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Isolated torsion of the fallopian tube in a premenarchal girl

Case report and review of the literature

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Abstract

A case is reported of an isolated torsion of the left fallopian tube in a 12-year-old premenarchal girl, and the relevant literature is reviewed. This would seem to be an infrequent cause of acute abdominal pain in girls, and is rarely diagnosed preoperatively. The correct treatment is detorsion of a viable tube, or salpingectomy if ischaemia and necrosis have occurred.

Key words Fallopian tube • Torsion

Introduction

Torsion of the fallopian tube is an uncommon cause of acute abdominal pain in women of reproductive age [9]. Since Bland Sutton's [4] first case report in 1890, a further 350 cases of adnexal torsion have been reported in the literature [6]. The majority of cases have been secondary to another pathological process, within either the tube itself or its associated ovary [14]. In contrast, isolated torsion of a previously normal fallopian tube in premenarchal girls seems to be a very rare event: we have been able to clearly identify only five reported cases in the literature [1, 5, 7, 10, 19].

We report a further case, and discuss the diagnosis and management of this condition.

Case report

A 12-year-old girl presented with a 16-h history of sudden-onset central abdominal pain associated with nausea and a single episode of vomiting. She had not yet had her first menstruation and there were no urinary symptoms. On examination, the patient had a temperature of 37.5 °C and tenderness in the periumbilical area. The remainder of her examination was normal, and she was admitted under the care of a physician with the provisional diagnosis of gastroenteritis.

The following day her pain started to radiate to the left iliac fossa. An abdominal ultrasound (US) scan was performed; this revealed a fluid-filled mass approximately 2 cm in diameter lying superior to the bladder in the midline (Fig. 1). The appendix was not seen, and the remaining abdominal and pelvic viscera were normal. The mass was thought to represent an inflamed urachal rest, although appendicitis and a localised ileus could not be excluded, and the patient was commenced on IV antibiotics.

Twenty-four hours later, in view of persistent pain, a surgical opinion was sought. The patient had developed signs of peritonism, with guarding in the suprapubic region and both iliac fossae. She was taken to theatre and

Fig. 1 Ultrasound scan showing midline cystic structure anterior to bladder (straight arrow) with surrounding free fluid, and contiguous tubular structure to the left (curved arrow)
Discussion

Torsion of the normal fallopian tube in isolation in a premenarchal female would seem to be a rare event. It is likely that a number of cases remain undetected, either due to spontaneous detorsion prior to seeking medical attention, or as a result of failure to explore a patient with resolving symptoms. Indeed, undiagnosed torsion with subsequent necrosis has been suggested as a cause of absence of a tube in an adult [11, 22]. The only common presenting feature is that of lower abdominal pain. Typically, this is relatively sudden in onset and initially mild to moderate in severity. Gastrointestinal symptoms are uncommon, but there is often mild dysuria and urinary frequency. Physical examination may reveal a tender adnexal mass on the symptomatic side.

Laboratory-based investigations and plain radiology are generally unhelpful; US was surprisingly not diagnostic in either our case or that reported by Evans [7]. Certainly, in our patient both ovaries were seen and noted to be normal: radiologists and surgeons need to be aware that this observation does not include an isolated tubal torsion. Whilst US has been diagnostic in tubal torsion [13] and the identification of torsion of accessory fallopian tubes [20], clinicians must have a high index of suspicion if the correct diagnosis is to be made prior to surgery.

A wide variety of aetiological mechanisms have been proposed, but none proven, to explain an isolated torsion of the fallopian tube. Evans [7] cited Auvray, who suggested that the spiral form of the fallopian tube in the fetus may persist in the child to serve as a predisposing factor. Other anatomical variations, including an abnormally long tube and mesosalpinx or an incomplete mesosalpinx, may increase the risks of or serve to accentuate a torsion [2, 8]. Additional hypotheses include venous congestion secondary to premenarchal hormonal activity [2], abnormal peristalsis of the tube secondary to autonomic dysfunction [8], and adhesions [15].

Isolated torsion of the right fallopian tube is consistently reported more commonly than that on the left: ratios ranging from 3:2 to 2:1 have been reported in both adults and children [3, 5, 15, 24]. In part, this may relate to a failure to explore those patients with left-sided pain whose symptoms eventually resolve. It has also been suggested that the bulk of the sigmoid colon may reduce the risks of a torsion on the left side [8, 15].

The correct treatment is surgery, with excision of the tube when obvious infarction has occurred. In cases when the tube is thought to be viable detorsion may be performed, although there is a theoretical risk of pulmonary embolism [23]. Usually, as in our case, by the time surgery is performed the tube is clinically nonviable. Following surgery for adnexal torsion the chances of conception are reduced, and the risk of an ectopic pregnancy in the remaining tube is increased 40 times when compared to the overall risk for the general population [12].

Interestingly, Shalev et al. [17] reported satisfactory results in 19 patients with adnexal torsion, 2 of whom were premenarchal, who were treated exclusively with simple detorsion. They reported no immediate complications and normal ovarian follicular activity on US examination in 15 out of 16 patients available for follow-up. At least 1 patient required emergency surgery for a bowel obstruction secondary to adhesions, which may have been related to necrosis of ischaemic adnexal tissue. These promising initial results warrant further, more detailed investigation.

Techniques such as endovaginal US have been used to diagnose fallopian tube dilatation [21] and torsion [18] in adults, but this technique would not be appropriate in the paediatric population. The increasing use of laparoscopy [16] in the assessment of paediatric patients with abdominal pain, however, may allow earlier diagnosis of adnexal torsion, enabling simple detorsion to be successfully and safely performed.

References