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SKULL BASE OSTEOMYELITIS MIMICKING MALIGNANCY

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ABSTRACT

Introduction:

Skull base osteomyelitis (SBO) is an uncommon but potentially life-threatening infection that may mimic malignancy on imaging.

Case Report:

We report a 64-year-old woman with poorly controlled diabetes mellitus who presented with a three-week history of worsening headache, nausea and vomiting, followed by two weeks of diplopia and right eye deviation. Examination showed right abducens nerve palsy, which progressed to bilateral involvement with associated hypoglossal nerve palsy. Computed tomography (CT) of the brain demonstrated bilateral corona radiata infarctions without a space-occupying lesion. Owing to progressive cranial neuropathies, magnetic resonance imaging (MRI) revealed an ill-defined right nasopharyngeal lesion, extending into the skull base (clivus, petrous apex, and occipital condyle) and cavernous sinus with associated thrombosis, raising concern for nasopharyngeal carcinoma.

Conclusion:

Nasoendoscopy and repeated biopsies demonstrated reactive lymphoid hyperplasia without evidence of malignancy. Following antibiotic therapy, interval MRI showed reduction in lesion size and extent, supporting the diagnosis of SBO.

Keywords: Skull base osteomyelitis, osteomyelitis, nasopharyngeal carcinoma.

GROUND-GLASS OSSEOUS CHANGES: AN ATYPICAL PRESENTATION OF SINONASAL MANIFESTATION OF GRANULOMATOSIS WITH POLYANGIITIS

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ABSTRACT

Introduction:

Granulomatosis with polyangiitis (GPA) is a necrotizing vasculitis that primarily involves the respiratory tract and kidneys. Osseous involvement is uncommon and may mimic benign fibro-osseous lesions such as fibrous dysplasia on imaging.

Case Presentation:

We report a case of a 41-year-old man presented with 2 months history of progressive left periorbital swelling, pain, redness and blurring of vision. CT and MRI demonstrated extensive soft tissue involvement of the left intra- and extraconal spaces, right extraconal space, bilateral masticator, bilateral retro maxillary and left buccal spaces. Adjacent craniofacial bones showed thickened sclerosis and expansile ground-glass changes, closely resembling fibrous dysplasia.

Conclusion:

Imaging features of GPA may overlap with other entities, posing a diagnostic challenge. Therefore, recognition of typical and atypical imaging features with clinical history and laboratory findings correlation are essential to avoid misdiagnosis and ensure timely treatment.

Keywords: ground glass bony changes, fibrous dysplasia mimic, sinonasal presentation of GPA

A BRAIN RUNNING OUT OF ENERGY: A CASE OF MITOCHONDRIAL LEUKODYSTROPHY

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ABSTRACT

Introduction:

Mitochondrial leukodystrophies are rare inherited metabolic disorders posing diagnostic challenges due to overlapping radiological features with other leukoencephalopathies.

Case Presentation:

We report a 22-month-old boy with failure to thrive and motor regression, markedly exacerbated following an acute respiratory syncytial virus (RSV) infection. Brain magnetic resonance imaging (MRI) revealed diffuse, symmetric T2 and FLAIR hyperintensities involving the periventricular and deep white matter, with relative sparing of the subcortical U-fibers. Magnetic resonance spectroscopy (MRS) demonstrated a distinct lactate peak within the affected regions, acting as a key marker of impaired oxidative phosphorylation and anaerobic metabolism. Subsequent testing confirmed a pathogenic NDUF4A gene mutation, establishing mitochondrial complex IV deficiency.

Conclusion:

This case highlights that combining structural MRI pattern recognition with MRS metabolic profiling is essential for identifying elusive mitochondrial leukodystrophies, facilitating targeted genetic diagnosis, and guiding clinical management following infection-induced neurological deterioration.

Keywords: Mitochondrial leukodystrophy, Magnetic resonance spectroscopy, NDUF4A mutation, inherited metabolic disorder, Pediatric neuroimaging

OPTIMISING IMAGING UTILISATION: APPROPRIATENESS OF CT AND MRI IN SELECTED PUBLIC HOSPITALS IN MALAYSIA

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ABSTRACT

Background:

Access to high-cost imaging such as computed tomography (CT) and magnetic resonance imaging (MRI) remains limited, and local evidence on appropriateness rates (AR) is scarce. This study aimed to determine the AR of CT/MRI utilisation in Malaysian public hospitals and its associated factors.

Methodology:

A retrospective cross-sectional study was conducted using CT/MRI request forms from the second half of 2024. A representative sample was obtained from four purposively selected tertiary public hospitals, covering five disciplines: internal medicine, general surgery, orthopaedics, gynaecology, and paediatrics. Imaging appropriateness was assessed by a two-tier expert panel of radiologists and clinicians, with indeterminate cases escalated. Appropriateness was defined based on national clinical practice guidelines, considering indication, anatomical site, contrast use, and timing. Associations were analysed using chi-square or Fisher's exact test. Incomplete forms were excluded.

Results:

Of 757 cases reviewed, 8.7% were excluded. AR was 87.1% (332/381) for CT and 85.8% (266/310) for MRI. CT appropriateness was significantly associated with test location, discipline, and anatomical area—higher in in-house scans, medical disciplines, and chest imaging. No significant associations were observed for MRI. Over half of inappropriate cases were due to suboptimal test selection and inappropriate indications.

Conclusion:

ARs were high and comparable to international benchmarks. Variation in CT appropriateness suggests opportunities for targeted, discipline-specific interventions. Strengthening guideline adherence, referral vetting, and clinician–radiologist collaboration may further reduce inappropriate imaging.

Keywords: appropriate imaging, CT, MRI

COMPUTED TOMOGRAPHY FINDINGS OF TRANSVERSE COLON ADENOCARCINOMA MASQUERADING AS ADULT COLOCOLIC INTUSSUSCEPTION: A CASE REPORT

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ABSTRACT

Introduction:

Adult intussusception is rare and, unlike in children, is predominantly caused by an underlying pathological lead point such as malignancy, requiring thorough investigation.

Case Presentation:

A 40-year-old male presented with a 6-month history of intermittent abdominal pain, bloating, constipation, and rectal bleeding. Physical examination revealed a palpable epigastric mass with reduced bowel sounds. Contrast-enhanced computed tomography (CT) of the abdomen demonstrated a colocolic intussusception at the transverse colon, with characteristic “sausage sign” on axial views and “bull’s eye” appearance on sagittal views. An intraluminal enhancing mass with irregular margins extending into the muscularis propria without serosal invasion was identified, along with peritumoral lymphadenopathy. Colonoscopy confirmed an obstructing, non-bleeding necrotic mass. Histopathological analysis of biopsy specimens revealed low-grade adenocarcinoma.

Conclusion:

This case highlights the importance of CT imaging in diagnosing adult intussusception and identifying its underlying cause, with surgical resection planned as definitive management.

Keywords: Intussusception, colon cancer, adenocarcinoma, colocolic, computed tomography

FROM ANATOMY TO CLINICAL IMPACT : EARLY CTA RECOGNITION OF RARE SYSTEMIC-TO-PULMONARY SHUNTS

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ABSTRACT

Introduction:

Early diagnosis of congenital systemic to pulmonary arterial shunt is essential to prevent irreversible pulmonary hypertension. These conditions present with vague respiratory symptoms and can quickly deteriorate into pulmonary over-circulation.

Case Presentation:

We discuss a series of three infants who did CT angiography (CTA), after echocardiogram suggested abnormal vascular connections. Two presented with an anomalous right pulmonary artery (AORPA) arising from the aortic arch; one of these cases involved right ventricular strain, absence of a left upper pulmonary vein, and tracheal constriction, while the other occurred alongside a patent ductus arteriosus. The third infant had Type II Aortopulmonary Window, enlarged pulmonary arteries and dilated aortic root.

Conclusion:

CTA allowed anatomical characterization of these surgically significant shunts, by demonstrating pulmonary artery continuity, site of systemic communication, pulmonary artery caliber, arch anatomy, pulmonary venous drainage and extracardiac findings. Identifying these anomalies early offers essential surgical roadmap, allowing life-saving interventions before pulmonary hypertension becomes established.

Keywords: CT angiography; congenital heart disease; aortopulmonary window; anomalous right pulmonary artery; pulmonary hypertension

APPLICATION OF RADIOMICS IN ^{18}F - FDG PET-CT IN DETERMINING AXILLARY LYMPH NODE METASTASIS IN BREAST CANCER CASES

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ABSTRACT

Background:

Breast cancer is the most commonly diagnosed cancer among women worldwide. Assessment of axillary lymph node (ALN) involvement is a crucial component of staging and is commonly performed using ultrasound, computed tomography (CT), or positron emission tomography–computed tomography (PET-CT). Confirmation of ALN metastasis, however, still relies on invasive procedures such as core needle biopsy, sentinel lymph node biopsy, or axillary lymph node dissection. Radiomics enables extraction of quantitative imaging features from medical images and may provide a non-invasive method for predicting nodal metastasis.

Methodology:

This single-centre retrospective cross-sectional study included 153 ALN samples from 142 breast cancer patients who underwent pre-treatment PET-CT and had available histopathological results. SUVmax (maximum standardised uptake value) were evaluated, and CT and PET-CT images underwent segmentation, pre-processing, and radiomics feature extraction. Four predictive models were developed and assessed using the area under the receiver operating characteristic curve (AUC-ROC).

Results:

ALN samples with SUVmax >2.0 were significantly more likely to be malignant than those with SUVmax ≤2.0 (67.7% vs 20.0%, $p < 0.001$). The SUVmax-only model achieved a mean AUC of 0.73 (95% CI (Confidence interval): 0.67–0.81). The combined model incorporating SUVmax and five stable radiomics features demonstrated the best performance, with an AUC of 0.84 (95% CI: 0.81–0.85).

Conclusion:

Combining SUVmax with radiomics features improved the non-invasive assessment of ALN metastasis and provided the most accurate and stable predictive model in this cohort, potentially reducing the need for invasive nodal procedures.

Keywords: Breast cancer, axillary lymph node metastasis, PET-CT, radiomics

A RARE ENEMY: CONTEMPORARY INSIGHTS INTO SPINDLE CELL SARCOMA OF THE NECK

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ABSTRACT

Introduction:

Spindle cell sarcoma of the neck is an exceptionally rare and aggressive soft tissue malignancy characterized by nonspecific clinical presentation and overlapping imaging features. Radiologic assessment plays a pivotal role in early detection, characterization, staging, and surgical planning in head and neck imaging. However, diagnostic ambiguity frequently delays definitive management.

Case Presentation:

We present a case of a young gentleman with progressive painless lateral neck swelling with no obstructive symptoms. A multimodal approach involving contrast-enhanced computed tomography (CT) and Magnetic Resonance Imaging (MRI) revealed a perivertebral mass. Histopathological examination (HPE) subsequently confirmed a high-grade undifferentiated spindle cell malignancy.

Conclusion:

In conclusion, recognition of aggressive imaging features such as infiltrative margins, necrosis, diffusion restriction, and rapid interval growth may increase suspicion for high-grade sarcoma and expedite tissue diagnosis. Early radiologic suspicion may improve clinical outcomes through timely intervention.

Keywords: Spindle cell sarcoma, neck mass, cervical malignancy, head and neck imaging.

WHEN CROHN'S TURNS ACUTE: ILEO-COLIC INTUSSUSCEPTION COMPLICATED BY SYSTEMIC SEPSIS

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ABSTRACT

Introduction:

Adult intussusception is a rare cause of bowel obstruction and uncommon in Crohn's disease, where inflammatory rather than neoplastic lead points predominate.

Case Presentation:

We report a 26-year-old man with severe fistulizing Crohn's disease presenting in septic shock with diffuse peritonitis and multiple draining perianal, perineal, and scrotal fistulas. Contrast-enhanced CT demonstrated long-segment ileo-colic intussusception extending to the splenic flexure, with mural thickening, hyperenhancement, pneumatosis intestinalis, and inflammatory fat stranding, suggesting bowel ischemia and impending perforation. Additional findings included penetrating disease with intra-abdominal abscesses and enterocutaneous fistulation. Emergency laparotomy was performed following rapid clinical deterioration. Intraoperative findings confirmed severe inflammatory Crohn's disease without malignancy. Despite surgical intervention and intensive care, the patient succumbed to intra-abdominal sepsis with multiorgan failure.

Conclusion:

This case highlights a rare, life-threatening manifestation of Crohn's disease and underscores the pivotal role of CT in early diagnosis, assessment of bowel viability, and detection of penetrating complications, enabling timely multidisciplinary management and surgical decision-making in critically ill patients.

Keywords: Crohn's, Intussusception

A MIMIC OF MALIGNANCY: RIGHT EXTERNAL AUDITORY CANAL HAEMANGIOMA WITH LOCALLY AGGRESSIVE OSSEOUS AND FACIAL NERVE CANAL INVOLVEMENT

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ABSTRACT

An 83-year-old gentleman presented with a 3-month history of right ear pain and intermittent bleeding, with no constitutional symptoms. Otoscopy revealed a vascular mass completely occupying the right EAC that bled easily on contact. A biopsy demonstrated a benign vascular lesion suggestive of a haemangioma or vascular malformation. Initial high-resolution computed tomography (HRCT) of the temporal bone revealed an enhancing right EAC mass causing surrounding bone erosion and extending into the facial nerve canal.

The patient subsequently defaulted from follow-up. He later represented to the emergency department with profound ear bleeding resulting in hypovolemic shock. After fluid resuscitation and stabilization, a emergency CT angiography (CTA) of the neck was performed. The CTA demonstrated an interval increase in the size of the EAC mass, though no active contrast extravasation was noted at the time of imaging.

Keywords: External Ear Canal Haemangioma, HRCT Temporal, CT Angiography