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RADIOFREQUENCY ABLATION FOR TREATMENT OF OSTEOID OSTEOMA

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Introduction: Osteoid osteoma (OO) is a benign bone neoplasm with an incidence of 2-3% among all primary bone tumors. It is characterized by prolonged pain that typically exacerbates at night with significant reduction in daily activities and quality of life. Percutaneous ablation techniques have emerged as alternative treatment options which is safe and effective with a low complication and recurrence rate.

Report: A 9-year-old girl presented with pain over the right thigh for 1 month. The pain was dull aching in nature, aggravated by activities like running and cycling and relieved with oral medication. No history of fever or trauma. Local examination revealed tenderness at the iliopsoas tendon insertion. MRI of the right hip joint showed an expansile intramedullary lesion at the femoral neck with adjacent cortical sclerosis and a central nidus. A diagnosis of OO was made and subjected for CT guided radiofrequency ablation (RFA). There was significant improvement in symptoms post RFA. No weakness or numbness demonstrated. Patient had satisfactory pain control post intervention.

Conclusion: RFA has emerged as a minimally invasive treatment option in patients unwilling for complex surgical intervention. This approach has shown a positive response to pain control in managing cases of OO.

EFFECTIVENESS OF CONVENTIONAL TRANSARTERIAL CHEMO- EMBOLISATION (cTACE) IN COMPARISON TO DRUG-ELUTING BEADS TRANSARTERIAL CHEMO-EMBOLISATION (DEB-TACE) FOR TREATMENT OF HEPATOCELLULAR CARCINOMA IN HOSPITAL USM, KELANTAN

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Introduction: Transarterial chemoembolization (TACE) is the standard treatment for stage B hepatocellular carcinoma (HCC). Currently, there are two available TACE techniques used – conventional TACE (cTACE) and drug-eluting beads TACE (DEB-TACE). Theoretically, DEB-TACE should have a better tumour response as compared to cTACE. The purpose of this study was to compare the treatment response and the side effects of cTACE and DEB-TACE.

Methods: 161 patients who underwent TACE between January 2012 until April 2022 were included in this retrospective study [cTACE (n = 106) and DEB-TACE (n = 55)] which was conducted in Hospital Universiti Sains Malaysia, Kubang Kerian, Kelantan, Malaysia. Pre- and post-TACE imaging were reviewed and the viable tumour was measured based on mRECIST criteria and assigned to its treatment response categories. The images were further evaluated to identify for side effects related to the procedure in both groups.

Results: 12 patients were categorized under complete response [8 (7.5 %) in cTACE; 4 (7.3 %) in DEB-TACE], 82 patients under partial treatment response [51 (48.1. %) in cTACE; 31 (56.4 %) in DEB-TACE], 21 patients under stable disease [12 (11.3 %) in cTACE; 9 (16.4 %) in DEB-TACE], and 46 patients under progressive disease [35 (33.0 %) in cTACE; 11 (20.0 %) in DEB-TACE]. Statistically, there is no significant difference in tumour response between cTACE and DEB-TACE (p-value of 0.342). A higher percentage of progressive disease was observed in cTACE group as compared to DEB-TACE group. Significant difference in local side effects (dilated bile ducts, portal vein thrombosis, cholecystitis) were observed (p-value of 0.03) as more local side effects were documented in DEB-TACE group. No severe adverse events or procedure-related mortality were observed in both groups.

Conclusion: No significant difference in the effectiveness of cTACE and DEB-TACE in treating HCC patients in terms of tumour response with more local side effects were observed in DEB-TACE group.

ERGONOMICS RISK ASSESSMENT OF MUSCULOSKELETAL DISORDER (MSD) AMONG MEDICAL OFFICERS DURING ULTRASOUND-GUIDED FEMORAL PUNCTURE USING STIMULATED PHANTOM

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Introduction: Unfavorable arrangement of the imaging apparatus, like operating table height, leads to musculoskeletal disorder (MSD). Our study aims to evaluate the ergonomic risk assessment of MSD among medical officers during ultrasound-guided femoral puncture with different table heights using Rapid Entire Body Assessment (REBA), as well as to compare the single-pass puncture success rate and time of successful femoral puncture.

Method: Single group, open-labeled, stimulated phantom experimental study performed by voluntary participants at Hospital Universiti Sains Malaysia. Each participant performs ultrasound-guided femoral puncture on a phantom over an adjustable table in three table heights, which are factors 0.7, 0.9, and 1.0 of elbow heights. Time and success rate single- pass femoral puncture are recorded. Worst body posture is assessed by using the REBA assessment worksheet.

Result: Table height with the highest REBA score is at factor 0.7 of elbow height, 4.54 with a standard deviation (SD) of 1.885, while factors 0.9 and 1.0 recorded 3.54 (1.343) and 3.20 (0.679) respectively. There are significant changes in REBA score with different table heights, with post hoc analysis showing significant differences in REBA score table heights between factor 1.0 and 0.7 of elbow height (MD= 1.341; 95% CI: 2.09, 0.60; p <0.001), as well as between factor 0.9 and 0.7 of elbow height (MD= 1.000; 95% CI: 1.65, 0.35; p =0.001). No significant changes in REBA score between table heights factor 1.0 and 0.9 of elbow height (MD= 0.341; 95% CI: - 0.81, 0.13; p = 0.225). There is no significant difference in the success rate of the single-pass femoral puncture (p-value 0.247) or time of successful femoral puncture in different table heights (p-value 0.348).

Conclusion: Table height of factor 1.0 and 0.9 of elbow height is the recommended table height to be used by the interventionist performing ultrasound-guided femoral puncture as it reduces the risk of MSD.

TRANSCATHETER ARTERIAL EMBOLIZATION FOR WUNDERLICH SYNDROME WITH HYPOVOLAEMIC SHOCK

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Introduction: Wunderlich Syndrome (WS) is a rare condition in which spontaneous perirenal and subcapsular haemorrhage occurs. Tumour bleeding is the most common cause of this syndrome, followed by vascular disorders and renal cystic diseases. It is characterized by Lenk's triad, namely, acute flank pain, flank mass and hypovolemic shock.

Report: We described a case of spontaneous rupture of acquired renal cystic lesions in a 48-year-old gentleman with underlying end-stage renal failure. He was diagnosed 6 months earlier with bilateral Bosniak category IV lesions and was planned for elective nephrectomy. However, during his routine dialysis, he developed severe abdominal pain, thereafter complicated with hypovolemic shock requiring inotropes support. Contrasted CT abdomen showed active bleeding with large left perinephric and retroperitoneal hematoma. An angiogram showed active bleeding from the anterior and posterior left inferior renal artery, and these offending vessels were subsequently successfully embolized. Elective bilateral nephrectomy was done after 5 months for Bosniak category IV lesions, and the left cystic lesions were histopathologically proven to be benign acquired renal cystic lesions. However, the right renal cystic lesions were positive for renal cell carcinoma.

Conclusions: Urgent transcatheter arterial embolization is an effective alternative to control WS with hypovolemic shock secondary to acquired renal cystic disease.

SINGLE-CENTER EXPERIENCE WITH CT-GUIDED BIOPSY FOR HISTOPATHOLOGICAL DIAGNOSIS OF ANTERIOR MEDIASTINAL MASSES: A CASE SERIES

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CT-guided biopsy is a minimally invasive and effective method for diagnosing anterior mediastinal masses, though it presents significant technical and diagnostic challenges. We present a case series of five patients from our center highlighting the complexities involved in planning and performing these biopsies, especially given the proximity of the masses to vital structures such as the heart, great vessels, and lungs. Meticulous pre-procedural planning is critical to ensuring accurate tissue sampling while minimizing the risk of complications.

For general radiologists, anterior mediastinal masses are diagnostically challenging due to their varied etiologies, including thymoma, lymphoma, and primary tumour. Imaging alone often falls short of differentiating between these pathologies, making histopathological examination (HPE) essential for definitive diagnosis. In our experience, CT-guided biopsy provided sufficient tissue for HPE in all cases, enabling accurate diagnosis and guiding appropriate clinical management.

This series emphasizes the importance of careful biopsy planning in the safe and effective use of CT-guided biopsy for anterior mediastinal masses. It also highlights the diagnostic challenges faced by general radiologists and supports the use of biopsy as a first-line tool for accurate histopathological diagnosis. Further research is encouraged to optimize biopsy techniques and improve diagnostic accuracy in this complex anatomical region.

SERIAL CAVOPLASTY FOR LATE IVC STENOSIS POST LIVER TRANSPLANT IN A PAEDIATRIC PATIENT: SELAYANG EXPERIENCE

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Introduction: Liver transplantation is the treatment of choice for paediatric patients suffering with complications from end-stage liver disease. Although vascular complications following orthotopic liver transplantation seldom occur, they are the most feared complications. The overall incidence of vascular complications in adults and children varies widely among transplant centres worldwide. Stenosis of venous anastomotic connections after liver transplantation is relatively rare, with a reported incidence of 1%-5%.

Results: NAD.MA is a 4year 5month old girl with biliary atresia who underwent Kasai procedure at day 52 of life and subsequently cadaveric liver transplant at the age of 3. She presented 8 months after initial hospital discharge with elevated liver enzymes and moderate ascites. Initial IVC venography demonstrated a short segment stenosis seen at IVC at the anastomotic site. A total of 3 serial IVC venography and balloon venoplasty was done.

Conclusion: Even though stenting can achieve immediate and long-term patency as opposed to the limited role of cavoplasty. In our sparse experience managing a preschooler we couldn't be putting the recipient at significant risk for stent-related morbidities especially risk of stent migration as child is still growing.

UNINTENDED COIL RELEASE DUE TO FRACTURE OF DELIVERY WIRE DURING ARDUOUS RIMA PSEUDOANEURYSM EMBOLIZATION

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Introduction: Iatrogenic pseudoaneurysms (PAs) are commonly encountered vascular abnormalities. Preprocedural vascular imaging is crucial for diagnosis and treatment planning. Coil embolization is a preferred option for deep PAs such as those in the internal mammary artery (IMA).

Report: This case involves an elderly renal failure patient admitted for overload symptoms, who developed a right IMA (RIMA) pseudoaneurysm following hemodialysis catheter insertion. The PA neck was only 3mm from the RIMA ostium, leaving a short landing zone. Due to anatomical challenges, a right brachial artery approach was chosen after the femoral approach failed. During multiple attempts to deploy Concerto Detachable Coil, the delivery wire fractured, leading to inadvertent coil release. Fortunately, the coil migrated to the right brachial artery and was successfully retrieved by snaring. Doppler ultrasonography and CTA are valuable for pre-procedural planning. Intra-procedural technical approach must remain flexible following angiographic assessment. The Concerto Detachable Coil was selected given its versatility in managing difficult PA morphology in this case. However, the operator must remain vigilant for potential complications, enabling prompt intervention when necessary.

Conclusion: Preprocedural imaging assessment is paramount in determining the best treatment. Regardless of device versatility, vigilant intra-procedure handling is always required, particularly in an anatomically challenging case.

PRECISION IN PEDIATRIC INTERVENTION: STATE-OF-THE-ART USE OF INTRAVASCULAR ULTRASOUND (IVUS) IN PAEDIATRIC RENAL ANGIOPLASTY - A CASE OF RESOLVED YOUNG HYPERTENSION

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A 5-year-old boy was incidentally diagnosed with hypertension during hospitalization for acute tonsillopharyngitis. Diagnostic workup revealed elevated renin and low aldosterone levels, suggesting renal artery stenosis. Imaging confirmed right renal artery stenosis with impaired function of the right kidney. For this pediatric patient, renal angioplasty was performed with the addition of intravascular ultrasound (IVUS) for precise assessment and measurement of the stenosis. The angioplasty, conducted using a balloon catheter, successfully resolved the stenosis, as confirmed by post-procedure IVUS. Antihypertensive medications were withheld following the procedure. A follow-up DMSA scan conducted three months later showed significant improvement in the differential function of the right kidney. This case underscores the value of combining renal angioplasty with IVUS in managing pediatric renal artery stenosis, providing precise measurement that also ease future monitoring.

A RARE ENTITY OF POST LIVER TRANSPLANT COMPLICATION IN PAEDIATRIC PATIENT

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10-month-old boy done living donor liver transplant for autoimmune hepatitis type 2. Post operative day 5 patient develop ascites and pleural effusion which is likely due chyle leakMultiple interventions by primary team done including video-assisted thoracoscopic surgery (VATS), diagnostic right thoracoscopy, and infiltration with indocyanine green to trace the source of the leak, yielded no source of chyle leak. Conventional lymphangiography via bilateral inguinal lymph node and hepatic lymphangiogram were performed. No demonstrable leak seen.In view worsening pleural effusion and ascites, two weeks later another hepatic lymphangiogram with lipiodol and blue dye was performed. No leak seen. Attempted to cannulate the mesenteric lymph nodes, however unsuccessful. A hepatic venogram was done to exclude hepatic venous outflow obstruction. As all imaging modality failed to conclude the site of leakage, tensor fascia lata allograft was place at the bare part of the liver as a measure to control the condition. Both pleural and ascites was relieved by ultrasound guided pigtail drainage over a period of 3 weeks. In view refractory chylous ascites and chylothorax, a liver biopsy was done to exclude graft rejection. HPE is pending at the time of this.