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Proceedings of the Association of North of England Physicians

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Abstracts of the meeting held on Saturday 5th March 2016 at North Tees University Hospital

ATRIAL FLOW IN THE NORMAL HEART - INSIGHTS INTO THE PATENT FORAMEN OVALE AND CRYPTOGENIC STROKE STORY

Jayant Kakarla, Jehill D Parikh, Bernard Keavney, John J O'Sullivan, Gary A Ford, Andrew M Blamire, Kieren G Hollingsworth, Louise Coats
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40% of strokes in those under 55 years have no identifiable cause. Patent foramen ovale is twice as common in these patients compared to the general population. The presence of a causal relationship is poorly defined; potential mechanisms include paradoxical embolism, direct embolization or coexistent left atrial dysfunction. 4D-Flow MRI allows analysis of intra-cardia flow patterns that may provide new clues to this controversial association. 13 subjects with cryptogenic stroke and patent foramen ovale (CS-PFO) (age 40±8 years, 6 male) and 13 age and gender matched controls underwent 4D Flow MRI at 3 Tesla. Atrial flow data was segmented and analyzed. A spectrum of flow patterns was observed in the right atria: vortical, helico-vortical, helical and multiple vortical flow. The CS-PFO subjects were more likely to have non-vortical flow (p=0.015). The inferior vena cava was more medial relative to the superior vena cava in this group (10±5mm versus 3±3mm, p=0.002). This finding also corresponded to different flow patterns. In the left atria all subjects, except one control, had a single counterclockwise vortex. The size of the vortex correlated with left lower pulmonary vein flow (systolic r=0.61, p=0.001, diastolic r=0.63 p=0.002). A diastolic vortex was less frequent in the CS-PFO group.
Conclusion: 'Non-vortical' flow patterns that direct flow towards the septum were more commonly seen in the cryptogenic stroke-patent foramen ovale group and support a mechanism of paradoxical embolism. Left atrial flow patterns were more homogenous. However subtle alterations in diastolic flow were observed in the CS-PFO group.

MANAGEMENT OF ACUTE KIDNEY INJURY IN NORTHUMBRIA SPECIALIST EMERGENCY CARE HOSPITAL

Philip Thompson, Holly Mabillard, William Hinchliffe
Northumbria Specialist Emergency Care Hospital (NSECH)

The 2009 NCEPOD report detailed significant failings in care of patients with acute kidney injury (AKI). NSECH opened in June 2015 to provide standardised seven day services. The NHSE AKI pathology algorithm is used to e-alert clinicians that their patients may have AKI. During September 2015, 49 patients with stage-3 AKI were identified. 28% were detected between Friday to Sunday, 24% on Monday alone. Most, (54%) were identified in Emergency Care. Just 41% had a renal ultrasound looking for obstruction. 28-day mortality was 39%. For those detected on weekends, 28-day mortality was 60% and 37% Monday to Friday. 46% were reviewed within 1 hour whereas 50% were seen between 1-24 hours and 4% were never reviewed. Creatinine did not return to within 20% of baseline in 58% survivors. 5 patients were referred to our tertiary nephrology unit.
Conclusion: This snap-shot mirrors apparent national deficits in the management of AKI. An AKI bundle, similar to that used for the Sepsis 6 campaign, could strengthen current practice in emergency care and facilitate appropriate referral.

THERE'S SOMETHING IN THE WATER

J Walsh, D Lim, E O'Cofaigh
Friarage Hospital, Northallerton

A 46 year old previously well man presented with a 4 day history of myalgia and rigors followed by diarrhoea and vomiting. Past medical history included previous intravenous drug use. On admission he had a tachycardia, hypotension, high lactate and thrombocytopaenia. The only other finding was of marked epigastric tenderness. Chest x-ray and CT abdomen revealed no abnormality. He lived and worked in a caravan park with an on-site freshwater fishery. He had multiple cats. He presented in December 2015, the wettest month for the UK in more than a century, and there was localised flooding in many areas, including the fishery he worked at. The diagnosis of leptospirosis was made clinically and confirmed on serology.
Conclusion: Leptospirosis is a zoonosis caused by spiral-shaped bacteria of the genus Leptospira. In humans, most cases are contracted by exposure to contaminated water. Rodent, dog and livestock are typical sources of the organism which can survive in

fresh water for days. Most cases are sporadic but outbreaks have been observed from common source exposures or during heavy rainfall. The learning point here is the importance of occupation, environment and potential sources of exposure.

ASCITES AND DERANGED LIVER FUNTION TESTS. AN UNEXPECTED DIAGNOSIS

R Capstick; A Nkhoma
Darlington Memorial Hospital

Cardiac causes should also be considered as a cause of deranged liver function. We report a case of constrictive pericarditis presenting with predominantly abdominal signs and symptoms. An 18 year old man presented with abdominal distension, weight loss and night sweats. Clinical examination revealed generalised lymphadenopathy, jaundice, ascites and splenomegaly. He had elevated liver enzymes and deranged clotting function. Ultrasound confirmed hepatosplenomegaly and ascites. CT demonstrated widespread lymphadenopathy. A lymph node biopsy and bone marrow trephine excluded lymphoma. Further investigations including viral serology, autoimmune screen, quantiferon gold and tumour markers were unremarkable. Abdominal paracentesis revealed an elevated serum:ascites albumin gradient signifying portal hypertension. Budd Chiari and veno-occlusive disease were ruled out. An echocardiogram revealed jerky septal movements and a dilated IVC suggestive of cardiac pathology. Review of his imaging demonstrated a calcified pericardium. Subsequent cardiac catheterisation showed equalisation of left and right end diastolic pressures with a 'dip and plateau' pattern, diagnostic of constrictive pericarditis. He went on to have pericardial stripping and at follow up was asymptomatic.
Conclusion: Delayed diagnosis of constrictive pericarditis results in significant morbidity and mortality. There should be a high index of suspicion in patients presenting with liver dysfunction when no primary liver pathology can be found.

SEROSITIS: ONE PRESENTATION: MULTIPLE CONDITIONS WITH DIFFERING OUTCOMES

Emma Fisken, Manisha Ahuja, Olwyn Jones, Clive Kelly
Queen ELIZABETH Hospital, Gateshead

Serositis refers to inflammation of the pleura, pericardium or peritoneum. It is often associated with systemic illness and pyrexia. It can be precipitated by infection but inflammatory disorders may also present in this way, particularly when more than one organ is involved. We present 4 patients with in whom infection was excluded. Each case was due to different diseases and required very different treatments, although all presented with similar symptoms. Patient 1 presented with abdominal pain and ascites with a history of surgery for previous aseptic peritonitis. Urinary porphobilinogen was positive and she was treated with HaemArginate for acute intermittent porphyria. Patient 2 presented breathless with fever and arthralgia. She had pleuropericardial effusions, positive ANA and antiphospholipid antibodies. She was treated with rituximab for systemic erythematous lupus. Patient 3 presented with arthralgia, multi organ failure and serositis. Her evanescent rash and high ferritin confirmed our diagnosis of adult onset Still's disease. She received Cyclophosphomide and methylprednisolone to good effect. Patient 4 had a history of recurrent pyrexia, myalgia and generalised chest and abdominal pain with intra cavitary effusions. She had undergone multiple inconclusive investigations but had a family history of similar presentations. She was successfully treated for periodic fever syndrome with colchicine.
Conclusion: Serositis may be overlooked in patients with isolated abdominal or chest pain. These cases demonstrate the wide range of diagnoses that can present with serositis.

THE CURIOUS CASE OF HEPATIC HYDROTHORACES

J Mackenzie, M Dickson, A Aujayeb, J Miller, A Duffy
North Tyneside General Hospital

Hepatic hydrothorax is a transudative pleural effusion due to liver cirrhosis, without cardiac or pleural disease. The effusions are predominantly right sided due to ipsilateral diaphragmatic defects and their management is difficult and varied as these cases show. A 66 year old male with alcoholic cirrhosis and portal hypertension presented with a right transudative effusion. A therapeutic aspiration provided temporary relief but an increase in his diuretics caused renal dysfunction. He was referred for transjugular intrahepatic portosystemic shunt (TIPS) with good result. A 74 year old female with autoimmune hepatitis presented with a large right effusion. She required chest drainage fortnightly. She was encephalopathic (a contraindication for TIPS) and has been declined for transplant on grounds of frailty. A chemical pleurodesis has been unsuccessful and she is too frail for medical thoracoscopy. An indwelling pleural catheter was inserted. Drainage was increased to 1L every 3 days, with careful consideration of haemodynamic

fluid shifts. A 65 year old with non-alcoholic steato-hepatitis, who is on the transplant list, presented with a recurrence of a right effusion, presumed to be a hydrothorax. She has anasarca but no ascites. An echo shows moderate left ventricular dysfunction and her effusion resolved with an increase of her diuretics.
Conclusion: These cases illustrate the importance of considering hepatic hydrothorax as a cause of pleural effusion.

META-ANALYSIS OF GENOME-WIDE ASSOCIATION STUDIES TO ASSESS C-REACTIVE PROTEIN RESPONSE TO STATIN THERAPY

Harshal Deshmukh, Daniel Chasman, Stella Trompet, Xiaohui Li, Fangui Sun, Graham Hitman, Helen Colhoun

Newcastle University; Brigham and Women's Hospital, Boston, USA; Leiden University, Netherlands; Harbor-UCLA Medical Center, Torrance, California; Boston University, Boston USA; St Bartholomew's and the London School of Medicine and Dentistry; University of Dundee.
We have shown that the C-reactive protein (CRP) response to statin therapy is highly variable, with 45% of people on atorvastatin having no decrease in CRP. Whether there is any genetic component to this variability is unclear. We sought to identify genetic determinants and quantify the single nucleotide polymorphism based heritability of CRP response to statins. In a meta-analysis of genome-wide association studies, we included datasets from both randomised controlled trials and observational studies. There were about 10,000 statin-treated individuals overall, grouped into a first discovery stage (from the CARDS trial and PROSPER, PARC, and FSH studies) and a second replication stage (from the JUPITER trial). CRP response was modelled as log(CRP follow-up/CRP baseline) adjusted for baseline CRP and other covariates. Genome-complex trait analysis (GCTA) was used to identify the narrow sense heritability of CRP response. The study consisted of 5300 statin users in the discovery cohort and 4000 statin users as replication cohort. On the GCTA analysis narrow-sense heritability (h^2) for CRP response was 0·19 (SE ±0·24) and was higher than that reported for LDL cholesterol response to statin therapy 0·05 (SE 0·14). Preliminary results of the genome-wide association meta-analysis identified three loci that achieved genome-wide statistical significance: APOE, rs429358 (p=7·91E–10); RP11-458D21.5, rs184819447 (p=2·32E–9); MYT1L, rs79020661 (p=3·21E–8). Other than APOE none of these was associated with LDL response to statin therapy or baseline CRP.
Conclusion: These data are consistent with statin-induced change in CRP having a mechanism distinct from LDL cholesterol change. We identified several loci associated with CRP-response to statin therapy which need to be investigated further by additional replication analysis.

IS UNDIAGNOSED HEART FAILURE COMMON ON ORTHOPAEDIC WARDS?

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1–2% of the UK adult population has heart failure (HF), the prevalence rising to ≥10% among people aged over 70. Osteoarthritis, rheumatoid arthritis and fractures share risk factors for HF and a common pathophysiology. Is undiagnosed heart failure common in orthopaedic patients? The study was conducted on 2 orthopaedic wards, one receiving elective admissions (group A) and the other following fragility fractures (group B). Between January 2014 and April 2015, 419 patients over the age of 65 were screened. After exclusion of known HF, 100 consecutive new patients in each group consented to participate. Serum BNP was measured and if >35 ng/l, transthoracic echocardiography was performed. Diagnosis of HF was based on the European Society of Cardiology definition, sub-classified in to HF with preserved (HFpEF) or reduced (HFrEF) ejection fraction (EF). In patients admitted for elective orthopaedic surgery, 6% were known to have HF. In the fracture group, 15% had known HF, and a further 5% were diagnosed with heart failure by the inpatient clinical team. 200 patients age 65 to 94 year (female 70%) were recruited. In group A (elective group) 52 patients had elevated BNP above the threshold of 35, of which 3 had HFpEF and 3 had asymptomatic low EF. In group B (fragility fracture group), 84 had a raised BNP of which 3 had HFrEF, 10 have HFpEF and 1 has asymptomatic low EF.
Conclusion: Screening for undiagnosed heart failure identified a significant number of new cases, particularly in the fragility fracture population
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THE DIAGNOSIS OF STABLE ANGINA: IS THERE STILL A ROLE FOR THE RAPID ACCESS CHEST PAIN CLINIC?

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Anginal pain is characterised by: (i) constricting discomfort in the chest, neck, jaw, or arms, (ii) precipitated by physical exertion, and (iii) relieved by rest or glyceryl trinitrate (GTN). The presence of these features, in addition to risk factor burden, is used to estimate the pre-test probability of coronary artery disease so guiding management. We evaluated concordance between GP and Rapid Access Chest Pain Clinic (RACPC) findings, to identify barriers to GP-based diagnosis of angina. A database of patients reviewed in a high-volume, cardiologist-led RACPC was prospectively maintained, from 2012-2015. Standardised proformas were used to code typicality of pain (3 features: typical; 2 features: atypical; ≤1 feature: non-angina). Concordance between GP and cardiology-based assessment was ascertained using Cohen's κ and Bland-Altman plots. Age, sex, typicality of angina, cardiovascular risk factors and ECG criteria were used to calculate pre-test probabilities. Thematic analysis was performed to explore reasons for missing data. 1,634 cases were analysed. Agreement between GP and RACPC in typicality of angina was poor (723/1,634, 44.2%; κ=0.235, $p<0.001$; Table 1). GP-calculated pre-test probability was greater than in the RACPC (54.7 vs. 40.9%; $p<0.001$), although a strong positive correlation was observed (R^2=0.64, $p<0.001$; Figure 1). Referral data regarding character of pain were missing in 10 (0.6%), due predominance of non-pain related symptoms (i.e. breathlessness). No data regarding exertion were available in 57 (3.5%), and to rest/GTN in 475 (29.1%).
Conclusions: GP and cardiologist-led diagnosis of angina is discordant. Pre-test probability is overestimated in primary care, with implications for subsequent diagnostic investigation and management.

COLD AUTOIMMUNE HAEMOLYTIC ANAEMIA COMPLICATED BY PULMONARY EMBOLISM

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An 81-year-old gentleman presented with fatigue, breathlessness and productive cough, with recent weight loss. His past medical history included COPD, ischaemic heart disease (previous CABG) and left ventricular systolic dysfunction. Admission haemoglobin was 58g/L (MCV 104fL), with normal platelet and white cell counts. B12 and folate levels and serum electrophoresis were normal, though bilirubin was mildly raised (32umol/L) with elevated reticulocytes and low serum haptoglobin. A direct antiglobulin (Coombs) test was positive for anti-C3d, consistent with cold autoimmune haemolytic anaemia. CT scan showed no underlying malignancy, but was suggestive of pulmonary embolism. CTPA confirmed a right lower lobe pulmonary embolism. He was treated with therapeutic low molecular weight heparin and warmed red cell transfusions. Sputum cultures grew moraxella catarrhalis. Mycoplasma serology was negative. His haemoglobin remained stable following treatment and he was subsequently commenced on warfarin prior to discharge.
Conclusion: Cold autoimmune haemolytic anaemia is an uncommon condition that may be idiopathic or secondary to underlying disease, most frequently lymphoproliferative disorders or infection (e.g. mycoplasma, EBV). Pulmonary embolism is a reported rare complication, likely arising from intravascular haem-agglutination in the presence of cold antibodies. Treatment includes maintaining a warm body temperature, warmed blood products for symptomatic disease, and immunosuppression (e.g. rituximab) in some cases.

ARE PATIENTS WITH ATRIAL FIBRILLATION HAVING THEIR CHA_2DS_2VASC SCORE RECORDED?

Siobhan Coulter (SC), Dr Alison Lee (AL)
Northumbria Specialist Emergency Care Hospital

Patients with AF and moderate to high risk of stroke may benefit from anticoagulation. To assess the risk and in line with NICE guidelines all should have a CHA_2DS_2Vasc score recorded. In striving towards shared decision making, it is important patients are provided with clear information. Interim data shows a 63% compliance with completing CHA2DS2Vasc scores on new AF patients. A visual aid has been positively received, with 78% believing they better understand their risk of stroke. 33% prefer the use of a Cates plot over a linear scale, whilst 48% feel there is no difference.
Conclusion: The level of compliance with CHA_2DS_2Vasc suggests room for improvement. Patients feel the visual aid increases their understanding and would help them come to an informed decision about anticoagulation.

AN UNUSUAL CAUSE OF CHEST PAIN

A Brown
James Cook University Hospital, Middlesbrough

A 42-year-old man presented with acute severe retrosternal chest pain. ECG showed sinus rhythm with partial RBBB and ST elevation anteriorly. Past history included hypertension and recurrent gastrointestinal bleeding secondary to angiodysplasia for which he had intermittent blood transfusions. On

assessment he was grey, diaphoretic, tachycardic with BP 153/74. Chest auscultation revealed slight reduction in breath sounds at his left base with normal heart sounds. Abdominal examination revealed left upper quadrant tenderness but no masses. Chest X ray revealed a large hiatus hernia and apparent cardiomegaly. A bedside transthoracic echocardiogram revealed normal LV systolic function with no regional wall motion abnormalities. However the left atrium was compressed extrinsically with no evidence of LV inflow obstruction. CT confirmed a large hiatus hernia with herniation of his stomach into his thorax causing gastric volvulus affecting the long axis of the stomach with subsequent gastric outlet obstruction. He underwent endoscopy for gastric decompression prior to laparoscopic reduction of gastric volvulus and repair of the hiatus hernia.
Conclusion: Gastric volvulus is a rare and thus easily missed cause of chest pain but with a serious risk of perforation, necrosis and sepsis with gastric volvulus.

ARE DUODENAL BIOPSIES NECESSARY IN PATIENTS WITH IRON DEFICIENCY ANAEMIA AND NEGATIVE COELIAC SEROLOGY?

Phey Shen Lee, Thomas Jonathan William Lee
North Tyneside General Hospital

We analysed all duodenal biopsies reported as typical or suggestive of coeliac disease throughout 2012. The patients' IgA tissue transglutaminase antibody assay, haemoglobin and ferritin results were traced retrospectively. 484 duodenal biopsies were performed of which 141 (29.1%) were for iron deficiency anaemia and 21 (4.4%) for positive coeliac serology. 8.5% of anaemic patients had histological changes of coeliac disease and of these, 3 (2.1%) were seronegative. All 3 patients had at least Marsh III appearances on histology. These 3 patients also had diarrhoea, weight loss and abdominal bloating which improved on a gluten-free diet.
Conclusion: Coeliac disease is an important and treatable condition. We suggest that duodenal biopsies be performed in patients with malabsorptive symptoms such as diarrhoea and weight loss who are undergoing upper GI endoscopy for iron deficiency anaemia irrespective of serology.

Association Business

Date of next meeting:

This is the summer evening meeting. It will be on **Thursday 7th July 2016 at Sunderland Royal Hospital: 6pm – 9pm to include buffet supper.** Refreshments and supper are provided free. Three hours CME approved.

Abstracts for poster or oral presentations from consultants, trainees and medical students are all welcome. Presentations should reflect the full range of clinical medical practice including original research, clinical series, audit and case reports. Please submit by email (around 250 words including a short conclusion) **before 27th May** to the secretary clive.kelly@ghnt.nhs.uk.

The **Margaret Dewar prize** for the best junior doctor or medical student's presentation will be awarded for the best oral presentation of the year (£150), runner-up (£100) and best poster (£50)
Please e-mail the names of any new consultant colleagues or your own name if you are not already on the mailing list to the secretary and please consider presenting your research for the Hewan Dewar prize awarded annually for the best research paper submitted by a junior doctor or medical student.

Lastly, do look at **the web site of the Association on http://anep.co.uk/** which contains details of future meetings plus back numbers of the Proceedings over the past 10 years and other issues relating to the Association.

We hope to see you in July
