Editorial commentary

It is interesting to review the change in diagnosis of malrotation over the past decades. Originally, the barium enema was done to see where the cecum was positioned. Then there was a switch to the upper GI series to see where the duodenojejunal junction was positioned. In the 1980s there were a few papers showing duodenal obstruction on sonography. However, it was not until CT came into wider use that the orientation of the superior mesenteric artery and vein (SMA and SMV) was used to diagnose malrotation in adults! It was even applied to children using sonography (not to be confused with papers on the “whirlpool” sign of the volvulus itself). With this in mind, the following paper on malrotation is of interest – the title says it all. A normal sonogram does not exclude malrotation.

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Received: 27 April 2000
Accepted: 30 November 2000

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Abstract We present case reports of three recent patients to reinforce the argument that upper gastrointestinal series is the method of choice with which to document malrotation. It has been 9 years since there was a major discussion of this subject in the literature. Ultrasonography cannot confidently exclude malrotation. Radiographic study with contrast continues to be the best diagnostic tool.

Introduction

We present the diagnostic information from three patients as a reminder that, in the twenty-first century, upper gastrointestinal series with contrast remains the study of choice in the diagnosis of malrotation.

Case reports

Case 1

A 10-day-old girl presented with intermittent bilious vomiting. Ultrasonogram (Fig. 1a) showed superior mesenteric artery (SMA)/superior mesenteric vein (SMV) reversal. Upper gastrointestinal contrast study (UGIS) (Fig.1b) showed malrotation that was confirmed at surgery.

Case 2

A 7-day-old boy presented with bilious vomiting. Ultrasonogram (Fig.2a) showed a normal SMA/SMV relationship. UGIS (Fig.2b) showed duodenal obstruction. Malrotation was diagnosed, and confirmed at surgery.
Case 3

An 11-year-old boy had an episode of mild abdominal pain, triggering an ultrasound examination, but was essentially asymptomatic after this. Ultrasonogram (Fig. 3a) showed SMA/SMV reversal. Based on this, an UGIS (Fig. 3b) was performed, which was normal. The diagnosis of normal rotation was made.

Discussion

Case 1 demonstrates the tidy situation where malrotation is accompanied by reversal of position of superior mesenteric artery and vein. Case 2 shows how reliance on ultrasonography alone could have disastrous consequences. Case 3 demonstrates that not all with reversal have malrotation. Using the relative positions of the SMA and SMV to diagnose malrotation cannot be relied upon. An urgent UGIS is the investigation of choice.