



Editorial

Paediatric bowel imaging special issue



The act of giving a patient a contrast agent to ingest in order to outline the gastrointestinal tract can reasonably be thought of as one of the earliest interventions in radiology [1]. Imaging of the gastrointestinal tract has come a long way since then but fluoroscopy and the plain abdominal X-ray are still important modalities for assessment of pathology in the paediatric gastrointestinal tract. There is no doubt that both will remain a mainstay of the imaging armamentarium but the aim of this special issue is to update the reader on the state-of-the-art in paediatric gastro-intestinal imaging and introduce a few technologies and techniques which are on the horizon of clinical practice.

Imaging the gastrointestinal tract in children presents a number of challenges to the radiologist. First and foremost is the subject. Children come in a range of sizes and with a range of behaviours. The first challenge is often to convince your patient to get on to the examination bed! From a technical point of view the smaller, thinner body of a child (on average) makes for an exceptional ultrasound subject, but conversely this same body has drawbacks for imaging with CT or MRI. The widespread use of CT in adult practice is still treated with caution in paediatrics due to legitimate concerns regarding ionising radiation exposure. In addition, both CT and MRI are challenging in the very young child where optimal bowel distension is desired for diagnosis, but is difficult to achieve when a child may need sedation or general anaesthesia. The presenting pathology is also complex and varied. A neonate with a distended abdomen is completely different to a teenager with abdominal pain. A working knowledge of embryology can be particularly useful with congenital conditions.

25% of inflammatory bowel disease presents in childhood [2]. The approach to imaging in paediatric IBD is different to adults and therefore the first section in this special issue focuses on imaging in paediatric inflammatory bowel disease. In the first paper, Greer assesses the impact of MR enterography (MRE) in paediatrics. MRE has superseded all other imaging modalities as the gold standard for inflammatory bowel disease and this is reflected in the new Porto group guidelines [3]. Dr Greer's paper also addresses future advances in MRE, in particular the methods being used to differentiate inflammation from fibrosis, which is often the key question for radiologists involved in the care of these patients. Dr Greer also discusses whether these newer sequences may be able to remove the need for gadolinium, which is pertinent given the recent concerns in the literature about the accumulation of gadolinium in the brain after MRI scans [4]. Drs Beal and Elliot then present the case for ultrasound in the imaging pathway for paediatric IBD. Children often make exceptionally good ultrasound subjects. When combined with improving technology and better knowledge of the sonographic appearances in IBD, bowel ultrasound is becoming an established modality in IBD imaging. Finally, in this

section we present a review of early onset IBD. This rare subset of IBD is the exclusive reserve of the paediatric radiologist and Dr Barber et al. review the latest knowledge on the genetic defects associated with these conditions and some of the unique challenges these young patients present for radiologists. They also explore how imaging can influence the potential treatments available for these patients.

In our section on GI intervention, Dr Patel provides a review of the various techniques available to the interventional radiologist when attempting GI access, placing manometry catheters and a range of other conditions and therapies involving intervention in the GI tract.

Children with bowel dysmotility often present a significant diagnostic and therapeutic challenge. Our section on imaging in bowel dysmotility focuses on the advances in MRI in assessment of bowel motility. Dr Menys et al. present imaging techniques currently being developed to assess adults with bowel dysmotility and invite the reader to apply these techniques to the paediatric population. We expect two future papers to address scintigraphy in the assessment of bowel dysmotility and the role of imaging in acute paediatric GI haemorrhage respectively.

Paediatric bowel imaging exists beyond the traditional radiographic and fluoroscopic techniques. In some areas, like IBD, it has already left them far behind. Whilst these traditional methods will not fade away, this special issue is designed to highlight the state of the art in paediatric bowel imaging and also to highlight areas where advances could be made. Many of you will be undertaking much of this work already, we hope you find some of these papers novel and are inspired to take on new areas of interest. To those who have little experience of the topic, we hope you enjoy a whistle-stop tour of this exciting and challenging area of radiology.

References

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