Delayed laparoscopic mesh infection presenting as an abdominal mass

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ABSTRACT

A 56-year-old man presented with a delayed mesh infection 8 years following an elective laparoscopic totally extraperitoneal (TEP) bilateral hernia repair. Sterile pus was drained percutaneously as a temporising measure prior to removal of the right-hand mesh; the left-sided mesh was adherent to the femoral vessels and minimally contaminated. Delayed mesh infection is a rare occurrence. This case is the fourth example and the longest following initial operation. Removal of the infected mesh is advocated.

KEYWORDS

Totally extraperitoneal mesh – Mesh infection – Extraperitoneal collection

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Delayed mesh infection following laparoscopic inguinal hernia repair is rare with three previous reported cases reported. No obvious precipitating factors are associated with infection and cultures may not yield any microorganisms. Removal of the infected mesh is advocated but this can be difficult when it is adherent to the femoral vessels.

Case History

A 56-year-old man presented with a 2-month history of an enlarging painful mass in the right iliac fossa, associated with constipation, anorexia and a weight loss of 5kg. He had undergone a laparoscopic totally extraperitoneal (TEP) bilateral hernia repair (standard polypropylene mesh) 8 years previously. On examination, he was afebrile and a smooth 10cm mass arising from his right iliac fossa was noted, with no organomegaly and intact hernial orifices. Blood tests were unremarkable apart from elevated C-reactive protein (37mg/l, normal: <6mg/l) and low serum albumin (32g/l, normal: 35–50g/l) levels. Urgent computed tomography (CT) revealed a 12cm x 5cm thick-walled, septated collection in the extraperitoneal space (Retzius' space) containing surgical clips (Fig 1).

The patient was commenced on piperacillin and tazobactam for a presumed mesh infection prior to ultrasonography guided drainage, which produced sterile pus. His collection resolved and he underwent a diagnostic laparoscopy six weeks later. Laparoscopic assessment of the peritoneal cavity did not reveal any intra-abdominal component to the collection and open exploration of the preperitoneal space revealed a large cavity arising from the left inguinal region extending across the midline. The left

inguinal mesh was floating freely in a 'sea of pus' although there was minimal contamination of the right-hand side. The mesh was removed, a drain was placed for 48 hours and the patient completed a course of oral antibiotics. Review at six weeks showed no evidence of collection or hernia and microbial swabs have yielded no growth.

Discussion

Mesh infection following hernia repair is an uncommon occurrence with an incidence of 1.2% for open procedures¹ compared with 0.1–0.2% for laparoscopic intervention.^{2,5} Both the mesh composition and method of fixation have been implicated in the development of infection.⁴ The decreased infection rates seen with laparoscopic repair may relate to the smaller incisions that are not over the mesh fixation sites, minimal tissue handling and improved haemostasis.⁵ Most mesh infections occur in the immediate postoperative recovery period and late onset mesh infection is thought to be a rare occurrence.⁶ The incidence of late mesh repair following open repair is 0.005%⁷ and is unknown following laparoscopic repair as only three cases exist in the literature: an infection at ten months,⁸ at five years⁹ and at seven years.⁵

The main management dilemma relates to the timing and type of intervention to drain the collection. We performed a temporising percutaneous drainage procedure as there was a question of an intra-abdominal source of the infection. In addition, exploration of the groin may result in breaching the peritoneum.⁹ In this case, laparoscopic peritoneal assessment was unremarkable and the subsequent midline approach to the preperitoneal space identified a clear source

Figure 1 Coronal and transverse computed tomography showing a large U-shaped collection in the preperitoneal space. Note the tacks in situ (which show as white dots in the collection).

of infection around the left mesh (which was removed easily) with tracking of the infection to the contralateral side. The second dilemma raised by this case relates to removal of the right-sided mesh. As it was firmly adherent to the femoral vessels and there was no peritoneal inflammation, the mesh was left in situ, with irrigation and antimicrobial cover. Mesh removal is advocated to remove the source of sepsis and is associated with a 5% risk of subsequent hernia recurrence.¹⁰

Conclusions

Delayed mesh infection occurring after laparoscopic hernia repair is a rare occurrence with no obvious precipitating

factors. At eight years, this case represents the longest time interval prior to infection following a TEP repair. We recommend CT assessment of the extent of the collection and advocate prompt drainage prior to definitive removal of the infected mesh.

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