

CASE REPORT

Asymptomatic mesh infection 6 years after laparoscopic totally extraperitoneal inguinal hernia repair: A rare case report

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Abstract

This report aims to discuss a case of asymptomatic mesh infection 6 years after laparoscopic totally extraperitoneal (TEP) inguinal hernia repair and to reveal that the risk of mesh infection may occur after a long period of this surgery. This report is also intended to suggest surgeons pay more attention to the follow-up of such patients and to be aware of the possibility of mesh infection to assist in early diagnosis and treatment. A 63-year-old male patient, who underwent TEP inguinal hernia repair 6 years ago for right inguinal hernia, fell down accidentally 2 weeks ago. Enhanced computed tomography (CT) showed right lower abdomen cystic lesions, so he underwent laparoscopic surgery during which abscess caused by delayed mesh infection was found. After removing the mesh and abscess, he was discharged. The risk of mesh infection after TEP inguinal hernia repair is low, but it can last for more than 6 years and can even be asymptomatic as long as the mesh remains in the body.

KEYWORDS

delayed mesh infection, hernia repair, totally extraperitoneal

1 | BACKGROUND

The TEP hernia repair, first performed by Duluq in 1992, is one of the three current leading techniques in the inguinal hernia repair. The most important advantage of this technique is minimal invasive access without the need to open the peritoneum, which carries a lower risk of abdominal organ injury. TEP inguinal hernia repair is a minimally invasive procedure that has become more widely applied in the last twenty years, with approximately 20 million herniorrhaphy procedures performed worldwide

each year. With the wide application of this procedure,¹ complications related to mesh have become increasingly prominent, and mesh infection is one of the challenging complications after surgery. However, a review of articles about mesh infection from 1970 to 2021 revealed only a few case reports, and no other studies on asymptomatic mesh infection were found. The case in this study is very rare. Delayed asymptomatic mesh infection was found in a patient who underwent TEP inguinal hernia repair 6 years prior. Then, a successful procedure was performed to remove the mesh and abscess.

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2 | CASE PRESENTATION

A 63-year-old male patient presented to the outpatient clinic with the chief complaint was the discovery of cystic lesions in the right lower abdomen for 2 weeks. He had no systemic symptoms. There was no history of smoking and diabetes. He underwent TEP inguinal hernia repair 6 years ago for a right inguinal hernia in our hospital and implanted with a 10×15 cm hydrophilic anatomical mesh. No recurrence of inguinal hernia or seroma was found after the surgery. He fell down carelessly 2 weeks ago. The laboratory reports except for a low ALB level (35.8 g/L, normal range 40–55 g/L). Other blood test results were within normal ranges. A contrast-enhanced CT scan showed a 4.02 cm×10.57 cm×5.80 cm well-defined cystic low-density image in the right lower abdomen, which beside the cecum. (Figure 1). Contrast-enhanced MRI also showed a cystic abnormal signal shadow in the right lower ventral-pelvic cavity; however, its relation to the anterior abdominal wall has yet to be identified.

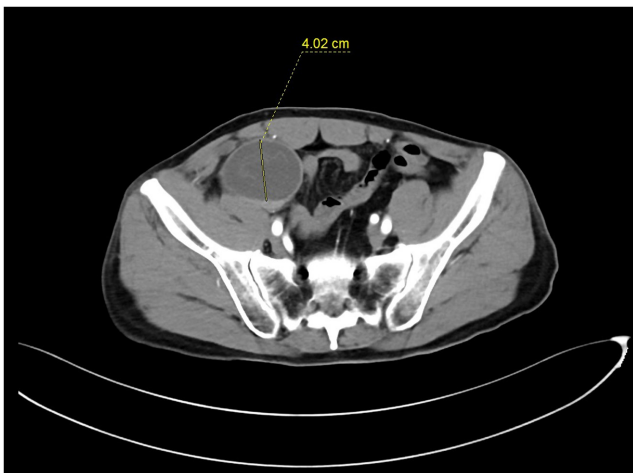


FIGURE 1 Transverse section computed tomography (CT) image shows cystic low-density image beside the cecum of the right lower abdomen and the right side of the pelvis

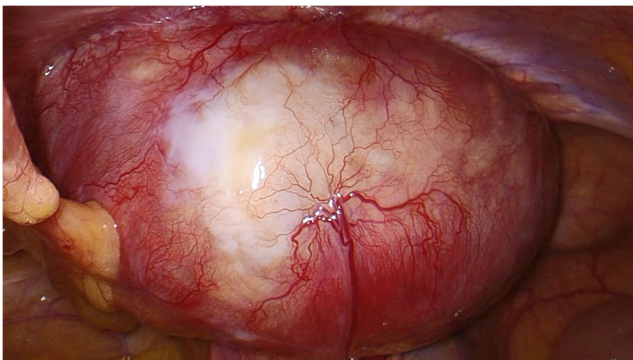


FIGURE 2 Round mass outside the peritoneum in the right inguinal area

3 | TREATMENT THROUGH SURGERY

Cystic lesion was found in the abdominal cavity before surgery, so laparoscopy was performed. A round mass outside the peritoneum in the right inguinal area was seen during the operation (Figure 2), but it was not adhered to the appendix, cecum, or other organs. After cutting the peritoneum along the edge of the mass, gray-white pus was overflowing. The mesh was wrapped by the wall of the abscess and adhered to the blood vessel of the right spermatic cord (Figure 3). The abscess wall and the mesh were removed (Figure 4). The peritoneum was sutured, and a drainage tube was placed on the wound outside the peritoneum. No specific pathogenic microorganisms were found in the mesh or pus, and

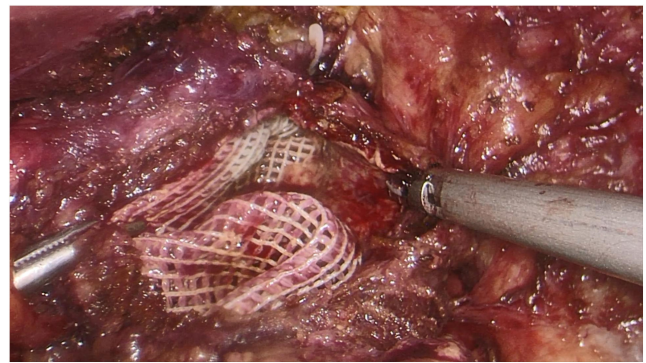


FIGURE 3 Mesh was wrapped by the wall of the abscess and adhered to the blood vessel of the right spermatic cord

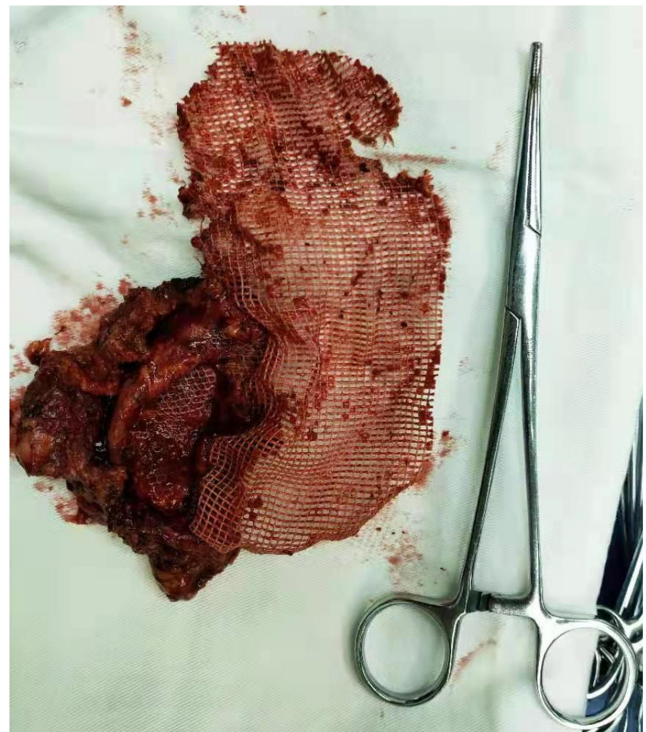


FIGURE 4 Removed mesh

no obvious complications were seen in this patient when discharged from our hospital. In addition, no sign of hernia recurrence was seen after the operation, and no abnormality was found by CT scan after 1 month.

4 | DISCUSSION

Compared with open hernia repair, TEP inguinal hernia repair is associated with a lower risk of mesh infection. The reported occurrence of mesh infection is 0.7%–2%.^{2,3} Delayed mesh infection generally refers to infection after 2 months. In some cases, the risk can persist for several months or years. However, the occurrence of delayed mesh infection is very low.⁴ Most delayed mesh infections can be easily diagnosed according to the clinical manifestations, which are inflammatory response for several months to several years after mesh placement, pus accumulation in local areas, ulceration, sinus formation, and even mesh exposure. In this case, the delayed mesh infection was asymptomatic and found by chance. Therefore, delayed mesh infection was difficult to diagnose at the early stage, as few cases have been reported.

In this case, infection was controlled after removal of the mesh, and follow-up showed no secondary infection of the incision or hernia recurrence. Theoretically, removal of the mesh could lead to recurrence of the hernia. However, when we removed the mesh, we found dense scarring beneath it. The biological nature of the mesh causes infiltration into fibrous tissues in local areas, which leads to scarring. This is why no recurrence of inguinal hernia was found during postoperative follow-up. Fawole et al.⁵ also found that the recurrence rate of delayed mesh infection after mesh removal was less than 5%.

To the best of our knowledge, this is the only case of asymptomatic mesh infection associated with inguinal hernia repair six years after the first repair. The cause of delayed mesh infection has yet to be identified and may be related to patient differences. However, further study is needed. Our study is also intended to raise the awareness of doctors to pay more attention to the follow-up and be aware of the possibility of mesh infection in patients undergoing inguinal hernia repair with mesh insertion to help diagnosis and treatment at the early stage.

AUTHOR CONTRIBUTIONS

Zhiwang Li and En Li wrote the main manuscript text. En Li and Haijing Zeng and Zhiwang Li participated in the operation. Yuping Liu and Zuguang Wu prepared Figures 1–4. All authors read and approved the final manuscript.

ACKNOWLEDGMENTS

None.

CONFLICT OF INTEREST

The authors declare that they have no competing interests.

DATA AVAILABILITY STATEMENT

All data and material are included in this published article.

ETHICAL APPROVAL AND CONSENT TO PARTICIPATE

Written informed consent was obtained from the patient for publication of this case report and any accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal. Since no human experimentation was performed, no approval by an ethics board was required.

CONSENT

The patient in this study signed informed consent regarding publishing their data and photographs.

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