Primary Torsion of the Greater Omentum: A Report of Two Cases

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Citation

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Abstract

Torsion of the greater omentum may be primary or secondary. It is a rare cause of the acute abdomen, resulting when the greater omentum twists along its long axis. The aetiology of primary torsion of the omentum is not known though various predisposing factors have been identified. The diagnosis is typically made at surgery. Two cases of primary torsion of the greater omentum are presented both in patients with obese abdomens and the diagnoses being made at surgery intended for appendicitis. Histology shows omental congestion and haemorrhage.

INTRODUCTION

The acute abdomen with right-sided signs leads the surgeon to consider a list of possible diagnoses, but unlikely to be included in this list is primary torsion of the greater omentum. The number of cases reported in the English language literature is limited, but has been increasing. Presented here are two cases managed by the author followed by a brief review of the entity.

CASE REPORT

CASE 1

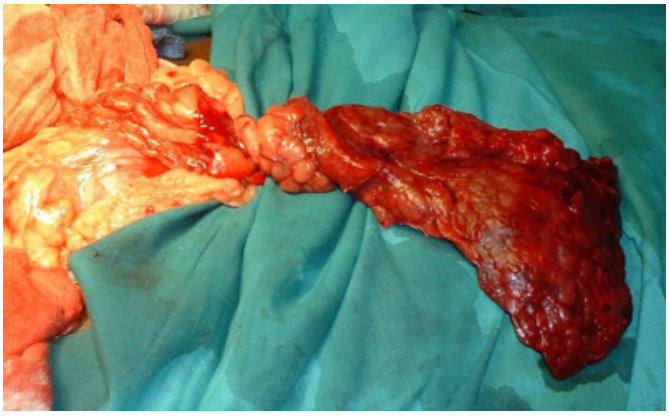
A 46-year-old male presented to hospital complaining of abdominal pain of two days duration. The pain was sudden in onset and constant in nature, being confined to the right side of the abdomen and maximal in the right upper quadrant. There was no associated vomiting, constipation or diarrhoea. He had no urinary tract symptoms. There was no recognised association of the pain with meals. He denied having any previous similar episodes of abdominal pain. He had no previous abdominal surgery.

On examination, he was afebrile; the abdomen was moderately obese, non-distended and tender in the right upper quadrant with mild right lower abdominal tenderness. There was no associated guarding or rebound tenderness. Abdominal x-rays were unremarkable. Blood studies showed his haemoglobin to be 15 g/dL and his white cell count was 12.3 x 10^9/L; serum urea and electrolytes and other blood investigations were normal. The abdominal ultrasound showed the gallbladder to be normal with no calculi, the pancreas was not clearly visualised.

During the time period in which he was being investigated and observed, the patient had progressive worsening of the pain and he developed localised peritonitis in the right lower quadrant. With a possible diagnosis of acute appendicitis he was therefore scheduled for surgery.

At surgery an ischaemic flap of greater omentum was discovered in the right upper quadrant of the abdomen, which was loosely adherent to the anterior abdominal wall and the ascending colon. After bluntly dissecting it off the loose adhesions, the segment of omentum was seen to have rotated 360° on a proximal pedicle (fig. 1). The gallbladder, liver, appendix and the rest of the bowel were normal. The pedicle was ligated and the segment of omentum excised. Recovery was uneventful.

Figure 1



Histology of the omentum showed vascular congestion and parenchymal haemorrhage, consistent with torsion.

CASE 2

A 55 year old male presented to hospital with right lower abdominal pain of three days duration. The pain was worsening in intensity and was not associated with any other abdominal symptoms. He had no previous surgery.

On examination, he was afebrile, the abdomen was obese, soft and tender in the right iliac fossa with associated guarding. An ultrasound of the abdomen was done prior to presentation to us. This showed a fluid collection in the right iliac fossa, a 1.2 cm thick tubular hypoechoic focus adjacent to the cecum and a somewhat pyramidal shaped echogenic, nonperistalsing area in the right lower quadrant that could represent a complex, possibly purulent extra-luminal fluid collection. His white cell count was 8.4 x 10^9/L; serum urea and electrolytes were normal.

These findings were thought to be consistent with a ruptured appendix and he was booked for surgery. At surgery an inflamed omental mass was noted lying adjacent to the appendix, which was then found to be torted on a proximal pedicle. The pedicle was ligated and the segment excised. Appendicectomy was also performed. Recovery was quick and uneventful.

Histology showed diffuse interstitial haemorrhage of the omentum and peri-appendicitis.

DISCUSSION

First described in 1899, primary torsion of the omentum is a rare cause of the acute abdomen[1,2,3,4]. Torsion of the omentum results when the greater omentum twists upon itself along its long axis with resultant compromise of its vascular supply[5]. Literature found on this condition is limited to case presentations and very small case series.

Torsion of the omentum may be classified as primary or secondary torsion. Primary torsion is said to occur when there is no pathological cause found. Secondary torsion is associated with other intra-abdominal pathology, which includes omental cysts, adhesions, hernias or tumors. Secondary torsion is more common than primary[5,6,7]. Primary torsion is unipolar with one end of the omentum free while secondary torsion is bipolar where the end opposite to the vascular pedicle is fixed to adhesions or some other pathological condition[5].

The aetiology of primary torsion of the omentum is not known but various predisposing and precipitating factors have been identified. Predisposing factors include anatomic malformations of the omentum (bifed omentum or tongue-like projections); accessory omentum; irregular distribution of omental fat; and anomalous veins that allow a fixed point for omental twisting[3,5,8]. The identified precipitating factors include local trauma; over eating with resultant hyperperistalsis (this induces omental displacement); sudden change in position; coughing and straining[3,5,8]. No predisposing factors were identified in either patient presented here.

The compromise of the blood flow to the omentum leads to haemorrhagic infarction and fat necrosis. There is a resultant serosanguinous fluid extravasation, which is characteristic of the condition[5]. The right side of the omentum is the most frequently involved portion, believed to be due to its increased length and mobility[1,2,9,10].

Primary omental torsion is more common in adults with only 15% of cases occurring in the paediatric age group[6]. Most patients are middle aged with a male predominance[1,5]. The patient population for primary omental torsion is usually obese[3,5,8]. Both cases presented here had an obese abdomen.

The patients may present with acute abdominal pain of more than two days duration, usually confined to the right abdomen, more commonly in the lower abdomen[5,6,9]. The pain is constant and non-radiating, gradually increasing in intensity. Physical examination usually shows evidence of local peritonitis in the right iliac fossa and a mass may be palpable[2,5]. A mild leukocytosis is not uncommon, as seen in some of the case reports reviewed[1,5,7] and in one of the patients presented here. Plain abdominal x-rays are non-specific. The Most common clinical diagnosis made in these patients is acute appendicitis. Unlike acute appendicitis however, these patients usually do not have any significant gastrointestinal symptoms, and their clinical appearance is not consistent with appendicitis of that duration[6,9]. Other differential diagnoses include acute cholecystitis, torsion of an ovarian cyst, perforated peptic ulcer and acute sigmoid volvulus. The patients presented in this case report fit the typical picture of primary torsion of the omentum, but as is also typical the diagnosis was only made at surgery.

Diagnosis of this condition on computed tomography scans (CT) has been described with characteristic signs. CT findings include a large abdominal mass of fat density; the presence of concentric linear strands that converge towards

the centre of the torsion is considered pathognomonic. The finding of a vascular pedicle extending from the periphery of the mass to the inferior border of the stomach ventral to the colon may help differentiate torsion of the omentum from other fatty tumors[4,9]. With the increased use of CT in assisting in the diagnosis of questionable appendicitis, omental torsion may be diagnosed more often radiologically. The ultrasound scan was not helpful in case 1, however in case 2 the hypoechoic, pyramidal appearance of the torted omentum was clearly identified but the significance not recognised. Ultrasound scanning in other adult case presentations has not been shown to be useful[11,12].

Surgical excision of the involved omentum is the treatment of choice. As discussed previously, most of these patients will come to surgery with a diagnosis of acute appendicitis. However the presence of serosanguinous fluid and a normal appendix should encourage exploration of the omentum. The serosanguinous fluid is almost a universal finding[5,8].

CONCLUSION

Primary torsion of the greater omentum is a rare cause of the acute abdomen with right sided signs. This entity is still commonly diagnosed at surgery performed for appendicitis and revealing serosanguinous intra-peritoneal fluid. CT can however make the diagnosis preoperatively.

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