to do a thorough workup of the patient so as not to miss any occult lesion. While intracranial hemorrhage prompts the surgeon to opt for immediate intervention, it is pertinent to find the cause of hemorrhage before running any intervention, as the hemorrhage could be associated with an underlying occult lesion. Blind mediation in such cases can have catastrophic results for the patient.In this abstract we'll be highlighting seven different cases presenting with intracranial hemorrhage all with occult causes that resulted in bleeding. This abstract signifies the importance of detailed investigation/imaging to reveal the cause of bleed before proceeding towards any kind of intervention.

Methodology
7 patients diagnosed with ICH during 1st January 2016 and 31st December 2017 presenting at Aga Khan University Hospital, Karachi Pakistan, were identified and recruited for this study.

Results:
The first case is of a middle aged lady, who was a known case of hypertension, presented with right sided headache and left sided weakness. On initial MRI, she was diagnosed with a large intraparenchymal hematoma in the right frontal lobe. CT angiography done at that time did not show any aneurysm or AV malformation. Following this, she underwent digital subtraction angiography (DSA) which showed an abnormal blush with neovascularization in the right cerebral hemisphere, suspicious of tumor vascularity. A few days later she presented with headache and periorbital pain with drop in GCS. She underwent CT head which revealed development of an acute intraparenchymal hemorrhage in interval on a background of previously resolving haematoma in right frontal lobe. The diagnosis of a possible intra-tumoral rebleed was made. The patient then underwent right frontotemporal craniotomy and debulking of tumor with clot evacuation. She was found to have grade IV glioblastoma on histopathology.The second case is of a 24-year-old lady who presented with complaints of left-sided facial palsy and body weakness for three months with sudden onset left sided hemiparesis for one day. On brain MRI, she was found to have chronic/resolving right basal ganglia hemorrhage with intraventricular extension suspicious for an underlying neoplastic lesion. Subsequent DSA showed a hematoma, raising the possibility of an occult lesion with no intracranial aneurysm or AV malformation. Neuronavigation-guided right fronto-temporal craniotomy and debulking of lesion was carried out. On histopathology, the patient was found to have grade I pilocytic astrocytoma.The third case is of a 72-year-old gentleman who presented to the ER with complaints of generalized tonic clonic fits and

altered level of consciousness. He also gave a history of gait problems and dementia for the past four years. The patient underwent CT scan of the brain which showed left temporal lobe contusion with minimal surrounding subarachnoid hemorrhage. It also showed subtle gyral hyperdensity in the right parietal region and along the margins of the right lateral ventricle. On subsequent MRI, the patient was found to have irregularity along the transverse sinuses with multiple serpiginous flow voids in bilateral occipital regions, along the transverse sinuses and occipital bone. Findings were found to be highly suspicious for dural arteriovenous fistula. In the fourth case of this series, a 45-year-old lady presented with sudden onset drowsiness and acute loss of consciousness. Her CT brain showed left frontal intraparenchymal hemorrhage with intraventricular extension and subarachnoid hemorrhage. Her CT angiography showed a narrow neck aneurysm at the bifurcation of the left internal carotid artery. On subsequent DSA, successful coiling of left ICA terminus aneurysm was performed with good aneurysm packing.In the fifth case, a 46-year-old lady presented with complaints of seizures followed by drowsiness. Her initial workup was done with CT brain which showed a small right temporal lobe hemorrhage. She was also found to have diffuse cerebral oedema along with hydrocephalus. She then underwent an MRI brain which redemonstrated right temporal lobe hemorrhage. Marked intracranial atherosclerotic disease with ectasia was also seen. Subsequent CTA revealed an abnormal bunch of vessels in the right posterior temporal lobe, representative of a small vascular malformation. Further imaging with DSA showed a pial AVM with nidus in the parietotemporal region supplied by feeders from the temporal branch of right MCA and posterior division of right middle meningeal artery, seen draining into the confluence of sinuses via a single tortuous vein. The sixth case is of a 56-year-old gentleman, who was a known case of small cell carcinoma of lung, presenting with focal seizures for three days. On CT brain performed at the time of presentation to the hospital, the patient was found to have multifocal peripherally enhancing lesions involving the grey-white matter junction of the brain likely representing metastasis. On subsequent MRI, hemorrhagic metastasis of varying sizes with significant perilesional oedema and some with central areas of necrosis were seen both in infratentorial and supratentorial areas. He was diagnosed with small cell carcinoma with hemorrhagic metastasis to the brain.The final case in this case series is of a 56-year-old gentleman who presented with left sided weakness. On initial CT brain, right frontoparietal intraparenchymal bleed was seen causing mass effect and midline shift with intraventricular extension. On subsequent MRI, an abnormal signal intensity area was seen at the site of prior hemorrhage in the right frontal region. This showed dense internal hemosiderin staining and rim-like peripheral hemosiderin deposition. A scar-like area of enhancement was seen in the center of the previously mentioned abnormal signal intensity area. These findings were found to be atypical for a bland hematoma with differential possibility of a large cavernoma and suspicion of a low grade neoplasm.

Conclusion

In the seven cases that we have put forth, all presenting with intracranial hemorrhage, each one was found to have a different cause which was initially difficult to diagnose. In conclusion, we would once again like to highlight the importance of proper imaging with the appropriate imaging modality to reach the root cause of the bleed. Only then should we proceed for any kind of intervention.

POS81

PRIMARY RETROPERITONEAL SQUAMOUS CELL CARCINOMA

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***Keywords**: Retroperitoneal Tumour, Primary Retroperitoneal Squamous Cell Carcinoma*

Abstract:
A retroperitoneal carcinoma is an exceedingly rare occurrence of the primary malignancy. The prevalence of malignant retroperitoneal tumour also increases with patient age[1,4]. Here we reporta case of retroperitoneal squamous cell carcinoma which initially presented with loin pain and clinical features of pyelonephritis. Initially, ultrasound KUB and CTU performed showed mild left hydronephrosis with a left ureteric lesion. Repeated Multiphase CT Renal in 2 months apart showed progressively enlarged left retroperitoneal mass and worsening left obstructive uropathy.The tumour also extends to the ipsilateral psoas muscle, encasing the inferior mesenteric artery (IMA) and partially encasing abdominal aorta (AA). She was then referred to the urology team and subsequently joint managed with the oncologist and vascular surgeon for further management.

POS82

CYSTIC HAEMORRHAGIC LIVER METASTASIS MIMICKING LIVER ABSCESS: A CASE REPORT

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***Keywords**: Cystic hemorrhagic liver metastasis, Peliosis hepatis.*

Abstract:

Introduction:
Hepatic lesions with multilocular cystic appearance are frequently encountered in routine radiological practices. A cystic lesion is a well defined lesion with predominant near water attenuation (0-30HU).Generally the cystic component may be secondary to liquid substances, intratumoural necrosis and tissues of high water content. The imaging pattern may be observed in wide spectrum of common and uncommon neoplastic and non- neoplastic entities. A cystic haemorrhagic liver metastasis may mimic a liver abscess is extremely rare and it may be due to its complex symptoms or due to indeterminate imaging features. Here, we described a case of cystic haemorrhagic liver metastasis with a differential diagnosis of peliosis hepatis which was mimicking a liver abscess.

Report:
A 41 years old female with underlying diabetes mellitus presented with presented to our healthcare centre on the 15th June 2022 with complaint of feeling unwell since 28th April 2022 and with intermittent episodes of chills and rigors. Symptoms were gradually worsening prior to the presentation to the hospital and throughout in hospital, patient was not improving despite on multiple course of antibiotics and blood transfusion.Initial ultrasound on showed large right liver lobe abscess. Ultrasound guided drainage was performed showed partially liquified heterogenous hypoechoic collection occupying right liver lobe with fresh blood aspirated . At this point, we were unable to rule out ruptured tumour. Therefore we proceeded with CT Liver 4 phase and it showed features favouring multiloculated right liver lobe abscess with mass effect and right hepatic vein thrombosis. Features are less likely to represent tumour. Ultrasound guided drainage was again attempted and it showed multiple lobulated liver collection occupying almost entire right liver lobe. Pigtail catheter was inserted and aspirated 200cc of old blood.Subsequently, CTA Abdomen showed collectively smaller right liver multiloculated abscess with no active bleed and smaller right hepatic vein/ IVC thrombosis.Two weeks later, ultrasound was repeated and it showed no significant change in size of right liver lobe partially liquefied abscess. We proceeded with MRI Liver Primovist and it showed multifocal enhancing hepatic lesions with some of these lesions showed restricted diffusion. Largest at the right liver lobe with haemorrhagic component. Differentials diagnosis includes peliosis hepatis and hepatic metastases.Liver biopsy was performed under IR , HPE showed possible primary site metastasis favours female genital tract.

Conclusion:
In presence of atypical clinical symptoms and non-specific radiological features , the diagnosis of a cystic haemorrhagic liver metastasis or peliosis hepatis and its differentiation from hepatic abscess can be still challenging, especially in patient with unknown malignancy. Percutaneous biopsy is essential for definitive diagnosis.

POS83

EVALUATING ROLE OF HIGH-RESOLUTION ULTRASONOGRAPHY IN PATIENTS WITH LEPROSY

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Keywords: *patients, nerves, diagnosis, leprosy, abscess, disease, findings, imaging, limb, therapy*

Background: Though prevalence of leprosy in developing world has reduced yet it is dreaded disease that escape early detection. Leprosy is associated with asymptomatic thickening of nerves, early in lepromatous and in tuberculoid type, neural abscess formation. Late stages are associated with deformities. Hence, the aim of the present study is to evaluate the upper limb neural thickening/abscess in leprosy patients.

Methodology: Sixteen patients underwent high-resolution ultrasonography (USG) followed by pathological confirmation for leprosy. All the radiological findings were recorded and compared with clinico-pathological findings.

Results: In all sixteen patients, the disease was diagnosed accurately with radiological investigations using pathological findings and response to anti-leprosy treatment as gold standard. In 12 out of 16 cases, near-symmetric involvement of median & ulnar nerves was noted while in four neural abscesses in ulnar nerve was noted.

Conclusions: Prior to imaging era, the correct diagnosis of leprosy was often based on clinical and pathological findings, hence the diagnosis was often delayed. With the advent of HRUS, it is now possible to image and evaluate the nerves with nerves of upper limb being most amenable. The characteristic signs of leprosy on imaging are thickening of nerves especially in lepromatous leprosy while in tuberculoid leprosy patients may even develop neural abscess. Hence, HRUS can be used as a screening imaging modality in patients suspected with leprosy for early diagnosis & institution of therapy to avoid late complications especially in paucibacillary disease.