CASE REPORT

Omental infarct in a hernia: an unusual cause of paediatric acute scrotum

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SUMMARY

We report a case of paediatric acute scrotum due to segmental haemorrhagic infarct of the omentum secondary to strangulation in the left inguinal hernia in a toddler as initial presentation after hernia being noticed by mother once earlier. A 4-year-old boy with non-traumatic acute left scrotum who had a history of left inguinal swelling once earlier presented with massively swollen, painful and discoloured left hemiscrotum extending into the groin simulating acute testicular torsion. Interestingly, there was a segmental omental infarct which precipitated the emergency and had ipsilateral testicular ascent and atrophy as long-term sequelae. Strangulated segmental omental infarct is a rare cause of acute abdomen/scrotum in children. Omentum is a very rare content of inguinal hernia in a toddler and infarct is exceptional. The diagnosis is usually not established before surgery in children. It should be included in the differential diagnoses of acute scrotum, especially in patients with untreated inguinal hernia.

BACKGROUND

Omental incarceration in paediatric inguinal hernia does not appear to be well described previously. Acute scrotum has not been described earlier as initial presentation of complicated inguinal hernia in all age groups. Acute haematocele is commonly associated with direct testicular trauma or infrequently accompanies blunt abdominal injury in the presence of a communicating hydrocele. The essentials of management remain the same whatever the cause of the acutely painful scrotum.¹

CASE PRESENTATION

A 4-year-old boy presented with a history of sudden severe progressively increasing painful left scrotum of 12 h duration. He did not have any local trauma, urinary or systemic symptoms. His mother had noticed a left inguinal swelling only once while he was a young baby. He was systematically well with soft non-tender abdomen but having fullness in the left inguinal area. The site, size, lie and reflex of the right testis were normal. Left hemiscrotum was hugely distended, tense, tender fluctuant but non-transilluminant and the left testis could not be palpated.

He had a long complicated medical history. He was born at 30 weeks of gestation by emergency caesarean section for placenta previa with a birth weight of 1.4 kg. He had oesophageal atresia and tracheo-oesophageal fistula. He underwent primary repair at birth and required ventilatory support for

6 weeks. Subsequently he had developed chronic lung disease and severe tracheomalacia for which he required aortopexy twice with thymectomy at the revision surgery as he had recurrent apnoea despite aortopexy. He had severe gastro-oesophageal reflux and recurrent respiratory tract infections. He also had recurrent herpetic infections.

INVESTIGATIONS

Urine dipstick was normal. Complete blood count, coagulation screen, renal, liver and bone profiles were all within normal limits.

DIFFERENTIAL DIAGNOSIS

An acute left testicular torsion, left acute haematocele, incarcerated left inguinal hernia and acute strangulated hernia were considered in view of previous history of left inguinal hernia noted by his mother once and there was tenderness and fullness over the left inguinal region in addition to the left hemiscrotum.

TREATMENT

A decision to explore the left hemiscrotum and proceed was taken. At operation, a jet of haemorrhagic fluid under tension hit the operating theatre light on opening the tunica. There was a segmental haemorrhagic infarct of the omentum in the left hemiscrotum and a little traction on it showed a normal omental tissue above prolapsing from the hernia sac. Left testis was pale and situated in the upper part of the scrotum (figure 1). Surgical resection of the affected omentum and reduction of the rest of the omentum back into the peritoneal cavity together with excision of incidental hydatid cyst of Morgagni concluded the scrotal procedure and the wound was closed. Left inguinal herniotomy was carried out using an inguinal skin crease incision under same anaesthesia.

OUTCOME AND FOLLOW-UP

His postoperative recovery was smooth. Histopathology examination of the excised omentum showed haemorrhagic infarct of the omentum with patchy inflammatory cell infiltration, dilated vessels and focal fibrinoid necrosis of the vessel walls. Although this fibrinoid necrosis might have been caused by a mechanical obstructive phenomenon, this pattern would be unusual and it was, therefore, important to exclude vasculitis despite his age and his serum antineutrophil cytoplasmic antibody was tested which was normal and his immune function tests were normal as well.

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Figure 1 Schematic diagram showing operative findings.

A 6-week follow-up suggested ascent of the left testis and smaller size. He underwent left orchidopexy subsequently. At 8 years follow-up, in view of the atrophy of the left testis following acute scrotum, parents are keen on correction of the right testis, for which he is being considered.

DISCUSSION

Omental infarct in this case appears secondary to strangulation at the external inguinal ring in the inguinal hernia which is exceedingly rare in children. Omental infarct without strangulation in a hernia is certainly a mimicker of acute abdomen in general and appendicitis in particular.² Omental infarct is a self-limiting and benign disease in the abdomen but it can mimic acute scrotum and create complications of testicular ascent and atrophy in the scrotum.^{3–10}

Although in our case the mother had noticed a left groin swelling once in early infancy, it could not be demonstrated during several hospital admissions and operations that he had had. Even at this admission he was quite well systemically, and the omentum as a content getting into acute presentation was well beyond our imagination and perplexing preoperatively.

In our case, the omentum was trapped in the hernia which is surely the most likely explanation for the omental necrosis due to mechanical incarceration secondary to compression at the external inguinal ring and the remaining omentum inside the inguinal canal was viable. Often in other incarcerations gentle traction on the infarcted contents reveals viable contents in the neck of the hernia just as in our case. This is a usual reminder of the anatomical fact that in paediatric inguinal hernia the external inguinal ring is often the site of strangulation rather than the internal ring as in adults.

Although the pathologist labelled it as idiopathic omental infarction due to the unusual fibrinoid necrosis which might suggest an autoimmune, allergic or hypertensive process but vasculitis screen was negative in this case which again suggests that strangulation may mimic an idiopathic omental infarct. Other cases of idiopathic omental infarction have described a haemorrhagic necrosis. It does not seem clear that fibrinoid necrosis by itself makes a simple mechanical cause unlikely. The dilated vessels described by the pathologist were venous and a venous thrombosis is very common in a strangulated hernia rather than an idiopathic omental infarct in which it is arterial dilation. Venous congestion and capillary rupture due to high intravenous pressure makes the infarct haemorrhagic rather than true idiopathic haemorrhagic infarct of the omentum.

We are therefore not convinced that this was an idiopathic omental infarct which happened coincidentally inside a hernia rather than strangulated omentum in a paediatric hernia. Strangulated omentum in a paediatric hernia is exceptionally rare and we emphasise this aspect more rather than focusing on the speculative diagnosis of idiopathic omental infarction by the pathologist.

There are no investigations of choice save prompt surgical opinion and exploration.¹ Although abdominal omental infarcts can be diagnosed by colour Doppler and CT and conservative treatment may be successful, surgical treatment is the only option available in scrotal involvement. Strangulation of an omentum with a haemorrhagic infarct is an interesting emergency presenting as an acute scrotum in a paediatric patient and needs urgent exploration.

Optimal management involves early recognition, prompt drainage of the acute haematocele, surgical resection of the involved omentum and repair of the communicating hydrocele/haematocele should follow through high inguinal approach.

In retrospect, we feel that inguinal herniotomy while the scrotal wound was open and if the position of left testis still remained high, then subdartos pouch orchidopexy would have been a better option rather than dealing with both regions independently. Testicular ascent and atrophy are well-known complications of strangulated inguinal hernias, and with acute scrotum these effects will be proportionately increased. However, it may have been worthwhile fixing both testes even on second surgery for prophylaxis for his one remaining normal testis.

Learning points

- ▶ Strangulated omentum in paediatric hernia is exceptionally rare because of acute abdomen/scrotum in children.
- ▶ Omentum is a very rare content of inguinal hernia in a toddler and its haemorrhagic infarct is an exceptional complication.
- ▶ The diagnosis is usually not established before surgery in children and only evident at exploration.
- ▶ It should be included in the differential diagnoses of acute scrotum, especially in patients with untreated inguinal hernia.
- ▶ However, it may have been worthwhile fixing both testes even on second surgery for prophylaxis for one remaining normal testis.

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