Infection of laparoscopically inserted inguinal hernia repair mesh following subsequent emergency open surgery: a report of two cases

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ABSTRACT

We present two cases of laparoscopically inserted mesh for inguinal hernia repair that became infected following emergency open bowel surgery. We believe that there is an increased risk of infection due to the larger size of mesh used in the laparoscopic repair but also due to the patient not volunteering the information because of the minimally invasive nature of the procedure.

KEYWORDS

Inguinal hernia – Mesh, surgical – Surgical procedure, laparoscopic

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Both total extraperitoneal (TEP) and transabdominal preperitoneal laparoscopic hernia repairs are commonly performed in the UK. The complications of these repairs (such as infection, bleeding, chronic pain, recurrence and testicular atrophy) are well recognised. We present two cases of laparoscopically inserted mesh for inguinal hernia repair that became infected after subsequent emergency abdominal surgery and required removal.

Case History 1

A 57-year-old man presented with right iliac fossa pain and localised peritonism. His inflammatory markers were raised and a diagnosis of appendicitis was made. At open operation, a severely inflamed appendix was removed. The patient had a TEP repair of a recurrent right inguinal hernia two years previously but did not volunteer this information on admission. The scars from this repair were not visible. Intraoperatively, it was noted that the Lanz incision had transgressed the right sided abdominal wall mesh even though the incision was in the correct position. The wound was closed primarily. The patient made a good recovery and was discharged home two days later.

However, he was readmitted four weeks postoperatively with a wound infection. Diphtheroids were cultured from a wound swab. He underwent formal incision and drainage. He was readmitted at six weeks with a further infection. Computed tomography (CT) revealed no collection but suggested a soft tissue reaction consistent with mesh infection. The infected mesh was removed subsequently through an extension of the appendicectomy incision. The wound was

left open and a vacuum dressing was applied to enhance healing.

The patient was reviewed in the outpatients clinic two months later. The wound had healed and there was no sinus, sepsis or recurrence of his hernia.

Case History 2

A 90-year-old man, with a past medical history of an abdominal aortic aneurysm repair, hypothyroidism, paroxysmal atrial fibrillation and a transient ischaemic attack, presented with uncontrollable bleeding per rectum. His haemoglobin was 7.6g/l. Emergency gastroscopy, flexible sigmoidoscopy and CT angiography failed to identify an active bleeding site. He required an emergency left hemicolectomy for extensive sigmoid diverticular disease, performed through a lower midline incision. He made an uncomplicated recovery. During his emergency admission, there was no mention of a TEP hernia repair, which he had five years previously, for a large pantaloon right inguinal hernia.

Two months following his emergency surgery, the patient developed a discharging sinus at the inferior end of his wound. *Pseudomonas aeruginosa* was cultured from a wound swab. The patient underwent exploration under local anaesthetic, when mesh was encountered and partially removed. The wound was left to heal by secondary intention. However, sepsis continued and CT was requested four months later. This revealed an inflammatory mass with gas bubbles in the anterior abdominal wall on the right iliac fossa consistent with an infected mesh, which was then totally removed. The wound was left open, packed in the first 48

hours and then treated with a vacuum dressing. After several months the sepsis has settled although the patient remains with an intermittently discharging suprapubic sinus.

Discussion

Favourable results, both short-term and long-term, have been shown with laparoscopic hernia repair compared to open mesh repair.¹⁻⁵ TEP repair was reported to have reduced postoperative stay, pain and earlier return to physical activity when compared to open mesh repair.¹ More recent studies have shown low recurrence rates at five-year follow up and less chronic pain with laparoscopic inguinal hernia repairs compared to the open approach.^{2,3}

To our knowledge there are no case reports of a laparoscopically inserted mesh for inguinal hernia repair that has become secondarily infected from subsequent emergency open surgery. We believe that there is a higher risk of secondary mesh infection following a laparoscopic approach for inguinal hernia repair compared to an open repair for three reasons. Firstly, the mesh used in the laparoscopic hernia repair is considerably larger than with the open approach: the surface area of the mesh commonly used for

the open approach at our institution is 42.75cm² whereas that in the laparoscopic approach is 172.8cm². Secondly, in the emergency setting the patient may not volunteer the information of a previous laparoscopic hernia repair. This may be because the patient is too unwell at the time or may have forgotten the repair because of its minimally invasive nature. Thirdly, with the laparoscopic approach there is no obvious scar that a clinician could interpret as a previous inguinal hernia repair.

We suggest that in the emergency setting, where open surgery is necessary, every surgeon is particularly vigilant in enquiring about previous laparoscopic hernia repairs and examines thoroughly for scars.

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