Botulinum toxin despite her anorectal manometry not showing high resting pressures.

Results SRUS is an important comorbidity in children presenting with constipation on a background of rectal dyssynergia/dysfunctional elimination. Our patient's significant anxiety has contributed to her dysfunctional elimination and she has ongoing CAMHS involvement so that biofeedback can be initiated. The absence of conclusive histology perhaps delayed a diagnosis being reached and her initial non-compliance with treatment was likely to be a significant contributing factor too. The key to diagnosis here was reviewing her histology in the context of her initial presenting features including passage of blood and mucus alongside straining and tenesmus.

Conclusions Whilst SRUS is a relatively uncommon diagnosis seen in the paediatric population, good history taking and consideration of clinical features is key to its diagnosis, even if histology is not confirmatory.

British Association of General Paediatrics

725

INVESTIGATION AND MANAGEMENT OF VITAMIN B12 DEFICIENCY: EXPERIENCE IN A TERTIARY PAEDIATRIC CENTRE

Sherry Fang, James Davison. *Great Ormond Street Hospital*

10.1136/archdischild-2021-rcpch.164

Background Vitamin B12/Cobalamin (Cbl) is a water soluble vitamin which is found in animal products (liver, salmon, beef, egg, chicken), milk products, and fortified cereals. Breast milk is sufficient to meet the demands of 0–6 month olds as long as the mother is not herself deficient. Causes of deficiency include dietary (low protein or protein restricted diet), pernicious anaemia, small bowel surgery, inflammatory bowel disease, deficient intrinsic factor, disorders in cobalamin transport and inborn errors of metabolism. Patients can present in a variety of non-specific manifestations such as pancytopenia, lethargy, chest pain, developmental delay, and weakness thus will be seen across different specialties. B12 deficiency can have significant long-term neurological effects, and the finding mandates appropriate further aetiological investigations and immediate treatment.

Objectives This audit will review current practice across all specialties at a tertiary paediatric hospital in the United Kingdom to inform further changes required to ensure optimal practice.

Methods Our study period spanned May 2018 to May 2020. We obtained data from our biochemistry department which showed 221 results with low B12 levels. We audited a random selection of the data to see if key investigations for vitamin B12 deficiency had been conducted including: Plasma homocysteine, plasma and urine methylmalonic acid (MMA), folate, full blood count (FBC), auto antibodies, intrinsic factor (IF), genetics, cobalamin, endoscopy as well as specialist investigations such as MRI and nerve conduction studies (NCS). We also documented the main diagnosis of the patient, suspected cause of B12 deficiency, treatment plan, and if a repeat vitamin B12 level was normal.

Results Main documented cause of low Vitamin B12 include a metabolic diet (20%) mainly those on protein restriction. Other causes include gastroenterological causes (8%) and low maternal levels in infants (5%).

49 patients (52%) had no documented cause for their vitamin B12 deficiency, of these 15 (30%) were treated with either IM or enteral vitamin B12 and of these patients 73% had repeat blood tests. Of those who were not treated, only 21% had repeat samples taken. Of all the patients, only 43% had documentation of treatment either as supplemental drop/tablets, or an IM injection.

Haematological presentations included persistent neutropenia, low vitamin B12 with variable blood sugars, and haemolytic anaemia. Homocysteine, and MMA were sent along with FBC and folate. In 1 patient, specialist investigations were sent (autoantibodies, intrinsic factor, and genetics).

Conclusions Vitamin B12 deficiency spans multi-disciplines and is an important investigation to consider for many presentations and currently there is no set local guideline; the majority of patients are not being fully investigated or treated. There is also inadequate documentation and follow-up for these patients. Metabolic patients in particular who are on dietary restrictions such as a low protein diet should have regular levels checked and treated as appropriate due to their higher risk of deficiency. Recommendations from this audit suggest a trust guideline for the initial investigation of low vitamin B12 levels, appropriate and timely management and follow-up.

British Association for Paediatric Nephrology

726

A STATE OF THE ART: USING 3D MODELS TO ALLOW BETTER PLANNING OF COMPLEX VASCULAR SURGERIES AND ENHANCING SAFETY IN CHILDREN

¹Sergio Assia-Zamora, ¹Nicos Kessar, ²Luke Smith, ²Kishora Minhas, ³Colin Forman, ²Jelena Stojanovic. ¹Guys St Thomas NHS Trust, ²Evelina Children's Hospital. *Great Ormond Street Hospital*; ²*Great Ormond Street Hospital*; ³*Royal Free Hospital*

10.1136/archdischild-2021-rcpch.165

Background 3D organ printing allows better surgical planning and enhances safety for complex cardiac and renal transplant surgeries in adults. We present the use of 3D printing of abdominal organs and vessels for two paediatric patients with complex renovascular disease who underwent aortic graft bypass and bilateral renal auto-transplant. To our knowledge, this is the first use of 3D printing for this cohort of complex patients.

Objectives To explore ways in which complex surgeries in children can be improved allowing for optimal multidisciplinary surgical planning, contributing to better consent process and enhancing patient safety.

Methods We used 2D abdominal MRI to create a 3D model of kidneys, abdominal aorta, IVC and pancreas. Segmentation, the process of converting 2D slice data CTA scans to 3D surface models, was completed in Materialise Mimics. This surface model was exported as an STL file and then printed using a Stratasys Objet260 Connex3 polyjet printer. Soluble support was used for minimal post-print clean up. All of this in the laboratory at Great Ormond Street Hospital for Children.

Results The first patient was a 7 year old girl with a background of neurofibromatosis type 1 who underwent left nephrectomy and had 7 angioplasties on the remaining right kidney. An aortic bypass was performed and the kidney was successfully auto-transplanted onto the right iliac vessels.