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2024.BNAC.RI.001**Achieving an Ambitiously Efficient NHS**

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Background: Presently NHS is nowhere near achieving a best-possible efficient service. There are multifactorial causes. This proposal explores a few case studies of inefficiency, highlight the problems and workable solutions. This includes Operating theatre time utilisation, GP Referral system and MATS referral service.

Material and Methods: Theatre time utilisation was compared between weekday vs weekend elective orthopaedic lists. Theatre utilisation timings were logged on the blue spear theatre system. This data was taken on consecutive four weekend lists and compared with midweek elective orthopaedic list. Also, case examples of referral system involving MATS and GPs were studied.

Results: It has been observed that the efficiency and output, staff satisfaction level is higher on the weekend lists as compared to the weekday regular lists. For the GP referral system - there is no consistency in referring to hospitals. MATS referral system identified duplication of referrals and longer waiting time before a patient is seen by consultants. There are straightforward solutions proposed.

Keywords: Theatre time utilisation, Referral system, Efficiency

Learning: Lack of efficient system, transfer daily affairs of theatre to lead surgeon; Proposal for trust to adopt staff friendly culture

2024.BNAC.RI.002**Risk factors for Carbapenem-resistance in Critical Care**

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Background: There are established risk factors such as diabetes mellitus, immunosuppression, and prolonged hospitalisation for Carbapenem-resistant microbes. However, there are patients without known risk factors presenting with community acquired resistant microbes observed in clinical practice. We present here a case series of Carbapenem-resistant microbes.

Case 1: 73-year male, with diabetes mellitus and hypertension presented with history of trauma and tissue injury to the right leg. Empirical antibiotics given were (Piperacillin Tazobactam and Teicoplanin). Laboratory results revealed anaemia, high white cell count and prerenal acute kidney injury. Tissue culture revealed Klebsiella (Carbapenem R). Antibiotic were changed to Ceftazidime and Avibactam. Clinical recovery was achieved in 20 days.

Case 2: 55-year female, with diabetes and hypertension presented with fever and urinary tract infection. Initially started on Cefoperazone sulbactam. Initial laboratory results revealed significant leucocytosis and altered renal function. Urine culture grew Acinetobacter (Carbapenem R), and CT scan was compatible with pyelonephritis. Antibiotic were changed to Tigecycline with recovery in 8 days.

Case 3: 56-year male, with hypertension, and chronic alcohol dependence presented with low grade fever and generalised weakness. Clinical picture was compatible with decompensated liver disease and acute kidney injury (probable sepsis related). He was managed in ICU (Intensive Care Unit). Empirical antibiotics was not started but culture grew Klebsiella sp (Carbapenem R). He was treated with Ceftazidime avibactam. His clinical condition remained stable, and he had a prolonged hospitalisation for 27 days.

Learning: Community acquired Carbapenem-resistant microbes are emerging. Empirical antibiotics need to be judiciously administered to prevent occurrence of resistant microbes. Resistant Acinetobacter species is increasingly seen in clinical practice.

Keywords: Carbapenem, Carbapenem resistance, Klebsiella, Acinetobacter, Community acquired Carbapenem resistance

2024.BNAC.RI.003

Cough-induced Bilateral Internal Carotid Artery Dissection Complicated by Large Vessel Occlusion and Malignant Middle Cerebral Artery Infarction

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Introduction: Cervical artery dissections (CAD), involving the carotid and vertebral arteries, are a common cause of stroke in patients under 50, accounting for 25% of cerebrovascular accidents. CAD can result from trauma or spontaneously from coughing (respiratory infection), vomiting, or chiropractic manipulation, idiopathic factors, with a family history of dissection or connective tissue disorders. Hypertension, migraines, and recent infections are additional predisposing factors for CAD.

Aim: We present a case of cough-induced bilateral Internal Carotid Artery (ICA) dissection, complicated by large vessel occlusion and subsequent malignant middle cerebral artery (MCA) infarction.

Case Report: 55-year-old man presented with transient episodes of left arm weakness, dysphasia, and facial numbness following a severe coughing fit. These symptoms progressed to left hemiparesis, limb ataxia, and dysarthria within three hours, with a National Institutes of Health Stroke Scale (NIHSS) score of 8. A non-enhanced brain CT (NCCT) scan and cerebral angiography revealed a small thrombus in the M1 segment of the right MCA with good collateral circulation, extensive occlusion of the right ICA due to dissection, and marked dissection of the cervical portion of the left ICA.

Initially treated with intravenous thrombolysis (IVT) using alteplase according to hospital protocol, the patient showed temporary symptom improvement. However, the next day, he developed new dense left-sided weakness, right fixed gaze, and left-sided inattention. A

repeat cerebral angiography showed a new occluding right M1 thrombus with poor collateral flow in the anterior right MCA territory, due to a second embolus from the right ICA dissection. He was treated with mechanical thrombectomy (MT). Post-MT, NCCT of the head showed a large right MCA infarct with an 8mm midline shift and mass effect. As his Glasgow Coma Scale (GCS) score dropped, an emergency craniectomy was performed to manage the malignant MCA. Following recovery from acute events, he was transferred to rehab once stable for four the months, where he showed significant improvement in muscle tone.

Conclusion: This case underscores -Minor trauma, such as coughing, can trigger bilateral ICA dissections, leading to severe complications. Prompt diagnosis and treatment with IVT and MT in appropriate patients increases favourable functional outcomes. Importance of considering CAD in differential diagnoses for young patients with stroke symptoms following trivial trauma to ensure rapid and effective treatment.

Keywords: Bilateral carotid artery dissections, thrombolysis, alteplase, malignant MCA syndrome, large vessel occlusion.

Learning: Importance of considering CAD in differential diagnoses for young patients with stroke symptoms following trivial trauma to ensure rapid and effective treatment.

2024.BNAC.RI.004

Challenges & Solutions for Foundation & International Medical Graduates in Orthopaedics

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Introduction: Orthopaedic wards in the NHS specialise in the care of patients with musculoskeletal issues, such as fractures, joint replacements, and spinal conditions. These wards typically include a multidisciplinary team of orthopaedic surgeons, nurses, physiotherapists, and occupational therapists

who work together to provide comprehensive care.

Problem: The functioning of an orthopaedic ward can be quite complex, especially with the involvement of several multidisciplinary teams (MDTs), including physiotherapy, occupational therapy, geriatrics, rheumatology, the safeguarding team, the complex discharge team, and the pain/palliative assessment team. This can create an intimidating environment for a newly employed doctor, particularly if a comprehensive orientation has not been provided. This lack of guidance can lead to issues ranging from low self-confidence to significant problems such as depression.

Proposed solution: Discussing in depth the duties and responsibilities expected from the doctor in the current role and providing a structured, well-established orientation and induction plan would benefit newly starting doctors. This plan should describe the functioning of the wards, the role of each MDT, the discharge pathways, the compulsory prescribing of VTE prophylaxis and adequate analgesia, and common concerns and complications faced in the ward, along with how to avoid them through prompt action by the doctors. Additionally, offering a brief shadowing period would help the doctor adapt and blend into the system.

Creating awareness among the staff working with newly joined doctors can help them feel comfortable and part of the team. Staff (working around new IMGs) should be vigilant for signs of loneliness or depression (e.g., low energy/mood, tiredness, deep voice, avoiding eye contact), which are quite common among IMG (International Medical Graduate) doctors. Encouraging the staff to invite new IMGs to local celebrations like social gatherings, festivals, public events where the respective staff group is participating to make IMGs a part of the team. To address these issues, organising weekly or fortnightly informal meetings for new IMGs can foster discussions and integration with the team.

Keywords: IMG challenges, new role knowing the NHS, mental health

Learning: Addresses the mental health issues and in turn increases the effectiveness of the newly joined IMGs in the NHS improving efficiency and retention.

2024.BNAC.RI.005

Exploring Bladder Scanners as an Alternative for Measuring Residual Volume

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Background: Diagnosing and managing urological conditions depend on precise residual bladder volume measurement. Typically, ultrasound (USG) is used for this purpose. However, bladder scanners are gaining popularity due to their availability, ease of use, and speed.

Aim: To evaluate the potential use of bladder scanners as a viable substitute for USG in clinical practice

Study Design: Prospective interventional study
Sample size: 100 patients. **Inclusion criteria:** Patients >18 years with lower urinary tract symptoms (LUTS). **Exclusion criteria:** Acute urinary retention, ICU patients with neurogenic bladders. **Data collection:** Conducted by a surgery resident in the OPD using a bladder scanner, USG, uroflowmetry, and in-and-out catheterisation. **Data included** demographic parameters, diagnosis, pre- and post-voiding volumes. **Data analysis:** Performed using paired T-test in Excel. **Ethical considerations:** Patient data confidentiality maintained; ethical permission obtained.

Results: Pre-void volumes measured by scanners were slightly higher than those by USG. Post-void volume means were lowest with USG (80.95 mL), followed by scanners (103.21 mL) and catheterisation (106.46 mL). There was a strong correlation between voided volumes measured by catheterisation, bladder scanner, and USG, with high interclass correlation coefficients observed in Bland-Altman plots.

Conclusion: Post-void residual volume (PVR) measurement is vital for diagnosing conditions such as benign prostatic hypertrophy. Research demonstrates that bladder scanners offer a non-invasive, accurate alternative to catheterisation

and USG, ensuring high patient comfort and reliable measurements, particularly in surgical settings.

Keywords: Post-voidal residual volume, urological diagnostics, bladder scanner

Learning: Demonstrates efficacy of bladder scanners in urological diagnostics, while ensuring patient comfort and safety.

2024.BNAC.RI.006

Wunderlich Syndrome

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Background: Wunderlich syndrome, commonly referred to as spontaneous renal haemorrhage, is an uncommon and fatal illness marked by abrupt, non-traumatic bleeding into the area surrounding the kidneys (the perirenal or subcapsular region). This typically manifests as sudden discomfort in the side of the body, blood in the urine, and indications of internal bleeding including a drop in blood volume leading to shock.

Case Presentation: A 53-year-old male was admitted with left loin pain for 2 days, nausea and vomiting, high grade fever associated with chills. He had a past medical history of systemic hypertension, type 2 diabetes mellitus (on medical management), chronic kidney disease stage V, and pulmonary tuberculosis.

Laboratory investigations revealed albumin and leucocyte in urine, Hb: 11, platelets: 69000, creatinine: 10, sodium: 123, and potassium: 4.4.

As per the AKI-KDIGO guidelines, the patient was diagnosed with progression of CKD to End Stage Renal Disease (ESRD). He was inducted on haemodialysis. He underwent two sessions of haemodialysis as in patient followed by arteriovenous fistula surgery. The patient underwent one more session of haemodialysis and was discharged on the 4th day in stable condition.

24 hours later he was brought to casualty with giddiness and hypotension. On admission his BP was 60 mmHg systolic. He was resuscitated with fluids and inotropes. Preliminary

investigations showed Hb- 4mg/dl. He was given 2 units of packed red cells and dialysed (heparin free fluid). He was stabilised, inotropes were tapered. His CT abdomen revealed a large heterogenous collection (measuring 13.6 x 11.6 x 9.5 cms) with faintly hyperdense areas (mean Hounsfield units-50 to 60) in left renal fossa-likely spontaneous left subcapsular and perinephric hematoma.

Wunderlich Syndrome was diagnosed after considering ultrasound and CT results.

Discussion: Wunderlich Syndrome is a spontaneous renal or perinephric haemorrhage occurs in the absence of trauma. It is named after Carl Wunderlich who described this condition in 1856 and is characterized as a rare entity with slight male preponderance. Urologist advised a nephrectomy in case of any deterioration. The patient was managed with multiple packed red cell transfusions and alternate day haemodialysis. On discharge, the patient had no expansion in haematoma, no further haemoglobin drop and improving renal function.

Keywords: Wunderlich Syndrome, Pyelonephritis, Chronic Kidney Disease, Perinephric Hematoma, End Stage Renal Disease

Learning: Wunderlich syndrome, commonly referred to as spontaneous renal haemorrhage, is an uncommon and fatal illness marked by abrupt, non-traumatic bleeding into the area surrounding the kidneys (the perirenal or subcapsular region).

2024.BNAC.RI.007**Dengue Complicated by Hemophagocytic Lymphohistiocytosis & Fulminant Liver Failure**

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Case Presentation: A 15-year-old male presented with a 6-day history of high-grade continuous fever, haematemesis, melaena, abdominal pain and generalised myalgia. Initial investigations revealed dengue NS1 antigen positivity, CRP of 6 mg/L, and significant thrombocytopenia (platelets: 28,000/mm³). **Diagnosis -** Severe dengue haemorrhagic fever, with erosive haemorrhagic gastritis, secondary HLH, fulminant liver failure with coagulopathy, hepatic encephalopathy, and sepsis due to *Klebsiella pneumoniae*.

Clinical Course: Upon admission to the Paediatric Intensive Care Unit (PICU), initial complete blood picture (CBP) showed severe thrombocytopenia (8,000/mm³) and leukopenia (4,620/mm³). Management included three units of random donor platelets (RDP), fresh frozen plasma (FFP), cryoprecipitate, and packed red blood cells (PRBCs) due to gastrointestinal bleeding.

HLH was diagnosed based on the criteria of hyperferritinaemia (40,000 ng/mL), hypofibrinogenemia (fibrinogen: 150 mg/dL), hypertriglyceridemia (triglycerides: 320 mg/dL), severe liver injury (ALT: 1200 U/L, AST: 1000 U/L), and bi-cytopenia (leukocytes: 4,620/mm³, platelets: 8,000/mm³).

The patient received 2 g/kg of IVIG and a pulse dose of methylprednisolone for five days, resulting in clinical improvement and a decrease in ferritin levels. The patient was transitioned to oral dexamethasone upon discharge. Due to sepsis, empiric antibiotics (piperacillin-tazobactam and amikacin) were initiated and later adjusted based on culture sensitivities to cefoperazone-sulbactam.

The patient's haemodynamic status was initially stable, but noradrenaline infusion was required on day 2 due to altered haemodynamic (wide pulse pressure) and dobutamine infusion was started on day 3 for poor peripheral perfusion. Mechanical ventilation was necessary on day 3 to secure the airway due to worsening sensorium, violent behaviour, and multiple episodes of haematemesis. Blood pressure improved subsequently, allowing discontinuation of inotropes. Since day 4, the patient experienced transient hypertension, managed with low doses of enalapril and amlodipine, which were gradually tapered off as blood pressures normalised.

Neurological assessment revealed hyperammonaemia (360 µmol/L) and bilateral posterior cortical hyper densities on CT, suggestive of posterior reversible encephalopathy syndrome (PRES). Management included hypertonic saline, levetiracetam, and clonazepam, with gradual sensorium improvement by DOA 9.

Outcome: The patient recovered with normalisation of blood pressure, improved sensorium, and stabilisation of liver function. He was weaned off inotropes, extubated on day 9, and transitioned to the ward. At discharge, he was haemodynamically stable, mobilising with support, and had improved oral intake. Discharge medications included tapering doses of dexamethasone.

Conclusion: This case underscores the complexity of managing severe DHF with secondary HLH and fulminant liver failure. Multidisciplinary collaboration and prompt treatment, including supportive care, immunomodulation, and tailored antibiotic therapy, were pivotal in patient recovery. Continued research and clinical vigilance are essential for improving outcomes in such critical paediatric cases.

Keywords: Dengue haemorrhagic fever, hemophagocytic lymphohistiocytosis, fulminant liver failure, paediatric intensive care, severe thrombocytopenia, sepsis, immunomodulation.

Learning: Diagnosis and Management of Dengue Haemorrhagic Fever and Hemophagocytic Lymphohistiocytosis in Paediatric Patients.

2024.BNAC.RI.008

Secondary Hemophagocytic Lymphohistiocytosis with Pancytopenia and Multiorgan Involvement: Case Report

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Background: Hemophagocytic Lymphohistiocytosis (HLH) also known as Hemophagocytic syndrome is a fatal inflammatory disease caused by hyperactivity of lymphocytes and histocytes. It is classified into Primary (genetically acquired) or Secondary (acquired post infection or autoimmune diseases and malignancies). Clinically presents as fever, cytopenia, hepatosplenomegaly, raised ferritin levels and altered liver function. Delayed diagnosis can lead to multiple organ involvement causing poor prognosis and death. This can be avoided by prompt diagnosis and initiation of prompt treatment in suspected patients.

Case Description: A 28-year-old male with no previous comorbidities presented with fever (high grade, associated with chills, highest recorded temperature was 103° F), black coloured stools, headache, and body pains for 10 days. On physical examination findings included hepatosplenomegaly, cervical lymphadenopathy and a large ecchymotic patch on left forearm.

Lab investigations revealed severe pancytopenia, raised ferritin level, multiorgan dysfunction and was diagnosed to have secondary Hemophagocytic lymphohistiocytosis with aetiology being dengue fever and coinfection with Salmonella Para typhi B. Patient responded to appropriate antibiotic therapy and supportive measures. Both clinical and biochemical profile of the patient were improved.

Conclusion: Hemophagocytic lymphohistiocytosis is associated with diverse infectious diseases and results in increased mortality. High clinical suspicion is necessary for early diagnosis of HLH. Early initiation of immunosuppressants along with definitive therapy against the causative agent can be

lifesaving in secondary Hemophagocytic lymphohistiocytosis.

Keywords: Hemophagocytic lymphohistiocytosis, Pancytopenia, Dengue fever, Salmonella Para typhi B, Multiorgan dysfunction

Learning: Early detection and diagnosis of the disease improves clinical outcomes.

2024.BNAC.RI.009

Anti Gaba-B Antibody Receptor Associated Autoimmune Encephalitis in Pregnancy

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We report a primigravida 31-year female hospitalised at 32 gestational weeks with status epilepticus.

At the proper time of illness, she developed refractory status epilepticus managed with barbiturate coma and emergency termination of pregnancy.

Battery of laboratory and radiological tests did not lead to a definite diagnosis.

On further workup she was diagnosed as anti-GABA-b receptor autoimmune encephalitis responded to immunotherapy and pulse steroids.

Keywords: Epilepsy in pregnancy, Anti GABA-B Antibody receptor, Seizures in pregnancy

Learning: rare causes of epilepsy in pregnancy

2024.BNAC.RI.010

Intravenous Fluid Therapy in Peri-operative Surgical Patients - A Quality Improvement Project

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Aim: To investigate fluid delivery practices and assess the incidence of postoperative electrolyte abnormalities in peri-operative surgical patients.

Background: Intravenous fluid therapy is a critical component of peri-operative care, directly influencing patient outcomes. Despite its importance, inappropriate fluid management can lead to significant complications, including electrolyte imbalances, fluid overload, and dehydration.

Methodology: A prospective audit over two months, involving 50 surgical patients undergoing various procedures. The incidence of electrolyte abnormalities, including hyponatremia, hypernatremia, hypokalaemia, and hyperkalaemia, was analysed.

Results: Normal saline and Ringer's lactate were the most used fluids. There was a high incidence of postoperative electrolyte abnormalities: hyponatraemia (15%), hypernatraemia (10%), hypokalaemia (20%), and hyperkalaemia (8%). Patients receiving higher volumes of isotonic fluids exhibited a higher risk of hypernatraemia, while those with insufficient potassium supplementation were prone to hypokalaemia. The audit also identified instances of fluid overload, particularly in patients with pre-existing renal impairment.

Discussion: The findings highlight the need for standardised guidelines on IV fluid therapy to improve patient safety. This underscores the importance of regular monitoring of electrolyte levels and adjusting fluid therapy based on individual patient needs. Implementing a protocol-driven approach could help mitigate the risks associated with inappropriate fluid administration.

The re-audit revealed that the implementation of standardized protocols, the NICE guidelines on IV fluid management in adults and regular training led to more consistent fluid management practices. Normal saline and Ringer's lactate remained the most used fluids, but with more appropriate volume adjustments.

The incidence of postoperative electrolyte abnormalities showed marked improvement: hyponatremia (2%), hypernatremia (0%), hypokalaemia (0%), and hyperkalaemia (1%). Patients receiving isotonic fluids demonstrated better electrolyte balance, and instances of fluid overload were significantly reduced, especially in patients with pre-existing renal impairment.

Discussion: The re-audit indicates that the recommendations from the initial audit were effective in improving IV fluid therapy practices.

2024.BNAC.RI.011

Disseminated Melioidosis: From Ruptured Mycotic Aortic Aneurysm, Diabetic Foot Ulceration to Septic arthritis, and Osteomyelitis

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Introduction: Burkholderia pseudomallei, a gram-negative bacterium causing melioidosis in endemic to Southeast Asia. Prolonged infection leads to dissemination including rare presentations of mycotic aneurysms, osteomyelitis, septic arthritis, and diabetic foot infection. We describe here a case of disseminated melioidosis presenting with an infra-renal aortic aneurysm.

Case background: A 65-year-old, male, retired farmer, presented to emergency with worsening back pain for 5 days, continuous fever for 15 days associated with infected ulcers in his right 4th and left great toe. He was diagnosed to have pyrexia of unknown origin, treated with antibiotics four months prior and discharged.

On examination, he had low grade fever, blood pressure of 110/70mmHg and a tender, pulsatile mass in the epigastrium with normal distal pulses.

CT aortogram revealed 63x54mm saccular aneurysm arising from antero-lateral aspect of infrarenal abdominal aorta with contained rupture. Blood cultures grew Burkholderia pseudomallei sensitive to cephalosporins and carbapenems.

He underwent urgent open surgical repair with a 16mm Rifampicin-soaked, tube Dacron graft and omental wrap. Intraoperative cultures also grew Burkholderia Pseudomallei.

Postoperatively, the patient continued to have fever which did not settle with cephalosporins and developed right knee joint pain and swollen ankles. PET CT carried out post-operatively showed increased uptake in retroperitoneal sac,

right distal tibia, left ankle suggesting dissemination. The antibiotic was switched to meropenem, and fever subsided. He was treated with a prolonged course of antibiotics for six months- meropenem for 2 months followed by cotrimoxazole and doxycycline for 4 months. He is afebrile 6 months post discharge and continues to do well.

Discussion: Diagnosis was missed initially because non fermenting gram-negative bacilli are not often speciated in routine cultures. PET CT helps to pick up disseminated melioidosis. Rare presentations of mycotic aneurysms, diabetic foot infection, osteomyelitis and septic arthritis need to be kept in mind in disseminated melioidosis.

Keywords: Melioidosis, Aortic aneurysm, Burkholderia pseudomallei, Dissemination,

Learning: prolonged infection leads to dissemination including rare presentations of mycotic aneurysms, osteomyelitis, septic arthritis, and diabetic foot infection. Rare presentations of mycotic aneurysms, diabetic

2024.BNAC.RI.012

Giant Parathyroid Adenoma in a Brown Tumour

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Background: Brown tumour is a bone lesion arising from excessive osteoclastic activity, typically in the context of hyperparathyroidism. These lesions can cause significant bone pain and structural abnormalities. Brown tumours are rarely associated with parathyroid adenomas, which can pose diagnostic and intraoperative challenges.

Case report: A 30-year-old female presented with multiple joint pains, diagnosed as rheumatoid arthritis, and severe lower back pain. A painless neck swelling was observed.

Initial laboratory tests showed elevated serum calcium (11.9 mg/dl) and parathyroid hormone (2538 pg/ml) levels, with low 25-hydroxyvitamin D (21.16 ng/ml). CT scan of the sacroiliac joints and SPECT-CT identified a left-sided parathyroid adenoma.

The patient underwent local excision of the adenoma under general anaesthesia, confirmed by intraoperative ultrasound. The patient's parathyroid adenoma was successfully excised. Histopathology confirmed the diagnosis. Postoperative monitoring showed decreased calcium and parathyroid hormone levels, indicating effective surgical intervention.

Discussion: Brown tumours, although rare, can complicate the clinical picture in hyperparathyroidism. Accurate preoperative localisation using imaging modalities like SPECT-CT and intraoperative ultrasound is crucial for successful surgical management. This case highlights the need for a high index of suspicion and thorough preoperative planning in patients presenting with bone lesions and biochemical evidence of hyperparathyroidism.

Keywords: Brown tumour, Hyperparathyroidism, Parathyroid adenoma, Osteoclastic activity, Intraoperative ultrasound

Learning: Importance of Preoperative Imaging

2024.BNAC.RI.013

Metastatic Spinal Cord Compression – An Audit

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Background: Metastatic spinal cord compression is a serious medical condition that can significantly impact patients' quality of life and prognosis. By understanding how it is currently managed and identifying areas for improvement, healthcare providers can enhance patient outcomes and experiences. Patients with metastatic spinal cord compression often experience debilitating symptoms such as pain, weakness, and loss of function.

Aim: To assess current practices and outcomes, to alleviate symptoms, improve mobility, and preserve quality of life.

Design: The audit was over a period of one year from Sep'24 and had three cycles. It involved measuring patient outcome, compliance with guidelines and multidisciplinary collaboration. The data collection involved neurological

examination including PR examination, dexamethasone of the right dosage, PPI (proton pump inhibitor) cover, blood sugar monitoring, neurosurgery and AOS involvement, average time to MRI and modality of treatment (neurosurgical intervention, radiation, or conservative management).

Key outcome measures included improvement in pain levels, preservation or improvement of neurological function, restoration of mobility and functional independence, reduction in complications and adverse events and overall quality of life assessments.

Results: The audit showed an improvement in the outcome of the diagnosis and a quicker response and time to MRI scan.

Keywords: Metastatic, spinal cord compression, dexamethasone, acute oncology service, radiation

Learning Points: Quick identification of the red flags, Documentation of the neurological findings and PR examination; Timely radiation can lead to preservation of function.

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Management of Dyslipidaemia in Central India: Audit

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Background: The epidemic of atherosclerotic cardiovascular disease (ASCVD) continues unabated, with dyslipidaemia being a major contributing factor. There is a notable gap between routine clinical practice and the guidelines updated by the Lipid Association of India (LAI).

Aim: Analyse the compliance of guidelines given by Lipid Association of India in 'Expert Consensus Statement on Management of Dyslipidaemia in 2020:

Design: A retrospective study was conducted. Patient files were reviewed to analyse compliance with dyslipidaemia management guidelines. The study period was from August 1, 2023, to November 30, 2023. Interviews were conducted with the Department of Medicine and

the Hospital Dietician using a pretested questionnaire to assess guideline awareness.

Results: Awareness of Lifestyle Modification- 100% in consultants, 80% in Residents, 60% in Dietician. Awareness of LDL Cholesterol Targets- 100% in consultants, 85% in Residents, 60% in Dietician. Awareness of Triglycerides Targets- 100% in consultants, 82% in Residents, 65% in Dietician. Awareness of Lipoprotein(a), Apolipoprotein B, Non-HDL Cholesterol Targets- 60% in consultants, 40% in Residents, 0% in Dietician. Prevalence of Dyslipidaemia- ~30% of patients, with ~65% males and ~35% females. Compliance of guidelines for dyslipidaemia management - ~75% in OPD, ~62.5% in IPD.

Conclusion: New criteria such as Lipoprotein(a), Apolipoprotein B, and non-HDL cholesterol targets, need to be implemented. Financial constraints are the primary reason for non-compliance. Patients with incidental dyslipidaemia findings in IPD set up often do not receive guideline-based interventions but are advised upon discharge.

Keywords: Dyslipidaemia, Guidelines, Awareness, Compliance, LAI (Lipid Association of India)

Learning: Significance of Lifestyle modifications like dietary changes and physical activities. Significance of non-high density lipoprotein cholesterol, lipoprotein(a), apolipoprotein B in routine lipid profile investigations and management of dyslipidaemia.

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Optimum use of Proton Pump Inhibitors: Audit

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Background: Proton pump inhibitors (PPIs) have been available for over three decades and are among the most prescribed medications. They are effective in treating a variety of gastric acid-related disorders. They are freely available and based on current evidence, use of PPIs for inappropriate indications and duration appears to be common. Over the years, concerns have been raised on the safety of PPIs as they have

been associated with several adverse effects. Hence, there is a need for PPI stewardship to promote the use of PPIs for appropriate indication and duration.

Aim: To analyse the compliance of guidelines, a prospective observational analytical study in clinical set up was conducted, the period of study was 20th April 2024 – 20th June 2024. Sample size of 40 Patients who visited our hospital.

Results: In amongst 65% of patients there was appropriate use of PPIs, while in about 35% of patients there was inappropriate use of PPIs.

Most common causes of inappropriate uses are- Routine PPIs prophylaxis in patients on NSAIDs; Longer than recommended duration/overuse; PPIs not discontinued if no definite indications; Financial constraints related to investigations related to GERD or Dyspepsia. About 30% of the patient admitted to over-the-counter use PPIs.

Conclusion: There is overuse of PPIs, hence there is requirement for an educational initiative and outreach program to promote PPIs stewardship. It should be done at multiple level such as amongst doctors, nursing staff, pharmacist, patients etc. "

Keywords: PPIs (Proton Pump Inhibitors), Stewardship, Compliance, Inappropriate, Guidelines

Learning: Awareness of rational use of Proton pump inhibitors.

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Strategies for Sustainable Improvement - Staff Shortages and Backlog in the NHS:

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Introduction: The National Health Service (NHS) is grappling with significant staff shortages and a substantial backlog of patients, exacerbated by the COVID-19 pandemic. This presentation explores the underlying causes, assesses the impact on healthcare delivery, and proposes financially viable solutions to mitigate these challenges.

Background The NHS has long faced staffing challenges, with current estimates indicating a deficit of over 100,000 healthcare professionals. Factors contributing to this shortage include an ageing workforce, Brexit-related impacts, and insufficient training pipelines. Concurrently, the backlog of patients awaiting treatment has surged to over 6 million, causing delays in essential medical care and compromising patient outcomes.

Recommendations: 1. **Enhancing Workforce Recruitment and Retention:** Streamlining International Recruitment: Simplify visa processes and recognise foreign qualifications to attract skilled professionals from abroad. Improving Working Conditions: Implement flexible working hours, mental health support, and competitive salaries to retain existing staff and attract new recruits. Expanding Training Programs: Increase funding for medical and nursing schools, provide scholarships and create accelerated training programs to boost the domestic workforce.

2. **Leveraging Technology: Telehealth Services:** Expand telehealth capabilities to reduce physical hospital visits and manage patient care efficiently. AI (Artificial Intelligence) and Automation: Utilise artificial intelligence for administrative tasks, diagnostics, and patient monitoring to free up clinical staff for direct patient care. Optimising Resource Allocation: Community Care Models: Invest in community health services to manage chronic conditions locally and reduce hospital admissions. Flexible Staffing Solutions: Employ temporary and locum staff to address immediate shortages, ensuring patient care continuity.

Conclusion: Addressing the staff shortages and patient backlog in the NHS requires a multifaceted approach - by enhancing recruitment and retention efforts, leveraging technological advancements, and optimising resource allocation. [OBJ]

Keywords: skilled professional, patient care, NHS, backlog of patients

Learning: Advanced Workforce Planning: Leveraging data analytics to predict staffing needs ensures timely recruitment and efficient resource allocation, addressing high-demand areas and reducing bottlenecks.

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Penile Cutaneous Horn - A Case Report

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Introduction: Cutaneous horns are uncommon, hyperkeratotic projections that can develop on various parts of the body, typically arising from underlying benign, premalignant, or malignant conditions. Their occurrence on the penis is infrequent, presenting unique diagnostic and therapeutic challenges. This case report details the clinical presentation, diagnosis, and management of a penile cutaneous horn, contributing valuable insights to the limited literature on this rare entity.

Case Report: A 55-year-old male presented with a firm, horn-like lesion on the dorsal aspect of his penile shaft, progressively enlarging over the past year and causing pain and discomfort. He had no significant medical history, including trauma or sexually transmitted infections.

Clinical examination - revealed a keratotic projection of 1 -2 cm in length, with a broad base, and induration was palpated over the entire glans penis. The pre-operative diagnosis was finalised as penile cutaneous horn, and the patient was worked up for penile partial glansectomy.

Treatment: surgical excision under spinal anaesthesia, ensuring complete removal of the lesion with a margin of normal tissue to reduce recurrence risk and the histopathological analysis showed a well- differentiated squamous cell carcinoma of the penis without any lymph vascular or perineural invasions.

Follow up - At the six-month follow-up, there was no recurrence, and the patient was satisfied with the cosmetic and functional outcomes.

Conclusion: It underscores the need for clinicians to be aware of this rare condition to ensure timely and effective treatment.

Keywords: Penile cutaneous horn, hyperkeratosis, surgical excision, penile partial glansectomy, squamous cell carcinoma.

Learning: Recognition: Early identification of penile cutaneous horn is crucial due to its potential malignancy.

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Challenges faced by International Medical Graduates in Raising Concerns

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Background: International Medical Graduates (IMGs) are integral to the National Health Service (NHS) workforce, contributing significantly to patient care across various specialities. Despite their essential role, IMG junior doctors often encounter unique challenges that can impede their ability to raise concerns about clinical practices, patient safety, and workplace issues. Understanding these challenges is crucial for fostering a supportive and transparent healthcare environment.

Objective: This abstract outline the key problems faced by IMG junior doctors in the NHS when attempting to raise concerns, highlighting areas that require attention to improve their work experience and enhance overall patient care.

Key Challenges:

- 1. Cultural and Communication Barriers:** IMGs frequently face difficulties in adapting to the cultural and linguistic nuances of the NHS. Differences in medical terminology, communication styles, and cultural expectations can lead to misunderstandings and make it challenging for IMGs to voice their concerns effectively. This can result in hesitancy to speak up, fearing misinterpretation or being perceived as confrontational.
- 2. Lack of Familiarity with NHS Protocols:** Many IMGs are not adequately familiar with the NHS's specific procedures for raising concerns. The lack of thorough orientation and training on these protocols can leave IMG junior doctors uncertain about the appropriate channels to use and the steps to follow. This uncertainty can deter them from reporting issues, especially in a high-pressure environment where they may already feel disadvantaged.
- 3. Fear of Repercussions:** A pervasive fear of negative repercussions, such as professional isolation, job insecurity, or even discrimination,

is a significant deterrent for IMGs when considering raising concerns. This fear is often exacerbated by past experiences or anecdotal reports of colleagues facing adverse outcomes after reporting issues. Such apprehension can create a culture of silence, where problems go unaddressed, and patient safety may be compromised.

4. Insufficient Support and Mentorship: IMGs often lack access to robust support networks and mentorship opportunities within the NHS. The absence of a dedicated support system can make IMGs feel isolated and unsure about whom to turn to for advice or assistance when faced with concerns. Effective mentorship and support structures are essential for empowering IMGs to raise issues confidently without fear of negative consequences.

Conclusion: The challenges IMG junior doctors face in raising concerns within the NHS are multifaceted and require comprehensive solutions. Critical steps include addressing cultural and communication barriers through targeted training, ensuring thorough familiarisation with NHS protocols, alleviating fears of repercussions by fostering a culture of openness and support, and establishing strong mentorship programs. By implementing these measures, the NHS can create a more inclusive and supportive environment that encourages all healthcare professionals to raise concerns freely, enhancing patient safety and care quality.

Keywords: International Medical Graduates, NHS, Junior Doctors, Raising Concerns, Cultural Barriers, Communication, Patient Safety, Support Systems, Mentorship.

Learning: Cultural Barriers: Differences in communication styles and workplace culture can hinder effective expression of concerns.

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Calculating MUST score, Recording of Change in Weight during a Hospital Admission

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Background: There is a need for routine nutritional risk screening during hospital

admission with hospital-acquired malnutrition affecting up to 65% of inpatients. Malnutrition is associated with other infections and leads to increased mortality, readmissions to hospitals, inferior quality of life, physical frailty, and socioeconomic issues. The public health and social care expenditure associated with malnutrition in adults and children in England in 2011–12, identified using the 'Malnutrition Universal Screening Tool' ('MUST'), was estimated to be £19.6 billion, or about 15% of the total expenditure on health and social care.

Aims: Early identification and prompt treatment of malnutrition during hospital stay using MUST tool. Working with multiple teams to reduce the burden of undernutrition in patients with acute medical illness.

Method: Random sample size data of 60 patients across Derriford hospital.

Outcomes/Conclusions: A collaborative approach with dietitians to educate healthcare professionals about timely identification and correctly recording MUST scoring was adapted to achieve reductions in medical and social needs through general improvement in nutritional status of patients. Consistent training and teaching of the teams involved in patient care to identify malnourishment in admitted patients.

Keywords: MUST, malnutrition, BMI, weight loss

Learning: Regularly calibrate weighing equipment and perform consistency checks to maintain data quality and integrity.

2024.BNAC.RI.020

Criteria for Induction of Labour: An Audit

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Introduction: Induction of labour (IOL) is a critical component of obstetric care aimed at artificially initiating uterine contractions to facilitate vaginal delivery. This clinical audit was conducted to evaluate adherence to the Federation of Obstetric & Gynaecological Societies of India (FOGSI) guidelines for IOL, aiming to enhance maternal and neonatal outcomes by identifying and addressing areas of non-compliance.

Objective: To assess compliance with evidence-based criteria for IOL, including gestational age, indications for induction, cervical assessment, and methods used. The secondary objective was to review patient outcomes and complications associated with IOL.

Methodology: A retrospective review of medical records was performed for all patients who underwent IOL during this period. Data was collected using a structured template and analysed using Microsoft Excel. Key variables included gestational age at induction, indication for induction, maternal medical history, foetal assessment, and consent for induction. Outcome measures included mode of delivery, maternal and neonatal complications, and patient satisfaction.

Results: The audit revealed a 100% adherence rate to FOGSI guidelines. The most common induction method was the use of prostaglandins. The induction rate for May 2024 was 27.8%, with a normal vaginal delivery rate of 23.3%, assisted vaginal delivery rate of 6.7%, and a caesarean section rate of 70%. There were no reported neonatal complications, and patient satisfaction was 100%.

SWOT Analysis: **Strengths:** The audit demonstrated full compliance with FOGSI guidelines and positive maternal and neonatal outcomes. **Weaknesses:** Documentation and patient education need improvement, and the maintenance of a single register poses challenges. **Opportunities:** Regular audits and staff training sessions were recommended to streamline data collection and analysis. **Threats:** Potential changes in patient demographics or health profiles and unique clinical scenarios could impact future compliance and outcomes.

Conclusion: This clinical audit highlights the effectiveness of adhering to FOGSI guidelines for IOL in improving maternal and neonatal outcomes. The identified areas for improvement, particularly in documentation and patient education, provide a foundation for targeted quality improvement initiatives. Ongoing audits and staff training are essential to sustain exacting standards of obstetric care.

Keywords: Induction of labour, FOGSI guidelines, audit compliance, maternal outcomes, neonatal outcomes Quality improvement initiatives, patient education

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Atypical Haemolytic Uraemic Syndrome with Refractory Hypertension- Case Report

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Haemolytic uremic syndrome (HUS) is a type of thrombotic microangiopathy (TMA), characterized by microvascular thrombosis that causes thrombocytopenia, Coombs-negative haemolytic anaemia, and end-organ destruction. Atypical HUS (aHUS), distinguished from typical HUS by its lack of association with Shiga toxin-producing bacteria, typically *Escherichia coli* O157:H7, is linked to genetic or acquired abnormalities in complement system regulation, leading to a poor prognosis with frequent progression to end-stage renal disease (ESRD).

We present a rare case of an 11-year-old male child with atypical HUS, hypertensive encephalopathy, and refractory hypertension.

He presented with symptoms of vomiting, abdominal pain, and haematuria for four days, with no history of fever, rash, sore throat, or loose stools.

Initial evaluation revealed severe anaemia (Hb 4.8 gm/dL), thrombocytopenia (87,000/mm³), with a peripheral smear showing 15% schistocytes, elevated LDH (2,386 U/L), and abnormal renal parameters (urea 201 mg/dL, creatinine 5.99 mg/dL, potassium 5.2 mmol/L). Atypical HUS was suspected, and further evaluation showed high titres of anti-factor H antibodies (>15,000).

Paediatric nephrologist was consulted, and treatment for the child began with methylprednisolone pulse doses, plasma exchange (PLEX), and intermittent haemodialysis. Subsequently, the child experienced altered consciousness and required elective intubation for airway protection. An MRI of the brain revealed findings consistent with posterior reversible encephalopathy syndrome (PRES). The child had refractory hypertension which was managed using a combination of multiple antihypertensive medications, including labetalol and sodium nitroprusside (SNP) infusions, as well as oral medications like amlodipine,

prazosin, hydralazine, clonidine, minoxidil, atenolol, and enalapril. After seven PLEX sessions, the child achieved remission, with repeat anti-factor H values of 570 and improving renal parameters. The child was extubated and continued PLEX every alternate day with intermittent Haemodialysis along with 3 cycles of Sustained low-efficiency dialysis (SLED) and oral steroids.

However, the child experienced a drop in haemoglobin and thrombocytopenia, which was initially treated as sepsis. As schistocytes increased, relapse was considered, and rheumatologist opinion was sought. He was started on rituximab and mycophenolate mofetil (MMF). Genetic workup was done that revealed partial homozygous deletion of CFHR-3 gene. The child improved, with repeat investigations showing improving electrolytes and haemogram with occasional schistocytes and kidney function tests showed urea levels of 60 mg/dL and creatinine levels of 1.2 mg/dL and urine examination (CUE) showed 6-10 rbc/h.p.f.

Upon discharge, all antihypertensive medications were discontinued and was sent on oral steroids and MMF. Later, two doses of Rituximab were given two weeks apart since repeat Anti-Factor H >1500.

Keywords: HUS, Atypical HUS, Anti Factor H, Refractory Hypertension, PRES.

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Adenosine Deaminase in the Diagnosis of Tuberculous Pericardial Effusion

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Introduction: Pericarditis is a rare finding seen with tuberculosis, but its prognosis is excellent with treatment, so early diagnosis is crucial.

Case Report: We report a 45-year-old female, who presented with shortness of breath and fever for the last two days. She also reported a history of cough with sputum for the last 2 months. On arrival, she had a cardiac arrest in the emergency and was resuscitated. She had diabetic ketoacidosis and sepsis as evidenced

by deranged renal and liver parameters along with elevated infective markers.

Treatment for DKA along with intravenous antibiotics for sepsis were given. Further evaluation showed high D dimer and superficial venous thrombosis in doppler. CT Chest showed moderate pleural and pericardial effusion.

Pericardiocentesis and pleural fluid aspiration was performed which led to resolution of her dyspnoea. Thrombophilia evaluation showed factor V Leiden mutation to be positive. Although sputum and serous fluid drained pericardial fluid cultures and smear for AFB and other organisms were negative, as well with a negative pericardial fluid PCR for Mycobacterium tuberculosis DNA, an elevated (66.67 U/L [normal, 0 to 18]) adenosine deaminase (ADA) level in the pericardial fluid was consistent with the probable diagnosis of tuberculous pericardial effusion.

The patient was treated with anti-tuberculous drugs with resolution of the clinical syndrome and no recurrence of the effusion thereafter.

Learning: ADA, an enzyme marker of cell-mediated immune response activity to Mycobacterium tuberculosis appears in pericardial fluid.

Keywords: ADA, Pericarditis, Adenosine deaminase; TB; Pericardial effusion.

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Efficacy of Tofacitinib in Rheumatoid Arthritis with Reference to DAS-28 ESR Scoring

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Background: Rheumatoid arthritis (RA) is a chronic, inflammatory autoimmune disease characterized by painful swelling, stiffness, and progressive joint damage, affecting the synovial joints of the hands, wrists, and knees. The Disease Activity Score 28 (DAS-28), incorporating the erythrocyte sedimentation rate (ESR), is a key measure for assessing disease activity and guiding therapeutic decisions in RA. This study aims to assess the efficacy of tofacitinib in RA patients who do not respond adequately to standard DMARD therapy.

Methods: A prospective study was conducted over two years at the Rheumatology and Internal Medicine Departments of SIMS Hospital, Chennai. Data collection included patient IDs, routine blood investigations, ESR, and DAS-28 scores at diagnosis and three months post-standard treatment. Patients showing no improvement were started on tofacitinib, with parameters re-evaluated two months after initiation. Additional assessments included CBC, ESR, CRP, LFT, TB QuantiFERON Gold, HRCT Chest, viral markers (HbSAg, Anti-HCV, HIV), and renal function tests. Complications during treatment and follow-up were detailed.

Results: A total of 86 patients were included in the study. Slightly more than half were over 40 years old, with a female to male ratio of 2:1. About 10% had a family history of rheumatoid arthritis. An independent T-test showed that both Methotrexate and Tofacitinib significantly reduced disease severity, as evidenced by the DAS 28 score.

Conclusion: The study aims to contribute valuable insights into optimizing treatment strategies for RA and improving the quality of life for affected individuals by focusing on the improvement in DAS-28 ESR scores and overall patient outcomes with tofacitinib therapy.

Keywords: Rheumatoid arthritis, DAS-28 ESR, DMARDs, Tofacitinib, Janus kinase inhibitor, disease activity, treatment efficacy, autoimmune disease, chronic inflammation, joint damage

Learning: Tofacitinib is an alternative in treating Rheumatoid arthritis before proceeding to biologics.

2024.BNAC.RI.024

Can Cellulosimicrobium cellulans Cause Meningitis in an Immunocompetent Patient?

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Background: Infections with Gram-positive soil-dwelling Cellulosimicrobium cellulans bacterium are sporadic. Rare reports of its infections noted in the literature were acquired by patients with indwelling medical devices or those who suffered from immunosuppression. As part of management, the implanted medical devices must be removed, and meningitis caused by the bacterium should be treated. However, based on routine clinical and laboratory procedures, it is hard to distinguish between the meningitis caused by C. cellulans and that of other bacteria.

Here, we report a unique case of meningitis in a 37-year-old immunocompetent man who presented with encephalopathy and headache caused by C. cellulans.

He presented with severe headaches, altered sensorium, reduced sleep, photophobia, and restlessness, with a feeling of impending doom, but with no neck rigidity and fever.

Trans-axial T1 and T2/FLAIR head MRI showed diffused cerebral oedema, with bilateral high frontoparietal sulcal enhancement, hyperintensity along the right posterior insula-temporal region, and left parietal deep white matter. Lumbar puncture CSF examination indicated bacterial meningitis and the pathogen C.cellulans was identified on culture.

The patient was administered intravenous ceftriaxone for seven days and dexamethasone for three days. A follow-up lumbar puncture CSF examination showed no signs of the pathogen, indicating its eradication. To our knowledge, this is the first case of C. cellulans causing meningitis in an otherwise healthy man with no history of indwelling medical devices or immunosuppression.

This rare case of meningitis suggests that *C. cellulans* can infect healthy humans and cause meningitis.

Keywords: Altered sensorium, Bacterial meningitis, Leptomeningeal enhancement, Photophobia, Gram negative bacteria

Learning: *Cellulosimicrobium cellulans* is commonly known to infect immunocompromised patients or patients with indwelling medical devices. This is the first case report in an otherwise healthy man. This is the first case report to our knowledge to identify the bacteria in the cerebrospinal fluid.

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Preoperative Botox Injections in Incisional Hernia Surgery

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Background: This study investigates the utility of Botox, known for its muscle-relaxing properties, in the context of incisional hernia repair surgeries. By inducing temporary paralysis of the abdominal wall muscles, Botox is hypothesized to ease the closure of large hernial defects, thereby enhancing surgical outcomes and reducing tension on the repair site.

Aim: To evaluate the effectiveness of preoperative Botulinum toxin (Botox) injections in improving surgical outcomes in patients undergoing incisional hernia repair. Specifically, the study seeks to determine whether Botox can reduce postoperative complications, facilitate quicker return to normal activities, and improve overall quality of life compared to standard surgical approaches without Botox.

Methods: A retrospective cohort analysis was conducted on 32 patients who underwent incisional hernia repair. The patient population was divided into two groups: those who received Botox injections preoperatively (n=15) and those

who did not (n=17). Variables analysed included patient demographics (age, sex), hernial defect size, BMI, comorbidities, European Hernia Society (EHS) classification, and mesh type. The EHS classification indicated that most patients had complex hernias, with classifications in the M3W3 and M5W3 categories. Primary outcomes assessed were the incidence of postoperative complications, the time taken to return to normal activities, and quality of life at six months post-surgery. Comparative statistical analysis was performed to evaluate the differences between the two groups.

Results: The average hernial defect size was larger in the Botox group (mean defect size 13x10 cm) compared to the non-Botox group (mean defect size 10x8 cm). Despite the larger defects, the Botox group exhibited a significant reduction in postoperative complications, with only 6.7% of patients reporting complications versus 17.6% in the non-Botox group. Furthermore, 93.3% of patients in the Botox group resumed normal activities within six months, compared to 82.4% in the non-Botox group. Quality of life assessments revealed that 90% of patients in the Botox group rated their quality of life as "Good" or better, in contrast to 70% in the non-Botox group.

Conclusion: Preoperative Botox administration in incisional hernia repair may enhance surgical outcomes by enabling tension-free closure of larger defects, leading to fewer complications and faster recovery. Improvements observed in the Botox group, particularly in complex cases classified under EHS categories M3W3 and M5W3, suggest that Botox could be a valuable adjunct in complex hernia surgeries. However, due to the study's retrospective design and limited sample size, further prospective, randomised controlled trials are necessary to confirm these findings and develop standardised guidelines for Botox use in hernia repair.

Keywords: Botox, incisional hernia repair

2024.BNAC.RI.026

Implementation of NICE Guidelines on Hearing Loss (NG98) in Clinical Practice

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Pitfalls of NICE guidelines NG98

Guidelines and protocols should guide clinician to follow certain clinical pathways in day-to-day practice, to provide high quality evidence-based care to our patients. If these pathways do not align with local / regional or national policies based on resource, funding or ever evolving practices implemented by government to meet the targets. Then, it will not only increase unnecessary burden at point of delivery but increase frustration amongst patients waiting for their clinic appointments, increase complaints, medico-legal cases against clinicians and wrong / misinformation from various resource to our patients.

We found recent updated version of NICE guidelines NG98 - hearing loss in adults had created issues. This is one of those guidelines widely followed by primary care physicians, audiologist, and high street hearing aid dispensers. We raised pitfalls of this guidelines with NICE team, however, as the response was unsatisfactory, we designed a quality improvement project to address issues created by this guideline. Quality improvement projects ran over 6 months.

Results: We found that 40% of referrals made by primary care physicians, audiologist and high street hearing aid dispensers did not need to be seen by ENT in secondary care. And 20% of referrals were managed by telephone consultation.

Conclusion: Rigid adherence to guidelines does not always help to provide best care to our patients. Using local resource and creating local or regional policy which address not only NICE guidelines but take other priorities into consideration will help to reduce significant wastage of resource in an already constrained NHS.

Keywords: Guidelines, hearing loss, NICE, protocol, IFR, audiology

Learning: It is important to locally review guidelines and protocols - when they may not be applicable to local settings - to reduce wastage, improve clinical pathways and adopt to new way of clinical practices.

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Complexities of Symptomatic Hydronephrosis in Pregnancy

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Background: Symptomatic hydronephrosis in pregnancy presents significant challenges in diagnosis and management due to the need to balance maternal and foetal risks.

Aim: To review the complexities involved in diagnosing and treating symptomatic hydronephrosis during pregnancy.

Design: Literature review.

Methods: A comprehensive search of electronic databases including PubMed, Embase, and Google Scholar was conducted using relevant keywords. Major urological guidelines were also reviewed. References were organized using Mendeley software.

Results: Diagnostic challenges include distinguishing physiological from pathological obstruction. Ultrasound remains the first-line imaging modality, with MRI as a second-line option. Low-dose CT provides the highest diagnostic accuracy but raises concerns about foetal radiation exposure. Management options include conservative treatment, percutaneous nephrostomy, or ureteric stenting. There is no consensus on optimal frequency for drain changes. Definitive procedures like ureteroscopy remain controversial, with most guidelines suggesting limitation to specialist centres during the second trimester if required.

Discussion: Balancing diagnostic accuracy with minimal foetal radiation exposure is a key challenge. Ultra-low dose CT protocols (<1

mGy) are deemed acceptable by most guidelines when clinically warranted. Percutaneous nephrostomy and ureteric stenting provide comparable symptom control, but the ideal frequency of tube changes to prevent encrustation is unclear. Limited safe analgesia options further complicate management.

Conclusion: Managing symptomatic hydronephrosis in pregnancy requires careful consideration of both maternal and foetal risks. Diagnostic imaging should be judiciously used, with ultrasound as the first choice. Conservative management is successful in most cases, but drainage procedures may be necessary. There is a need for large collaborative studies to develop more comprehensive guidelines for this uncommon but important condition.

Keywords: Symptomatic Hydronephrosis, Pregnancy

Learning: Balancing diagnosis and interventions to minimise risks to both the mother and the foetus, with judicious use of imaging modalities.

2024.BNAC.RI.027

Literature Review on Pembrolizumab as an Anticancer Agent

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Background: Pembrolizumab, an FDA-approved anticancer drug, targets the PD-1 pathway, transforming cancer therapy. Approved in 2014, it targets advanced malignancies. This review explores its research, mechanisms of action, clinical efficacy, safety profile, and potential future treatment paths.

Mechanism of Action: Pembrolizumab stops the interaction between the PD-1 receptor and PD-L1 and PD-L2. This turns on T-cells again, boosts the immune system's attack on cancer cells, helps tumours shrink, and raises survival rates in many types of cancer.

Methods: This study reviews the literature on pembrolizumab as an anticancer medication, focusing on its challenges, preclinical and clinical evidence, and mechanisms of action. It uses a thorough search approach to locate

relevant research, including preclinical studies and clinical trials.

Results: The FDA approved pembrolizumab in the KEYNOTE-001 trial. It has been shown to improve overall survival and progression-free survival in people with advanced melanoma and NSCLC compared to standard chemotherapy. It has also shown significant improvements in patients with high PD-L1 expression. Pembrolizumab is effective in treating various cancers, including HNSCC, urothelial carcinoma, gastric cancer, and Hodgkin lymphoma. The KEYNOTE-048 trial showed that it was better than standard chemotherapy for people with HNSCC who had tumours that were positive for PD-L1.

Discussion: Pembrolizumab is a well-tolerated, manageable medication with manageable immune-related adverse events (irAEs). Its long-term safety data suggests these irAEs do not outweigh its benefits. Researchers are working on finding better ways to use it by using combination therapies, creating biomarkers, and adding more uses to get around resistance mechanisms and find ways to predict responses.

Conclusion: Pembrolizumab, a significant advancement in cancer immunotherapy, has shown efficacy against various cancers and a safe profile. This success has ushered in a new era in cancer treatment, emphasising the immune system's role in combating cancer.

Keywords: monoclonal antibody, head and neck cancer, immunotherapy

Learning: Pembrolizumab has transformed cancer therapy by harnessing the immune system to fight tumours.

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Management Challenges in Resistant Graves' Disease

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Introduction: Graves' disease is an autoimmune disorder causing hyperthyroidism, often with ophthalmopathy. Managing Thionamides-

resistant and ineffective cases of iodine is challenging.

Case Presentation:

A 41-year-old female with Graves' disease (diagnosed in 2018) and Graves' ophthalmopathy (2019) has a history of Ankylosing Spondylitis and Ehlers-Danlos Syndrome. She faced adherence issues for two years, and iodine treatment was ineffective. In January 2024, she developed pericarditis. In July 2024, she experienced tremors, anxiety, fatigability, and cold intolerance, and her thyroid function was deranged. The plan was to admit her, establish a euthyroid state, and proceed to thyroidectomy. The process of establishing euthyroid status was initiated with multiple approaches, including maximum doses of carbimazole, restarting iodine solution, prednisolone, Cholestyramine and recently introducing lithium.

Discussion: This case demonstrates the challenges in managing Graves' disease, particularly when resistance to high dose carbimazole and prolonged iodine therapy occurs. Given the increased risks of morbidity and mortality with Hyperthyroidism, alternative approaches, such as early intervention with plasmapheresis, should be considered.

Keywords: Graves, Plasmapheresis, Pericarditis, Lithium, Iodine therapy

Learning: Considering early intervention with plasmapheresis due to the increased risk of morbidity and mortality associated with resistant Graves' disease.

2024.BNAC.RI.029

Heat Therapy Post-gastrointestinal Cancer surgery. [OB]

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Introduction: Recovery from gastrointestinal cancer surgery presents unique challenges, including managing pain, reducing muscle tension, and promoting overall well-being. Among various supportive therapies, heat therapy has emerged as a promising adjunct to traditional post-operative care.

Aim: This article considers the benefits, application guidelines, and considerations for using heat therapy in patients recovering from gastrointestinal cancer surgery.

Understanding Heat Therapy: Heat therapy involves applying heat to the body to alleviate discomfort and aid in recovery. This can be accomplished through methods such as warm compresses, heating pads, and hot baths. The primary effects of heat therapy include increased blood flow, muscle relaxation, and pain relief.

Benefits of Heat Therapy for Post-GI Cancer Surgery Patients: **Pain Management:** Heat therapy can help manage pain by relaxing the muscles around the surgical site and alleviating discomfort. **Enhanced circulation:** Applying heat improves blood flow to the affected area, which can accelerate the healing process. **Muscle Relaxation:** Heat therapy helps to relax these muscles, potentially easing discomfort and improving mobility. **Reduction in Post-Surgical Stiffness:** Post-operative stiffness can restrict movement and contribute to discomfort. Heat therapy can help maintain muscle flexibility and alleviate stiffness, aiding in the patient's overall recovery and mobility.

Guidelines: Controlled Application: Heat should be applied at a moderate temperature to prevent burns or irritation. Methods such as warm packs or moist heat (e.g., warm, damp towels) are recommended. Application times should be limited to 15-20 minutes to avoid potential skin damage.

Considerations and Contraindications

While heat therapy can be beneficial, there are specific considerations and contraindications to be aware of:

Heat therapy is not recommended for areas with active infections, as heat can promote bacterial growth and exacerbate the condition. **Impaired Sensation:** Patients with reduced sensation or compromised circulation, such as those with

diabetes, should use heat therapy cautiously and under medical supervision. Recent Surgical Sites: Immediately after surgery, the use of heat may not be advised. It is important to follow the surgeon's recommendations regarding when and how to begin heat therapy.

Conclusion: Heat therapy can offer significant benefits for patients recovering from gastrointestinal cancer surgery, including pain relief, improved circulation, and muscle relaxation. By integrating heat therapy into a comprehensive post-operative care plan, patients can enhance their comfort and support their recovery.

Keywords: Heat therapy, post-surgical recovery

2024.BNAC.RI.030

Kimuras Disease of the Arm - A rare diagnosis

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Kimura's disease is a rare, benign entity that causes subcutaneous angioblastic lymphoid hyperplasia with eosinophilia. It usually presents with subcutaneous lymphoid swellings with regional lymphadenopathy and associated with renal involvement, which includes presentations.

This report presents a case of a man in his early 20s with a swelling in the medial aspect of the distal left arm with two previous episodes of nephrotic syndrome. Multiple enlarged axillary lymph nodes and epitrochlear nodes were noted.

Ultrasonography revealed a mixed echogenic mass with enlarged lymph nodes. MRI showed a heterogeneous hyperintense lesion. Image-guided fine-needle aspiration showed multiple lymphocytes and eosinophils suggestive of Kimura's disease.

The swelling was surgically excised under general anaesthesia. Histopathology of the excised mass confirmed the diagnosis of Kimura's disease.

Conclusion: This is a rare diagnosis which was treated with excision and low dose steroid therapy, though rare, the differential diagnosis of Kimuras disease must be kept in mind when there is a sub cutaneous swelling in young

Asian males with background of nephrotic syndrome.

Keywords: Kimuras disease, chronic granulomatous disease, subcutaneous lymphoid hyperplasia, regional lymphadenopathy, nephrotic syndrome, eosinophilia

2024.BNAC.RI.031

Male Breast Carcinoma

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Introduction: Male breast carcinoma is a rare condition. According to study in UK 2006, male carcinoma breast is less frequent with 334 diagnosed cases, accounting for less than 1% of all breast cancers.

Case report: 81-year-old male presented with complaints of painless swelling in right side chest wall with inverted nipple for past 3 months. On local examination he had 4x3 cm well defined lump present in right breast centrally placed involving retro-alveolar region mostly covering 7-12' o clock position, involving nipple-areolar complex, and the lump is fixed to the skin with retracted nipple. 0.5 cm nodule was present in medial side of right breast, 1x1 cm axillary-lymph node was present.

We did trucut biopsy which came as invasive ductal carcinoma, provisional grade 2. PETCT reported as metabolically active ill-defined lesion of ~24x17x23 mm with few spiculations, centrally in right breast involving NAC with few sub centimetric level I & II right axillary lymph nodes.

Patient was taken for right MRM under general anaesthesia. Intraoperatively found to have 3x3 cm lump in upper outer quadrant and retro-alveolar region with nipple retraction along with a separate skin nodule of 0.5cm in lower inner quadrant and 1x1 cm firm node in level I. We did mastectomy along with pectoral fascia and axillary node dissection up to level I and II preserving long thoracic nerve of Bell and thoracodorsal vessels. His postoperative period was uneventful and right upper limb exercises started on POD 1 and been discharged.

HPE came as invasive ductal carcinoma, grade 2, with pathologic staging of pT1c pN0; Dermal nodule on the inner quadrant was a reactive fibroblastic proliferation. His immunohistochemistry came as strong positive for oestrogen and progesterone receptors with score of 8/8, Her2neu was negative and Ki67-18%. After discussing with our MDT, planned for adjuvant chemotherapy followed by hormone therapy.

Discussion: The causes were not known. Most common findings in male breast carcinoma are painless, subareolar mass or upper outer quadrant mass. Usual manifested type was infiltrating ductal carcinoma, but unlikely our case was invasive ductal carcinoma. Most of the male breast carcinomas are positive for oestrogen and progesterone receptors. Almost 78% of tumours lies beneath the nipple as centrally placed lesion.

Keywords: male breast carcinoma, right breast lump, nipple retraction, lymph node, mastectomy

Learning: Most common findings in male breast carcinoma is painless, subareolar mass or upper outer quadrant mass. Almost 78% of tumours lies beneath the nipple as centrally placed lesion.

2024.BNAC.RI.032

Progressive Metastatic Disease in Temporal Bone resulting in Facial Paralysis.

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Background: Metastasis of malignant tumours to temporal bones are rare. In a temporal bone, petrous apex is the most common site for metastatic lesions, followed by mastoid, internal auditory canal, and middle ear cleft (in that order). Although the presentation depends on the site of temporal bone involved, commonly they present with hearing loss, facial paralysis, otorrhea, otalgia, vertigo, and aural mass. However, these clinical features are not pathognomonic for temporal bone metastasis making the diagnosis quite challenging.

Incidence of facial paralysis in the presence of temporal bone metastases has been reported to be between 14.9 % - 50%.

Case report: Unusual clinical presentation in any patient can be challenging. Continuous exploration of diagnosis, ruling out common conditions and monitoring the natural course of disease will help to get the diagnosis in a timely manner.

We present complex patient with unusual presentation in terminally ill patient. Management was challenging for several reasons in her situation. When no other cause was found, it was worth taking the risk for patient to go through the surgery, as that resulted in much better quality of life at final months of her life.

Keywords: temporal bone, metastatic disease, facial palsy, CT mastoid, breast cancer

Learning: Despite clinical and radiological findings., trusting patient symptoms and following through the disease process is key even in current clinical practice.

2024.BNAC.RI.033

Is there a role for VTE prophylaxis for ED patients.

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Background: Venous Thromboembolism (VTE) prophylaxis is vital for any patient who are having medical treatment and are at elevated risk of thrombosis or bleeding. NICE guidelines cover VTE prophylaxis for those patients who are admitted to medical wards or surgical patients who are having surgery.

No A&E patient should wait for more than 4 hours to be assessed by medical professional and have treatment along with risk assessment. As more A&E units are having problems with patient waiting for longer period for assessment, or once assessed., to get admitted to the ward where appropriate risk assessment or VTE prophylaxis is initiated.

We undertook QIP to assess if there is any VTE prophylaxis in our ED department. The results were analysed comparing with current NICE guidelines, VTE prophylaxis recommended by Royal College of Emergency medicine and surgical patient VTE prophylaxis.

Results: there is no current any VTE prophylaxis currently used. the results and risk were assessed to each of 3 commonly used guidelines. We will recommend our findings to the trust and implement the changes in coming months. once policy is introduced, we will re-audit to see the effect of this policy.

Conclusion: It should be mandatory to have some VTE risk assessment and prophylaxis guidelines in every ED to reduce risk of thrombo-embolic episodes or increased morbidity in frail sick patients.

Keywords: VTE, guidelines, bleeding, risk assessment. anticoagulant

Learning: There is an opportunity for VTE risk reduction for elderly or frail patients attending while waiting in ED.

2024.BNAC.RI.034

Frailty Fracture Care: QIP

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Osteoporosis, a disease characterised by low bone mass and structural deterioration, often remains undiagnosed until a fragility fracture occurs. Bisphosphonates are used to treat osteoporosis, reducing fracture risk in patients with low bone mineral density or a previous fracture.

The objectives of the audit included ensuring that patients received bone health medication before discharge to prevent refracture.

We evaluated patients who received prescribed bone health medications following a neck of femur or periprosthetic femoral fracture, compared inpatient medication administration to previous audit cycles, and determined the percentage receiving Zoledronic acid and Denosumab. We also assessed the

documentation of reasons for non-administration of these medications as inpatients.

According to NOGG guidelines, treatment should be initiated immediately to minimise refracture risk, with antiresorptive therapy like oral bisphosphonates or intravenous zoledronate. Alternatives should be considered if these are not tolerated.

The study was conducted with a population of 50 patients over 60 years of age with neck of femur fractures, admitted between June and July 2024.

In the first cycle, 31 patients received parenteral medication and 19 received oral medication; in the second cycle, 22 received parenteral and 24 received oral. Referral to the older persons clinic dropped from 52% in the first cycle to 22% in the second. Parenteral bone health medication prescription increased from 48% to 77% between cycles. Zoledronic acid was prescribed to 67% of patients in the first cycle and 77% in the second, with the remainder receiving Denosumab.

Reaudit results indicate significant improvement in inpatient bisphosphonate administration, reducing waiting time, ensuring 100% compliance, and alleviating the workload on older persons clinics.

Keywords: Osteoporosis, Frailty fracture, Prevent refracture

Learning: Importance of early intervention - By administering medication particularly immediately after a fracture, can prevent refracture which shows the importance the need of for timely management in better patient outcome.

2024.BNAC.035

Has MR Angiogram Replaced Digital Subtraction Angiography in Demonstrating Angio-architecture of Arteriovenous Malformation? ^[OBJ]

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Background: In brain arteriovenous malformations (AVM) there is mismatched communication between arteries and veins, causing a nidus between them. This systematic review explores whether Magnetic Resonance Angiogram (MRA) can be used as a diagnostic imaging modality instead of a Digital Subtraction Angiogram (DSA) scan.

Aim: To evaluate MRA as a diagnostic alternative to DSA for AVMs.

Methods: Utilising PubMed, Cochrane, and Google Scholar, as well as (PRISMA) guidelines for article selection, a literature search was conducted over the past five years.


Results: Eleven studies were included with most of the articles suggesting a potential for consideration. Arterial Spin Labelling vs Time of Flight scans was a comparison study, in addition to the study on pc-ASL proved its high sensitivity in comparison with DSA scans. Other studies included Q-MRA measuring the blood flow and Susceptibility Weight Imaging modality. Although promising, DSA scans have diagnostic superiority. In addition, articles discussed follow-up MRA scans after surgery.

Discussion: This systematic review underscores that while advanced MR techniques like 7T imaging and silent MRA demonstrate potential in visualizing AVM architecture, DSA remains the gold standard due to its superior spatial resolution and dynamic detail. Although silent MRA and pc-ASL offer improved sensitivity and specificity for AVM detection, they still fall short in capturing the intricate vascular details. Importantly, consulting a neurovascular specialist is essential to determine the most appropriate imaging modality based on the patient's unique AVM characteristics and clinical context.

Conclusion: Overall, DSA remains the gold standard due to its superior spatial resolution and hemodynamic properties, these are the key limitations of MR studies. ("A Systematic Review Comparing Digital Subtraction Angiogram With Magnetic Resonance Angiogram Studies in Demonstrating the Angioarchitecture of Cerebral Arteriovenous Malformations") MRA have demonstrated their ability to reproduce high-

quality diagnostic images for AVM angioarchitecture, however, coupled with their limitations, few studies with large sample size over longer periods have been conducted and we urge more research into it.

Keywords: Digital subtraction angiography, Magnetic resonance Angiogram, Arteriovenous malformations, diagnostic imaging, Neuroradiology

Learning: While newer MRA techniques like ASL and Q-MRA are promising, they still face limitations in accuracy and resolution. **Diagnostic Superiority:** DSA remains the gold standard for AVM imaging due to its superior spatial resolution and ability to capture intricate hemodynamic details that MRA currently cannot fully match. 

2024.BNAC.RI.036

Developing a Framework for VTE Risk Assessment in Vascular Surgery In-patients

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Background: The risk of venous thromboembolism (VTE) increases in the post-operative period and in patients with known vascular risk factors, and can lead to increased morbidity, length of hospital stays and mortality. Despite the existence of NICE guidelines to help mitigate these risks, we noticed a shortfall in vascular surgery in-patients receiving timely VTE risk assessment. We conducted a quality improvement project (QIP) with the aim of increasing the number of vascular surgeries in patients receiving timely VTE risk assessment.

Aim: 100% of patients admitted under vascular surgery are assessed to identify the risk of VTE and bleeding: Within 24 hours of admission; Using a tool published by a national UK body, professional network, or peer-reviewed journal.

Design: The first audit cycle was a 5-day prospective audit of all vascular surgery inpatients. Our intervention involved adding a VTE section to the in-patient handover list. The second cycle, a 5-day retrospective audit, was run 17 days following the implementation of the intervention.

Methods: Vascular surgery in-patients were defined by their presence on the daily handover list. These criteria identified 20 patients and 23 patients eligible for the first and second audit cycle, respectively. Eligible patients were screened using the online system Vital Pac to identify whether an online VTE assessment had been completed within 24 hours of admission. Data were captured and pseudo-anonymised using a Microsoft Excel spreadsheet.

Results: The first audit cycle demonstrated that 30% of vascular surgery in-patients, compared to 57% in the second audit cycle (post-intervention), had a VTE risk assessment performed within 24 hours of admission.

Conclusion: These results demonstrate a successful framework for improving compliance with timely VTE risk assessment for vascular surgery in-patients. The study highlights the role of the handover list as an effective aide-memoire for completing VTE risk assessments.

Keywords: Venous-thromboembolism, Risk assessment, Vascular surgery

Learning: In-patient handover list can be effective in prompting VTE risk assessment.

2024.BNAC.037

Efficiency, Excellence, and Empathy: An Artificial Intelligence Audit on Same Day Emergency Care Unit Dynamics, by Hospital AI Team

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Background and Aim: The Ambulatory Emergency Care (AEC)/Same Day Emergency Care (SDEC) model is an innovative approach designed to minimize delays in patient care, allowing for same-day treatment as an alternative to hospital admission. This study explores the feasibility and potential for optimizing SDEC services using AI-based triage and patient monitoring.


Design and Methods: A retrospective cohort study was conducted on patients who visited the Surgical SDEC from April 7, 2024, to May 19, 2024. Various data points—including wait times, blood results, NEWS scores, imaging requests,

final diagnoses, and outcomes—were collected and analysed. This anonymized data was used to train an in-house AI model, Aignosis, aimed at improving triage and monitoring efficiency.

Results: Of the 576 patients who presented to SDEC during the study period, the average wait time to see a clinician was 2 hours and 56 minutes, with a maximum wait time of 6 hours and 50 minutes. Out of these, 139 patients (24%) were admitted, and 64 patients (11%) required surgery. Eighteen (3%) patients had a NEWS score of 5 or above, indicating critical illness. A total of 123 CT scans were requested, 12 of which were against guidelines. Notably, no priority calls were made during this study period. The Aignosis model achieved 100% accuracy in clinical prioritization, matching the performance of surgical consultants.

Discussion and Conclusion: While SDEC is intended as a day care service, it is increasingly functioning like a minor emergency department, with significant wait times and a substantial number of surgical emergencies and admissions. To enhance efficiency without imposing additional financial burden on the NHS, the implementation of advanced AI models like Aignosis is crucial.

Keywords: SDEC, Same Day Emergency Care, AEC, Artificial Intelligence, Aignosis,

Learning: AI-Driven Efficiency in SDEC: The study demonstrates that implementing an AI model like Aignosis can significantly enhance the efficiency of Same Day Emergency Care (SDEC) units by accurately prioritising clinical cases, potentially reducing wait times and improving patient outcomes without additional financial strain on the NHS. 

2024.BNAC.RI.038

PTH-Independent Hypercalcaemia with Mediastinal Lymphadenopathy and Langerhans Giant Cells: Suspected Sarcoidosis

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Background: Hypercalcaemia is a common finding in hospitalised patients, often linked to

primary hyperparathyroidism or malignancy. However, when parathyroid hormone (PTH) is low or normal, alternative causes such as granulomatous diseases, including sarcoidosis, must be considered. Sarcoidosis is a systemic inflammatory disease characterized by non-caseating granulomas and can involve multiple organs, including the lungs, lymph nodes, and liver. This case illustrates the diagnostic challenges in a patient with PTH-independent hypercalcemia and mediastinal lymphadenopathy.

Investigations: The patient underwent extensive investigations to determine the cause of his hypercalcemia and deranged LFTs. Blood tests revealed low PTH, normal vitamin D, and normal prostate-specific antigen (PSA). A myeloma screen, liver function tests, and serum ACE levels were also performed, alongside a liver ultrasound and HIV screening.

A repeat CT thorax on June 13, 2024, showed persistently enlarged mediastinal lymph nodes with a reduction in the right lower lobe consolidation, suggesting resolving infection. However, significant coronary calcification was also noted.

A positron emission tomography (PET) scan performed at a tertiary care centre identified mediastinal, hilar, and right supraclavicular lymphadenopathy, suggesting either sarcoidosis or lymphoma. A subsequent ultrasound-guided biopsy of the lymph nodes showed non-caseating granulomas with Langerhans giant cells, confirming the suspicion of sarcoidosis.

Discussion: This case underscores the importance of considering granulomatous diseases in the differential diagnosis of PTH-independent hypercalcemia. Sarcoidosis, while often asymptomatic, can present with systemic symptoms and hypercalcemia due to increased production of 1,25-dihydroxyvitamin D by macrophages within granulomas. The management of sarcoidosis-related hypercalcemia typically involves corticosteroids; however, in this case, the patient's clinical presentation necessitated a multidisciplinary approach.

Keywords: sarcoidosis, PTH independent Hypercalcemia

Learning: PTH-independent hypercalcemia should prompt evaluation for granulomatous

diseases, particularly in patients with mediastinal lymphadenopathy.

2024.BNAC.RI.039

Group Consultation for Paediatric Melatonin Reviews - Potential Solution to Reduce Waiting Times

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Background: Sleep disorders are commonly seen in children with neurodevelopmental problems. There is an increased incidence of neurodevelopmental disorders in children with autism (approximately 1 in 100). Annual Melatonin reviews are significantly delayed due to increased demand in the service. Children continue to take Melatonin for years. In many organisations no formal annual review takes place. Commissioned first line interventions for sleep disorders with behavioural modifications in many child health centres in the UK are lacking. There is no shared care protocol for Melatonin in some areas for which a prescription responsibility cannot be shared with the GP. This makes it more challenging to an already stretched community paediatric services where new patients are waiting for an assessment anywhere from 1 to 5 years.

Potential solution: Group consultations.

Group clinics are an alternative way to offer planned appointments for people with similar clinical problems, with carers able to attend if they wish. Biometrics measurements and medication reviews can be done. This is popular in adult care but not much in use in paediatric care.

Principles: Group consultation suits well for common chronic conditions (e.g. Sleep management with Melatonin in children). Consultations are not suitable for the conditions that require only self-care or complex conditions.

NHS England personalised care centre encourages the organisations to take it forward as a potential solution to the current demands after mitigating the risks and participation from the parent, carer, and young people's voice at the conception stage. It is envisaged that a systems approach to embedding group

consultations in the NHS is the way forward to meet demand and capacity and is a cost neutral / cost effective option which suits well to the NHS financial burden.

Advantages of group consultation

Most children can be reviewed in a timely manner. An opportunity to empower and engage families proactively who will be able to wean off from Melatonin or move on to a lower dose benefitting the cost savings to the organisation and most importantly minimising unknown long term side effects of Melatonin. Clinician's time is effectively utilised. For example, 10 patients can be seen in 1 hour, whereas currently only 6 families are reviewed in 4 hours, with a telephone review. Shared learning between parents feel that they are not alone. Being connected to the community and learning in group is effective and combats loneliness, isolation, and exclusion. There is an opportunity to collaborate with sleep charities and supportive groups to engage directly with the families for more information and support.

Summary

Group consultations will help to reduce waiting times and improve the quality of patient care. Peer to peer support (Parent to parent support) is effective and empowers parents to participate actively. Savings can be made on medication budget. Unknown long term side effects can be avoided.

Keywords: Group Consultations, Melatonin Reviews, Sleep disorders.

2024.BNAC.RI.040

Cost Awareness of Surgical Consumables Amongst Trauma and Orthopaedic (T&O) Practitioners

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Background: The impact of the current economic and environmental challenges, both nationally and globally, is a strain on limited healthcare resources. This has led to scrutiny of high expenditure areas, including consumables. Frontline clinician's knowledge of costs is sparse, complicated by the absence of the availability of cost information in publicly funded services. We conducted this survey to assess cost-awareness within the T&O departmental staff.

Methods: A questionnaire was digitally distributed to T&O staff in the East Kent Hospitals Trust. This included demographic data and to make estimations of the cost of 10 specialty specific items.

Results: Only 7.1% of all estimates were deemed 'accurate'. No correlation was seen between years of experience and the accuracy of estimates. 'Kenalog 1ml ampoule' had the highest accuracy of estimation across all responses (13%), whilst both 'kirchner wires' and '3.2 drill bit' had the lowest accuracy (4% each). 'Velcro wrist splint' was the item which was the most overestimated (median estimate/actual cost = 1.57), with only 2 of the 10 items being overestimated. The most underestimated item was 'tourniquet cuffs' (median estimate/actual cost = 0.16).

Conclusion: There is a paucity of knowledge surrounding the cost of specialist T&O consumables. Limitations included the sample size (98 respondents) and geographical area (East Kent Hospitals Trust). This study shows that there is need for further research into this topic, with long term outcomes which may be beneficial both economically and environmentally.

Keywords: Cost-awareness, surgical consumables

2024.BNAC.RI.041

Cost Awareness of Surgical Consumables in ENT department Staff

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Aims: Studies suggest that practitioners lack knowledge on cost of consumables and do not appreciate the financial consequences of waste. We aimed to investigate the awareness of cost of consumables and waste amongst ENT practitioners.

Methods: An online questionnaire, requiring cost estimations for 20 consumable items, was distributed to London ENT departments. Each item's actual cost was compared with the average, median and interquartile range of the estimated price. An estimate was deemed 'correct' if it was within 20% of the actual price.

Results: 11% of all estimations were 'correct'. There was no correlation between job role and cost-estimation accuracy. The most accurately estimated item was 'fenestrated sterile drape' (24%), the least was '1L bag of IV normal saline' and 'package of sterile sponges' (0%).

Conclusions: We found poor cost appreciation of consumables amongst ENT surgeons. This could serve as a catalyst for the inclusion of health economics in specialty training curricula,

Keywords: improving cost-awareness, consumables, cost-awareness, ear nose throat, education

2024.BNAC.RI.042

Awareness of Cost of Consumables Amongst UK Medical Students

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Background: With increasing financial difficulties for the NHS, clinician's awareness of the cost of consumable items utilised is vital. Despite this, clinician's cost-awareness, and exposure to health economics amongst students is limited. We hence undertook this survey to assess cost awareness amongst medical students.

Aim and Design: An online questionnaire was distributed to London medical students. Participants were asked their demographic data and to estimate the cost of 10 consumable items. Each item's actual cost was compared with the average, median and interquartile range of the estimated price. An estimate was deemed 'correct' if it was within 20% of the actual price.

Results: Only 10% of estimates were 'correct'. There was no correlation between medical school or academic year and accuracy of cost-estimation. The most accurately estimated item cost was the '10ml syringe' (19.6%), the least was the '1 litre bag of intravenous normal saline' (0.50%). The most overestimated item cost was the 'vial of 1.2g intravenous co-amoxiclav' (median estimate/actual cost = 9.43), the 'pair of standard sterile surgical gloves' was the only underestimated item cost (median estimate/actual cost = 0.97).

Conclusion: We found a limited understanding of the cost of consumables amongst medical students. Whilst a lack of year 6 students and the London geographic limited this study, we believe this is the first large-scale survey assessing the cost of consumables amongst UK students. By providing a benchmark of current knowledge, this survey could serve as a catalyst for the inclusion of health economics in medical school curricula, improving cost-awareness.

Keywords: cost-awareness, consumables medical students.

2024.BNAC.RI.043

A Survey of Medical Students' Attitudes Towards Sustainable Healthcare

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Background: As the climate crisis becomes prevalent, so does emphasis on environmental sustainability. The healthcare sector (a significant contributor to environmental impact) is particularly of interest: sustainable healthcare awareness within the NHS is crucial. However, few medical schools include environmental teaching in their curricula.

Aim: We undertook this survey to assess environmental awareness and perspectives amongst medical students.

Method: An online questionnaire was distributed to London medical students. Participants were asked demographic data, questions concerning the environmental impact of products and practices in the NHS, and methods to reduce healthcare's environmental impact.

Results: 87% of students stated that healthcare's environmental impact is of concern to them, 97% agreed that the environmental impact of products should be considered during development. 65% agreed that the environmental impact of a product should influence its use, but 95% agreed that a device being recyclable/reusable would influence their practice. Students felt the factor most negatively impacting the environmental burden of healthcare was 'disposable plastic items', in 57% of responses, and 'general waste' in 44%.

Conclusions: Most medical students found healthcare's environmental impact concerning,

expressing a desire to choose the most sustainable options. Whilst the distribution of academic year and the London demographic limited this study, we believe it is the first of its kind assessing medical student's attitudes towards the environmental impact of healthcare. With this initial benchmark, we hope future surveys will assess and improve the environmental awareness of doctors in training, as well as the inclusion of environmental teaching in medical school.

Keywords: environment, education, medical students, sustainability, university,

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Provision of Menstrual Period Products for Staff in NHS Hospitals

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Let us talk about periods. 80% of the NHS workforce identify as female [1], and a substantial proportion of these women find themselves caught short at work when they have their menstrual periods starting without warning, under circumstances of innate irregularity to cycles, while peri-menopausal and in some medical or endocrine conditions.[2] This may lead to discomfort, stress, and embarrassment. Work constraints such as tight schedules or onerous clinical duties may prevent staff from having the opportunity to access menstrual period products when required. [3]

The paediatric department initiated a pilot scheme whereby sanitary items were freely available to staff in toilets. Over forty tampons and pads were placed in staff toilets, along with a digital code which was linked to a questionnaire. Anonymous feedback was collected and demonstrated positive feedback. The results of this pilot were presented along with a funding proposal to implement across the organisation. A start-up donation of around £3,000 would allow 200 staff toilets to be equipped with sanitary products. The Trust would employ "champions" to restock the toilets, and they would be maintained on a "take what you need and donate when you can" basis. Alleviating the problem of access to period products has the potential to make significant

difference to the wellbeing and dignity of thousands of female NHS staff.

We urge all healthcare providers to consider this simple effective change to support their staff to ensure equality for all.

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The Harm Review Service for Patients Awaiting Elective Orthopaedic Foot and Ankle Surgery for More Than 52 Weeks

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Background: The COVID-19 pandemic has resulted in significantly increased waiting times for elective surgical procedures in orthopaedic surgery. Patients waiting for over 52 weeks were offered a consultant-led 'harm review'.

The aim of this study was to objectively assess the impact of this service on the field of foot and ankle surgery.

Methods: Data from harm review clinics at a District General Hospital in 2021 relating to patients awaiting elective foot and ankle procedures for more than 52 weeks, were assessed. Clinical data points such as change in diagnosis, need for further investigations, and removal from the waiting list were reviewed. The effect of the waiting time on patients' mental health and their perception of the service was assessed as well.

Results: 72 patients were assessed. It was noted that 25% of patients found their symptoms had worsened while 66.1% perceived them to be unchanged. Twelve patients (16.9%) were sent for updated investigations. Twenty-one patients (29.5%) were taken off the waiting lists for several reasons, the most common being other pressing health concerns; 9% of patients affirmed that the wait for surgery had a significant negative impact on their mental health.

Conclusion: This study concluded that the harm review service is a useful programme as it helps

guide changes in the diagnosis and clinical picture. The service is found to be valuable by most patients, and its impact on the service specialities and multiple centres could be further assessed to draw broad conclusions,

Keywords: Harm, COVID-19, trauma, orthopaedics,

Learning: Delays to elective orthopaedic foot and pandemic negatively impacted patients' mental and physical wellbeing. The use of the harm review was effective in guiding clinical assessment and management of patients.

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Lemierre's Syndrome: A Forgotten Disease

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Introduction: Lemierre's syndrome is a rare and potentially life-threatening infective state of thrombophlebitis of the internal jugular vein. It normally results from an oropharyngeal infection and affects young otherwise healthy adults. An incidence is estimated at 3.6 cases per million per year, thereby often making it rare and overlooked in the diagnosis.

Case Presentation:

A 31-year-old female with a 4-month history of progressive left-sided neck swelling and pain after an episode of sore throat and cough, associated with blood streaks in the sputum. On clinical examination, the patient had left-sided neck swelling and tenderness, restricted neck movements, and the left arm was adducted. Ultrasound of the neck revealed a thrombus in the left jugular vein, confirmed on CT venography. CECT of the chest revealed bilateral lung consolidations, due to septic emboli. Blood cultures were sterile, probably because the patient had already received antibiotics.

The diagnosis of Lemierre's syndrome was then made based on the clinical presentation and imaging findings. Management included prolonged antibiotic therapy and low molecular weight heparin for anticoagulation.

Conclusion: This case underlines the need to consider the diagnosis of Lemierre's syndrome in cases of persistent neck pain and swelling after a recent oropharyngeal infection among young adults. Delayed diagnosis occurs because of the rarity of this disease, which can result in serious complications. A high degree of clinical suspicion, appropriate imaging studies, and early initiation of antibiotic therapy are important for optimal outcomes. Traditionally managed with antibiotics alone, the role for anticoagulation remains controversial but was performed here. Clinicians need a high index of suspicion to ensure timely diagnosis and management of this, often considered "forgotten," disease.

Keywords: Lemierre syndrome, Internal jugular vein thrombosis, sore throat, persistent neck swelling, antibiotics.

Learning points: Interdisciplinary Approach: The case report highlights the need for collaboration between the clinicians, radiologists, and microbiologists to manage a complex and rare case effectively.

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Clinical and Coronary Angiographic Insights into Acute ST-Elevation Myocardial Infarction in Young Patients: A Study from a Tertiary Care Cardiac ICU

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Background: This study focuses on the significant impact of premature coronary artery disease (PCAD) on public health, as it is linked with high rates of recurrent ischaemia and mortality. The research specifically examines the risk factors, clinical presentation, angiographic severity, and treatment options for noticeably young individuals (≤ 45 years) experiencing their first ST elevation acute myocardial infarction (STEMI).

Aim: To determine the risk factors, Clinical Presentation, angiographic severity, and treatment options for young individuals with STEMI.

Design and Methodology: This cross-sectional study involved 100 consecutive patients

diagnosed with ST elevation myocardial infarction (STEMI) over six months in the cardiology department.

Results: With a mean age of 42.5 years, the research had 100 patients, of which 9% were under 25, 24% were between 26 and 35, and 67% were over 36. Of these, 89% were male. The following risk variables were found obstructive coronary artery disease (CAD), smoking, being overweight, diabetes, hypertension, chest discomfort, and syncope. In 99% of instances, the most prevalent symptom was chest discomfort. Most often impacted was the left anterior descending (LAD) artery (24%), then the right coronary artery (14%). Fifty percent of the patients had PCI, with fifteen percent undergoing elective PCI, ten percent pharmaco-invasive PCI, and twenty percent receiving primary PCI. In 8% of cases, coronary artery bypass grafting (CABG) was enquired. Furthermore, 40% were under medical care, and 32% had recanalized and normal coronaries. No mortality was recorded in this study.

Discussion and conclusion: Acute myocardial infarction (AMI) is most frequently seen in young adult males, and the most common risk factor is smoking. The most common clinical manifestation, anterior wall myocardial infarction (AWMI), was caused by the main source of involvement, the LAD artery.

Keywords: Public health, clinical presentation, angiography, ST-elevation myocardial infarction (STEMI), coronary artery disease (CAD),

Learning: High prevalence of risk factors: The study identified multiple significant risk factors for premature coronary artery disease in young individuals, including obstructive coronary artery disease, smoking obesity, diabetes, and hypertension, emphasising the need for early intervention and lifestyle modification in this demographic.

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Fulminant Leukocytoclastic Vasculitis with gangrene with mild COVID-19

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COVID-19 has been known to have multiple systemic manifestations, with rheumatological COVID-19, caused by SARS-CoV-2, is associated with a myriad of systemic manifestations, with rheumatological and cutaneous presentations being relatively uncommon.

We present a case of a middle-aged Caucasian woman who developed a diffuse, bilateral rash that progressively spread across her body, culminating in gangrenous lesions. After ruling out potential thromboembolic events and other vasculitides in the setting of a positive SARS-CoV-2 reverse transcription–polymerase chain reaction without evident respiratory symptoms, and with a confirmatory skin biopsy demonstrating leukocytoclastic vasculitis (LCV), the patient was diagnosed with COVID-19-associated LCV. Despite management, the extensive gangrenous progression necessitated bilateral below-knee amputation. While mild vasculitic presentations have been reported in COVID-19, progression to full-blown gangrenous lesions is an exceedingly rare occurrence.

This case highlights the potential for severe and devastating cutaneous manifestations associated with SARS-CoV-2 infection, underscoring the need for continued vigilance and further elucidation of the pathogenic mechanisms involved in COVID-19-related vasculopathies.

Keywords: COVID-19, gangrenous lesions, leukocytoclastic vasculitis, rheumatological disorder, amputation,

Learning: Diagnostic Challenge: The case emphasises the necessity to differentiate COVID-19 associated symptoms from other conditions, like thromboembolic events and vasculitis.

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Treatment of Distal Radius Fractures in Adults

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Background: Fractures of distal radius remains the most common fractures approximately one sixth of all fractures treated in emergency departments. The outcome of these fractures is not uniformly good. There are many treatment modalities available ranging from non-operative to various surgical procedure i.e.. (1) closed reduction + Pinning, (2) closed reduction + external fixator, (3) close reduction with combination of either pinning or external fixator or (4) open reduction with plating or (5) open reduction with combination of plating and external fixation. For plating there are number of options. With availability of so many treatment options for a common fracture having impact on hand functioning, it is important to study the results of different modalities in our conditions.

Aim: To study the incidence, fracture pattern and functional outcomes of distal end radius fractures treated with non-surgical and surgical methods

Methods: An observational study with prospective analysis of patients presenting with post traumatic fractures of distal end radius (closed/open) who have given consent for conservative or surgical intervention. Fractures classified following AO principles: a) extra articular²) partially articular, and c) Articular & Frykman's classifications.

Results: In our series of 150 patients, 100 were male & 50 female. Most of the patients were between 18-50 yrs. (minimum 18, maximum 80 & mean 40.35 years). Most commonly the mode of injury, wrist involvement & fracture type were RTA (45%), Right side (51.25%) & Frykmans III (41.7%) respectively.

Excellent results were seen in 47.5% in surgical group & 30% in conservative group.

Conclusion: Surgical management was better than conservative in the treatment of comminuted fractures of distal end of radius. Treatment should be individualised to a particular fracture.

Keywords: Distal Radius, AO classification, K wire, Volar Plating,

Learning: Grip strength and union time was better in operative patients.

2024.BNAC.RI.050**RAG Rating for Anaesthetic Staffing in a District General Hospital**

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Background: Royal College of Anaesthetists guidelines recommend departments should consider flexible daily rota so that there are more anaesthetists working in a clinical area, such as a theatre suite, than there are procedures being carried out to ensure that this cover is always immediately available. Inadequate staffing for elective operations affects smooth running of elective theatres; contributes to unsafe practice; reduces quality of service and have wellbeing implications such as burnout.

Methods: A popular project management method was adopted for providing quick, visible status reports based on traffic lights system. A retrospective survey was conducted of anaesthetic staffing in operation theatre suite in North Middlesex Hospital for 3 months for elective surgeries in main theatres and labour-suite theatres.

Results: Anaesthetic theatre staffing was in the amber zone 65% of the time, 13% in red zone, and only 30% in the Green. To avoid red rating, locum staff were engaged appropriately.

Conclusion: Amber staffing may impact not only on care for patients but also on wellbeing of anaesthetists. Measures like RAG rating and reporting of high-risk scenarios, may assist in the support for the long-term cost-effective solutions.

Keywords: RAG Rating; elective surgeries; Anaesthetists Staffing; burnout; patient safety

2024.BNAC.RI.051**Plasma Exchange in the Management of Alcohol-induced Acute on Chronic Liver Failure: A Case Report**

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Background: Acute-on-Chronic Liver Failure (ACLF) is a severe form of chronic liver disease associated with multi-system organ dysfunction and high short-term mortality. Alcohol is found to be the commonest aetiology of ACLF with a mortality of 42% [1]. Of the therapeutic measures available, high volume plasma exchange has been shown to improve prognosis [2]. We present a case of alcohol related ACLF treated with high volume plasma exchange.

Case

A 32-year-old male with alcohol related liver disease was admitted with acute decompensation in the form of acute kidney injury, hepatic encephalopathy and coagulopathy precipitated by alcoholic hepatitis. A diagnosis of alcohol related ACLF was made. Despite standard medical treatment consisting of measures to prevent infection, appropriate nutrition and other supportive measures, the inflammatory state did not improve. After a multi-disciplinary discussion, high-volume plasma exchange was planned, and 5 cycles were completed. This improved both the clinical status and the biochemical milieu resulting in improved survival.

Discussion: ACLF can be described using the Predisposition, Injury, Response, Organ Failure (PIRO) concept [3]. Systemic inflammation plays a key role in the pathogenesis of liver failure and elevated levels of cytokines that are released into circulation lead to hepatic and extrahepatic organ failure. The phase of excess cytokines is followed by immune exhaustion predisposing the patients to sepsis and multiorgan failure, which is the main attributor of high mortality in ACLF.

In resource limited settings where liver transplant is not available; plasma exchange (PLEX) is an emerging modality where biochemical improvement has been seen with improved survival compared to standard medical therapy [4]. Plasma exchange eliminates these accumulated toxins in ACLF patients aiding in recovery of the failing liver by creating a milieu suitable for liver regeneration. In conclusion, PLEX could be a viable treatment option in the management of alcohol related

ACLF.

Keywords: Acute on Chronic Liver Failure (ACLF), Chronic Liver Disease, Alcohol, Plasma exchange, multi-organ failure.

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Cannabis induced Heart Block- A Case Report

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Background: Cannabis is a well-known psychoactive substance known for its recreational as well as medicinal purpose. When used for recreational purposes they are used through inhalational route. It is one of the most common used drugs in the UK. In 2022/23 in England and Wales, 7.6 percent had taken cannabis in the previous 12 months. When inhaled, the psychoactive components enter blood stream and reach the brain where they bind with cannabinoid receptors 1 and 2. The bioavailability of inhaled cannabis is greater (11% to 45 %) compared to the oral route (6 %).

Case Report:

We present a 50-year-old male who regularly smokes cannabis and was due for an elective surgery. On evaluation he was found to have abnormal ECG and was referred to us. Patient was asymptomatic on presentation with no relevant past medical history or family history of cardiac disease or sudden death.

His observations were within normal range. His ECG showed evidence of Mobitz type 1 heart block. His clinical examination was unremarkable. His routine blood tests were normal including all electrolytes and thyroid function.

He was considered to have a low-risk asymptomatic dysrhythmia, and he was discharged with advice to maintain abstinence from any type of cannabis. When followed-up in 48 hours he remained well, and his repeat ECG

showed resolution of the heart block. He was advised to maintain abstinence from cannabis and was discharged with a further 24-hour ecg monitor.

Conclusion: Cannabis has been reported to cause arrhythmias including heart blocks. The half-life of the most common inhaled drug THC is around 72 hours. Hence it might be useful to repeat the ECGs after a certain number of days depending upon how long they have been using the drug.,

Keywords: Cannabis-induced heart block

Learning: Cannabinoids may be an under recognised as a cause of bradyarrhythmia, manageable by abstinence.

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MRI Manifestations of Subacute Combined Degeneration (SACD) of the Spinal Cord due to Recreational Nitrous Oxide Use: A case report

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Background: Nitrous oxide is a medical anaesthetic misused recreationally. N2O induces neurological disorders through interference with vitamin B12 function, leading to peripheral neuropathy, sub-acute combined degeneration, and cognitive impairments. A unique challenge in diagnosing nitrous oxide-related neurological issues is the concept of "functional vitamin B12 deficiency" where blood levels may appear normal despite underlying tissue deficiency. Imaging is therefore crucial for

diagnosis with Typical MRI findings.

Our report highlights the biochemical and imaging findings resulted from functional vitamin B12 deficiency secondary to N2O abuse. Presents an important variation of N2O poisoning, detailing the findings, diagnostic approach, clinical course, and prognosis.

Case Report

23-year-old man presented with numbness in arms and legs and difficulty walking. He reported using nitrous oxide recreationally for two years. No significant past medical history was reported. He had a wide based gait, positive Romberg's, bilaterally positive Babinski. Lower limbs showed spastic paraparesis, weak dorsiflexion, plantar flexion, and eversion of the feet. Ankle jerk reduced and knee jerk exaggerated. Sensory examination revealed sensory ataxia, reduced posterior column sensations extending from foot to mid foot in bilateral lower limbs with intact spinothalamic sensations.

He had normal Vitamin B12 & red cell folate levels, high Methylmalonic acid & Homocysteine levels. MRI spine showed diffuse hyper-intensity in upper cervical spine.

Diagnosis was Subacute combined degeneration of the spinal cord caused by functional vitamin B12 deficiency secondary to nitrous oxide abuse and treatment was initiated with parenteral Hydroxocobalamin.

Awareness of existing cases can be used to identify potential cases and raise awareness among members at risk of substance abuse. Imaging plays a key role in diagnosis and typical MRI findings of inverted V-shaped T2WI hyper-intense signal involving both dorsal columns of the cervicothoracic spinal cord suggests N2O myelopathy and treatment is cessation of N2O use together with parenteral administration of vitamin B12.

Keywords: Nitrous Oxide Poisoning, SACD of Cord, Functional B12 deficiency, MRI findings

Learning: Imaging plays a key role in diagnosis of Subacute combined degeneration of the spinal cord caused by nitrous oxide poisoning and typical MRI findings include inverted V-

shaped T2WI hyper-intensity in upper cervical spine.

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Paediatric Radiology MDT Meeting Documentation Standards: QIP

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Background: The Royal College of Radiology (RCR) guidelines on documentation standards for multi-disciplinary team (MDT) meetings, to ensure that commentary on any reviewed imaging, and rationale for subsequent management decisions, is clearly recorded. There were concerns amongst paediatric consultants that no formal paediatric radiology MDT documentation standards were being utilised, potentially jeopardising patient safety.

Aim: Assess and improve compliance with abridged RCR guidelines for adequate documentation in MDT meetings, to document for each discussed case: reviewing radiologist, presenting paediatrician, outcome of discussion.

Design: Prospective (pre-intervention), then retrospective clinical audit (post-intervention) to close loop.

Methods: Two meetings were attended, and ten consecutive MDT case discussions observed for baseline documentation standards. Analysis was performed to find causes for compliance with standards. An electronic MDT proforma was created with tick boxes and automated headings. A House officer was nominated to compile and maintain MDT patient list, and document during meetings every week to ensure continuity. Retrospective analysis was conducted of MDT notes to assess compliance after intervention.

Results: Compliance pre-intervention was 0% (0/10). Following intervention, significant improvement was observed for the 7 weekly meetings after intervention, compliance up to 68.8% (33/48), 100% of cases having the reviewing radiologist's name documented, 87.5% the presenting paediatrician, 70.9% meeting outcome.

Discussion: Our intervention improved documentation of MDT discussions and the professionals involved which is vital in ensuring governance. The next step was to document discussion outcomes, even if the consensus were to not alter current management.

Conclusion: A streamlined MDT proforma and specifically appointed MDT scribe significantly improved documentation standards in paediatric radiology MDT meetings.

Keywords: MDT Radiology Paediatric Neonatology Documentation

Learning: RCR guidelines for documentation standards in MDT can be extrapolated to any MDT meeting where radiologists discuss cases with clinicians. This can improve documentation standards, aiding patient safety.

Results: Overall, 8.44% of responses were 'correct', with no correlation between job title or experience and accuracy of cost estimation. The item most accurately estimated was the '3-0 Vicryl (non-rapide) suture' (16.90%), the least was the 'ultrasound AquaUltra clear gel- 260 grams' (0.00%). The most overestimated item was the '15-blade scalpel' (median estimate/actual cost = 20), the most underestimated item was the 'Amplatz extra stiff 80cm wire' (median estimate/actual cost = 0.47).

Discussion & Conclusions: We demonstrated severely limited cost-awareness amongst radiology healthcare staff. By providing an initial benchmark for the current cost-awareness amongst radiology staff, we hope that a national audit and relevant education may improve cost-awareness of consumables amongst healthcare staff in the NHS.

Keywords: Cost, consumables, evaluation, radiology

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Awareness of the Cost of Surgical Consumables amongst Radiology Staff

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Background & Aim: As the NHS experiences increasing financial difficulties, awareness amongst healthcare professionals surrounding the cost of consumable items is vital. However, cost-awareness and exposure to healthcare economics amongst professionals in radiology is limited. We therefore undertook this survey to assess cost-awareness amongst radiology healthcare professionals.

Design & Methods: An online questionnaire was distributed to radiology departments at London NHS trusts. Participants were asked their demographic data and to estimate the cost of 10 medical consumable items and 10 radiology-specific consumable items. Each item's actual cost was compared with the average, median and interquartile range of the estimated price. An estimate was 'correct' if within 20% of the actual price.

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Chemotherapy may Obviate Prophylactic Femoral Nail Surgery for Multiple Myeloma with High Mirels' Score Lesions and Impending Hip Fracture

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Background: Bone involvement presents in >80% of patients with multiple myeloma. This causes lytic lesions for which prophylactic surgery is indicated to prevent pathological fractures if the lesion is graded $\geq 9/12$ on Mirels' score. Although successful, these surgeries have risks and extended recovery periods. We present a case indicating myeloma chemotherapy may obviate prophylactic femoral nailing for high Mirels' score lesions in the femoral head with impending pathological hip fracture.

A 72-year-old woman presented in December 2017 with back pain. Serum analysis revealed

abnormal protein, globulin, alkaline phosphatase, and albumin levels while protein electrophoresis and serum immunofixation revealed raised immunoglobulin A (IgA) kappa paraprotein and kappa serum free light chains, respectively.

She was diagnosed with International Staging System (ISS) stage 3 multiple myeloma, which was successfully treated with bortezomib, thalidomide and dexamethasone with regular bisphosphonates that year.

She presented again to the hospital in June 2020 with acute back and pelvic pain; Her paraprotein and serum-free light chains had increased significantly indicating serological progression. MRI showed a relapse of the myeloma deposit in her right femoral head which was graded 10/12 on Mirels' score indicating prophylactic femoral nailing.

Instead, the patient was treated with daratumumab, bortezomib, and dexamethasone as it was thought surgery would provide limited cytoreductive effect, potentiating pathological hip fracture. This resulted in a complete response, thus reducing the deposits such that the femoral lesion was graded <8 on Mirels' score, improved her pain, and restored her ability to traverse stairs.

Chemotherapy and bisphosphonates reduced the myeloma deposit in the femoral head such that indications of prophylactic surgery were eliminated according to Mirels' score recommendations. This reduced the risk of pathological hip fracture whilst eliminating surgical complications. Further research should be conducted into the safety and efficacy of this treatment regimen in patients with high Mirels' score lesions.,

Keywords: Multiple myeloma, chemotherapy, Mirels score, femoral nailing, lytic lesions

Learning: Orthopaedic stabilisation is not the only option for high Mirel's score lytic lesions secondary to multiple myeloma

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Evaluating the Impact of Incentive Spirometers on Post-Cardiac Surgery Recovery

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Background: Postoperative pulmonary complications (PPCs) are a significant concern for patients undergoing cardiac surgery, leading to increased morbidity, extended hospital stays, and higher healthcare costs. Incentive spirometers (IS) are commonly recommended to improve lung function and prevent PPCs, but robust evidence supporting their effectiveness in cardiac surgery patients is limited.

Aim: To assess whether the use of incentive spirometers can significantly reduce the incidence of PPCs and shorten the length of hospital stays in patients undergoing elective cardiac surgery.

Design: Retrospective-prospective cohort design conducted at the Royal Brompton Hospital. This approach allows for a comprehensive evaluation of the IS's impact by leveraging existing data and validating findings through ongoing patient outcomes.

Methods: All eligible patients were enrolled and categorized into two groups based on the use of IS: a retrospective cohort (patients who underwent surgery without IS) and a prospective cohort (patients using IS post-surgery). Both cohorts were assessed postoperatively with primary outcomes including the incidence of PPCs, length of hospital stay, and patient satisfaction. Data was collected using standardised forms and analysed using statistical methods to compare outcomes between groups.

Results: This study at RBH indicate a reduction in PPCs from 52% to 30% and a 1.2 day decrease in hospital stay in the IS group. The patient satisfaction was excellent.

Discussion: This study is expected to provide compelling evidence on the benefits of IS use in cardiac surgery patients. The findings will

contribute to the development of enhanced postoperative care protocols aimed at improving patient outcomes.

Conclusion: This study potentiates the routine use of IS as an evidence-based standard practice in postoperative care for cardiac surgery patients, potentially leading to better health outcomes and reduced healthcare costs.

Enhancing Patient Recovery and Reducing Complications: This study demonstrates that the use of incentive spirometers can significantly reduce postoperative pulmonary complications in cardiac surgery patients, leading to faster recovery times, shorter hospital stays, and improved overall patient outcomes. These benefits translate into better quality of care and quicker returns to normal life for patients.

Cost Savings and Efficiency for the NHS: This study highlights the potential for significant cost savings for the NHS by reducing the length of hospital stays using incentive spirometers. On average, each day a patient occupies a hospital bed costs the NHS approximately £345 for a standard ward, with higher costs for elective and critical care settings (£2,349 and £1,881 per day, respectively). By reducing the incidence of postoperative pulmonary complications, which can often extend hospital stays, the use of incentive spirometers could save the NHS substantial amounts of money. For example, reducing just one day of hospital stay per patient across many surgeries could translate into significant overall savings, improving resource allocation and reducing healthcare costs.

Keywords: Incentive spirometer, Cardiac surgery, Postoperative pulmonary complications, Enhancing recovery

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Undergraduate Awareness of Interventional Radiology - A Single Centre Experience

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Background: Interventional Radiology (IR) is a subspecialty of radiology, using minimally invasive techniques, guided by imaging, to carry out procedures both for diagnosis and treatment purposes.[1] Although IR usage is rapidly increasing, there is underrepresentation of it in medical school and thus a reduced uptake into the IR workforce.[2]

Aim: To establish exposure and interest towards IR amongst undergraduate medical students in India.

Methods: We distributed questionnaires to medical students in India across all years to assess perceptions towards interventional radiology. A quantitative analysis of the 230 responses was undertaken.

Results: Analysis showed 126 (55%) of the 230 students understood IR has a role in both diagnosis and treatment. 125 (54%) of students believe you must undergo surgical training to go into IR. 168 (73%) want to go into IR. Of the cohort that do not, 15 students (30%) and 11 students (22%) attribute this to uninteresting clinical experiences and a lack of interesting lectures, respectively.

Conclusions: This study suggests that exposure to IR is not comprehensive, with an apparent lack of awareness regarding the role of an interventional radiologist, from what training pathway should be taken to what procedures they carry out. Literature indicates although IR has increasing applicability, educational efforts are focussed on diagnostic radiology, and thus isolated IR exposure seldom exists.[3] As such, students may not be capable of making informed decisions regarding embarking on an IR training pathway, due to poor opportunities for adequate IR exposure. Early exposure for students is proven to be beneficial, allowing students to comprehend what the specialty entails well & aiding informed career decisions.[4] Limitations of the study include only targeting the Indian demographic so to be more representative the study should be replicated internationally with a larger sample size.

Keywords: Interventional Radiology, Medical Curriculum

2024.BNAC.RI.059

Herpes Simplex Encephalitis with Cerebral Oedema and Hyponatremia

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Introduction: Herpes Simplex Encephalitis (HSE) can begin subtly but may quickly deteriorate neurologically. We treated a 66-year-old woman who initially presented with mild symptoms, which rapidly worsened. This case underscores the need for early recognition and management plan based on critical neuroimaging.

Case description

A 66-year-old woman presented with a three-day history of headache, fever, nausea, fatigue, and mild confusion.

Admission bloods showed hyponatraemia and mildly raised CRP. A chest X-ray and initial non-contrast CT scan of the head showed no acute intracranial abnormalities.

However, the patient's condition rapidly deteriorated, with increased confusion and drop in GCS on the next day. A repeat contrast-enhanced CT scan revealed a hyperdense right middle cerebral artery (MCA) and a large infarct in the right MCA territory associated with significant cerebral oedema, mass effect, compression of the right lateral ventricle, and midline shift to the left. MRI confirmed right sided hyperintensity with extensive perilesional oedema and mass effect. These findings were in keeping with Herpes simplex encephalitis, with mild right uncal herniation, and posed a severe risk of herniation. This made lumbar puncture a contradiction.

In view of further risk of neurological deterioration, she was managed in ICU with focus on reducing intracranial pressure and providing anti-viral therapy.

Discussion and conclusion: A recent study in the UK on 1165 patients admitted with stroke, showed 163 (14%) were stroke mimics, but of those none were classified as encephalitis, which suggests that viral encephalitis is not frequently encountered among stroke mimics. This case highlights the imaging findings of HSE

to cerebral emergencies as mild symptoms lead quickly to severe complications. The diagnostic conundrum arises from the extent of cerebral oedema refraining us to perform lumbar puncture, underlining the limitations in diagnosis and underscores how neuroimaging plays a key role with detecting encephalitis and guiding treatment.

Keywords: Viral Encephalitis, Stroke mimic, Cerebral oedema

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Evaluation of Healthcare Professionals Knowledge on British Thoracic Society (BTS) Guidelines for Oxygen Therapy in Medical Wards

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Background: Accurate oxygen therapy is important in managing acutely unwell patients, yet healthcare staff may lack sufficient knowledge of the British Thoracic Society (BTS) guidelines.

This audit evaluates staff knowledge and practices regarding these guidelines on general internal medicine wards.

Design: A cross-sectional audit was conducted on three general internal medicine wards. A total of 43 healthcare professionals, including 19 nurses, 21 doctors, and 3 physician associates, completed an 18-question survey assessing their knowledge of oxygen therapy per BTS guidelines. Data were collected via hard copies of the questionnaire and analysed using Microsoft Excel. Key aspects covered included oxygen prescription, device selection, monitoring practices, and staff confidence.

Results: The audit revealed that while 93% of participants recognized oxygen as a drug, only 44% understood that it must always be prescribed. Awareness of BTS guidelines was at 51%, with notable differences between roles: nurses were more knowledgeable about practical oxygen delivery, while doctors and

physician associates were better informed about theoretical aspects. Confidence in knowledge was low, with only 6.98% of staff feeling confident in their understanding of the guidelines.

Discussion: Significant gaps in knowledge and awareness of BTS guidelines were identified, particularly regarding the importance of oxygen prescription and monitoring. These findings suggest an urgent need for targeted educational interventions.

Conclusion: This audit underscores the necessity for ongoing education to enhance staff adherence to BTS guidelines, potentially improving patient outcomes related to oxygen therapy. Future efforts should focus on accessible educational resources and regular training sessions.

Keywords: Oxygen Therapy, British Thoracic Society (BTS) Guidelines, Healthcare Staff Knowledge

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Undergraduate Awareness of Clinical Radiology - A Single Centre Experience

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Background: Radiology is pivotal to providing good patient care given its intersection with all medical specialties. It is evident that to improve patient outcomes, imaging education should be prioritised for students given its essential role [1]

Our objective is to establish the degree of exposure and interest towards clinical radiology amongst undergraduate medical students in India.

We distributed questionnaires to medical students in India, including both preclinical and clinical years, to assess perceptions towards clinical radiology. A quantitative analysis of the 231 responses was undertaken.

Analysis revealed 22 (10%) of students had

direct interaction with radiologists during university. 35 (15%) of students reported either no knowledge or poor understanding of clinical radiology compared to other specialties. 173 (75%) of students expressed being moderate to interested in exploring clinical radiology as a specialty further. 21 (9%) of students confirmed radiology as their career aspiration.

The study portrays a sizeable proportion of medical students having limited exposure to radiology as a career choice. Thus, they may not be able to build an accurate perception of what a clinical radiology career entails. This would reflect in the small number of aspiring radiologists and the substantial numbers that expressed reservations about pursuing a career in clinical radiology. However, most students still showed interest towards the specialty. These findings indicate the importance of having a training programme within universities that educates students about radiology as well as providing first hand exposure early on for preclinical students too. Evidence shows the importance of clinical exposure early on, allowing for professional & portfolio development, aiding them as doctors in the future. [2] Limitations of the study include data gathering only from India & more preclinical, than clinical students responding to the survey. To be more representative the study should be replicated internationally and with larger sample sizes.

Keywords: Clinical Radiology, Medical Curriculum

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Total Hip Replacement in the Young

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Background: Young active patients with degenerative hip disease post slipped upper femoral epiphysis (SUFE), developmental dysplasia of hip (DDH), Perthes' and inflammatory arthropathy are challenging to

treat. They are highly demanding and in a critical period of their development.

Aim: To explore the challenges faced in treating these patients and to assess the outcomes.

Results: Approximately 21 patients, 23 hips were replaced from the period of August 2005 to May 2023 with a mean follow up period of 8.34 years (1 to 19 years). The mean age at time of surgery was 17 years (13 to 20 y), indications were SUFE + avascular necrosis (AVN) in 9 patients (40%), DDH + osteoarthritis (OA) in 7 Patients (30%), Perthes + AVN in 3 patients (15 %) and Juvenile arthritis in 3 patients (15%).

Mean BMI at time of surgery was 26 (SD 4.2), 19 Hybrid THR (82%) and 4 Uncemented THR (18%), 13 Patients had general anaesthesia, 6 had GA and spinal, 3 with GA and femoral nerve block and one patient had spinal and sedation. The mean operative time 2.2 hours (SD \pm 0.8), mean intraoperative blood loss was 300 cc (SD \pm 100 cc), mean hospital stay was 3.8 days (SD \pm 1.2), 15 patients had Ceramic on highly crosslinked polyethylene and 8 had Ceramic on ceramic bearing surfaces. Of the 23 hips replacement among 21 patients aged 13-20 years with a mean follow up of 8.35 years,

Clinically the mean HHS was 90.5 (52-100), 15 were Excellent, 7 were good outcome and 1 poor case which is under investigation for inflammatory arthropathy. Radiologically all patients had satisfactory outcome with excellent positioning and no signs of loosening or position change apart from 1 patient with poor outcome showing faint bone pedestal.

Conclusion: THR is a successful and durable line of treatment for end stage DHD in the critical age group. Good clinical and radiological outcomes.

Orthopaedics, degenerative hip displacement, total hip replacement

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Vaping as a Weight Management Strategy in Adolescents and Young Adults: - A Systematic Review

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Background: Electronic cigarettes or vapes are battery-operated devices that heat a liquid, often containing nicotine and flavouring substances, to produce an inhalable aerosol. Despite being used as an alternative to traditional smoking, many studies have reported their health risks and ineffectiveness in smoking cessation. The impact of e-cigarettes on weight control behaviours, a known effect of traditional cigarette smoking, is unclear.

Methods: A systematic review was conducted to explore the relationship between e-cigarette use and body weight changes in adolescents and young adults. The existing literature from databases such as PubMed, Cochrane Library, Embase, Science Direct, Web of Science, Scopus, and Google Scholar until October 2023 was searched and included in the review. The methodological quality of all selected studies was assessed using the Joanna Briggs Institute's (JBI) Critical Appraisal Checklists for Studies.

Results: Out of 5117 citations, 20 publications featuring cross-sectional studies with adolescent participants were qualitatively analysed. The high rates of e-cigarette usage seemed to correlate with increased weight concerns, particularly among females. Regular e-cigarette users who reported being overweight and used calorie restriction for weight reduction were more likely to view vaping as a weight loss or control strategy. Young adults (<24 years) may consume more flavoured e-cigarettes than older users (>25 years).

Conclusions: This study revealed a significant use of e-cigarettes among high school students, driven by taste preferences, weight management, and perceived harm reduction. Particularly among girls facing body image pressures, vaping serves as a weight control method. This highlights the need to assess cardiovascular risks and advocate for further research, including longitudinal studies, to inform public health strategies effectively.

Keywords: Adolescent, Vaping, E-Cigarettes, Weight Control, Weight Loss

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Gastrointestinal Manifestations of Splenic Sarcoidosis

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Background: Sarcoidosis is a multi-system granulomatous disease of unknown cause, characterized by noncaseating granulomas in the affected organs. Extrapulmonary manifestations are rare, accounting for 30-50% of cases. Skin lesions, arthritis, uveitis, peripheral lymphadenopathy, and hepatic involvement are the most seen. The occurrence of sarcoidosis with or without the involvement of the pulmonary system is possible, but purely extrapulmonary sarcoidosis is rare (less than 10%). Due to widespread lymphadenopathy associated with B symptoms, the possibility of malignancies such as lymphomas is considered. Additionally, there is a significant correlation between sarcoidosis, low HDL levels, and high total cholesterol. Higher total cholesterol levels have been linked with a 3.9 times higher risk of sarcoidosis.

We present the case of a forty-eight-year-old man diagnosed with sarcoidosis involving primarily the spleen. He presented with abdominal pain, loss of appetite, weight loss, widespread lymphadenopathy, progressive splenomegaly, and minimal pulmonary involvement which was uncovered subsequently.

He was also noted to have hypercalcemia with elevated beta-microglobulin, serum IgG, and serum angiotensin-converting enzyme levels within normal limits. A lymph node biopsy confirmed non-caseating granulomas.

The sporadic splenomegaly led to left-sided portal hypertension attributed to portal gastropathy, causing oesophageal varices, gastric antral vascular ectasia and complicated by ascites. Despite isolated splenomegaly with portal hypertension and ascites, there was no

significant hepatic involvement or portal vein thrombosis. Incidentally, he had mixed hyperlipidaemia, which correlated to an increased risk of acquiring sarcoidosis.

The patient had anaemia due to upper gastrointestinal bleeding, caused by gastric sarcoidosis. The splenic nodules which are sarcoid in origin suggest left-sided portal hypertension which has a lower incidence, contributing to portal gastropathy, oesophageal varices, and Gastric Antral Vascular Ectasia (GAVE), leading to upper gastrointestinal bleeding, ascites, and anaemia.

This clinical case highlights the challenge of diagnosing extrapulmonary sarcoidosis with similar symptoms to malignancies. However, an early diagnosis of Sarcoidosis should be considered because of raised calcium and hyperlipidaemia. Early tissue biopsy can lead to early diagnosis which could aid in management and better outcomes.

Keywords: Sarcoidosis, Splenomegaly, Left sided portal hypertension

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Provision of Menstrual Period Products for Staff in NHS Hospitals

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Let's talk about periods. Nearly 80% of the NHS workforce identify as female [1], and a large proportion of these women find themselves caught short at work when they have their menstrual periods starting without prior warning, under circumstances of innate irregularity to cycles, while peri-menopausal and in some medical or endocrine conditions.[2] This may lead to discomfort, stress, and embarrassment. Work constraints such as tight schedules or onerous clinical duties may prevent staff from having the opportunity to access menstrual period products when required. [3]

The paediatric department initiated a pilot scheme whereby sanitary items were freely available to staff in toilets. Over forty tampons and pads were placed in staff toilets, along with a digital code which was linked to a questionnaire. Anonymous feedback was collected and demonstrated positive feedback.

The results of this pilot were presented along with a funding proposal to implement across the organisation. A start-up donation of around £3,000 would allow 200 staff toilets to be equipped with sanitary products. The Trust would employ “champions” to restock the toilets, and they would be maintained on a “take what you need and donate when you can” basis. Alleviating the problem of access to period products has the potential to make significant difference to the wellbeing and dignity of thousands of female NHS staff.

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Improving Oxygen Prescription in Acute Medical Unit

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Background: According to the British National Formulary, ‘Oxygen should be regarded as a drug’ and the British Thoracic Society have issued guidelines stating that it is ‘a requirement for oxygen to be prescribed according to a target saturation range’. In hospital, patients can only be given a medication with a signed prescription. However, how many times are we giving oxygen to our patients with a valid prescription?

Aim: To improve completed oxygen prescription and documentation in drug charts within the AMU to 50% by July 2024.

Design & Methods: From May to July 2024, we collected data from patient notes, drug charts and NEWS charts. We checked whether oxygen was prescribed, if the correct scale was used and if it was being correctly monitored by nurses. We ran 5 cycles, each with different interventions. Our sample size was between 57-66 patients.

Cycle 1 – Audit

Cycle 2 – Medical Team Teaching

Cycle 3 – Handover Room Verbal Reminders

Cycle 4 – Posters

Cycle 5 – Individual lanyards

Results & Discussion: Q1: Was oxygen being prescribed on the drug chart?

24% Increase in the number of patients being prescribed oxygen on admission (17% to 40%). Verbal reminders increased prescription by 19%, while posters were not effective.

Percentage of patients being prescribed oxygen per cycle:

o Cycle 1 – 17% (10 out of 60 patients)

o Cycle 2 – 23% (14 out of 61 patients)

o Cycle 3 – 42% (25 out of 60 patients)

o Cycle 4 – 39% (26 out of 66 patients)

o Cycle 5 – 40% (23 out of 57 patients)

Q2: If oxygen was prescribed on drug charts, was a scale marked? 100% compliance was found.

Q3: Was oxygen scale being marked on NEWS charts? 100% compliance.

Q4: If oxygen was prescribed, were nurses signing off drug charts prescriptions when administering oxygen to patients?

Percentage of patients’ drug charts being signed off by nurses:

o Cycle 1 – 30% (3 out of 10 patients)

o Cycle 2 – 24% (4 out of 14 patients)

o Cycle 3 – 4% (1 out of 25 patients)

o Cycle 4 – 7% (4 out of 26 patients)

o Cycle 5 – 10% (3 out of 23 patients)

Overall analysis: We increased the oxygen prescription in the AMU by 24% and verbal reminders at Handovers was most effective. More work is required to increase nursing sign off on oxygen administration.