Inguinal Hernia with Tuberculous Peritonitis: A Case Report and Literature Review

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Abstract

A rare case of inguinal hernia with tuberculous peritonitis is described, as well as a review of the pertinent literature. A 56-year-old male patient admitted to our emergency department because of reducible mass presenting in his left inguinal region. After preoperative preparation, we did a laparoscopic totally extraperitoneal (TEP) hernia repair for this patient. During TEP, we unexpectedly found tuberculous peritonitis, which was confirmed by postoperative pathology. With this case report and review, we hope the relevant knowledge about such rare situation, the inguinal hernia coexist with tuberculous peritonitis, could be augmented, and helps might be offered on early diagnosis and treatment of abdominal tuberculosis.

Keywords: Hernia; Tuberculous Peritonitis; TEP; Laparoscopy

Introduction

TEP herniorrhaphy has been recognized as a treatment option for inguinal hernia and associates with shorter hospital stay, quicker return to normal activities or work, lower incidence of total postoperative complications and urinary problems in patients with inguinal hernia [1,2]. However, inguinal hernia with tuberculous peritonitis is rare [3]. We describe a case of inguinal hernia with tuberculous peritonitis in a 56-year-old male patient. The literature involving inguinal hernia with tuberculous peritonitis is reviewed.

Case report

A 56-year-old male patient without any relevant medical history, admitted in our emergency department due to 4 cm x 4 cm mass presenting in his left inguinal region on November 14th, 2013. Admission examination revealed a reducible mass within the left inguinal region. It is soft on palpation with no descending into scrotum. On supine position, the mass was reducible and completely backed into abdominal cavity spontaneously. The abdomen was soft, and no tenderness or rebound tenderness was detected. The bowel sound was normal, and shifting dullness was negative by percussion. Preoperative routine tests showed the blood cell count, coagulation function, liver and renal function, electrolytes and other biochemical parameters were within the normal range. Chest X-ray revealed no suspicious pulmonary nodule, and HIV test was negative.

After preoperative preparation, we did a laparoscopic totally extraperitoneal hernia repair under general anesthesia for this patient on November 18, 2013. At first, we established the preperitoneal space and confirmed...
the diagnosis of left inguinal hernia. Because the hernia sac is too large and seriously adhering to spermatic cord, we were not able to fully pull it back into preperitoneal space. So we ligated the proximal hernia sac, cut it off, and left distal part opened. Then, we unexpectedly found that the peritoneum of distal hernia sac was studded by miliary grey nodules. TEP was quickly completed soon after implanting of 10x15cm polypropylene mesh into the preperitoneal space. And then, we deployed an umbilicus Trocar into the abdominal cavity for further exploration. The ascites was medium in volume and green in color. Adhesions existed in small intestine, omentum and abdominal wall. Similar gray nodules as we detected in hernia sac were found extensively scattering on the surface of peritoneum (Figure.1). Reviewing patient’s history, blood biochemical and chest radiograph, no positive evidence was of value for the TB diagnosis. For a definitive diagnosis, we sampled a small piece of peritoneal tissue for pathological investigation. The ascites was also collected for cytology test and acid-fast stain. 6 days after TEP, the pathological investigation finally confirmed the diagnosis of tuberculosis peritonitis. Although the presentation of abdominal TB in inguinal hernia sac is very rare clinic scenario [3], but what surgeons should always keep in minds is the chronic cough due to TB is one of the risk factors contribute to hernia [5]. John L [3] reported an 8 year old boy with tuberculosis content in his left hernia sac. The hernia sac was studded with tubercles just as we found in our case. After the dissection of hernia mass from critical structures, a high ligation of the sac was performed during his procedure that follows the principle of pediatric herniorrhaphy. Gurudutt B [5] also reported a case of right indirect herniorrhaphy for the reason of the incarceration of omentum tissue with TB infection. In his procedure, he abandoned the application of mash due to the non-viable omentum tissue and likelihood of the locational infection.

The concerns about hernia repair failure due to the mesh infection results from regional bacterial spread is the most important excuse for abandonment of mesh application in the setting of suspicious infection condition. But there is no sufficient evidence to prove such concerns [6]. Bessa SS [6] applied prosthetic mesh in 234 emergency cases of acutely incarcerated and/or strangulated groin hernia, which were caused by variety reasons. His exclusion criteria are only about presentations of frank pus or fecal matter within the sac, or generalized peritonitis. The meta-analysis from Mavros MN [7] shows the general incidence of prosthetic mesh infection is 5.0%. However, the infection rate exists in incarceration and/or strangulation hernia patients are as low as 0.3%. Similarly, only 0.5% of mesh infections was documented in Bessa’s series [6]. All above date makes us believe that as long as no certain evidence of infection was obtained, the prosthetic mesh should become a plausible option.

Figure 2
Discussion

TEP, as a pre-peritoneal repair method, a large patch was required to cover the entire myopectineal orifice, and repair the direct, indirect and femoral hernia simultaneously. Currently, TEP is well accepted by hernia surgeons all around the world. During this TEP procedure, we accidentally found co-exist tuberculous peritonitis, which was confirmed by postoperative pathological and cytological investigation. Based on our findings, the patient was promptly received anti-tuberculosis therapy soon after operation. Patient’s quick recovery was archived without any delay.

Norman OM [4] retrospectively analyzed his 662 cases of hernia repair operations, and found out the incidence of unusual hernia contents presented in Hernia Sac is about only 1.05%. But occasionally, co-exist ascites or peritoneal implants is inevitably encountered during hernia sac resection. Serous or serofibrinous exudation presented in the sac is generally a result from subacute inflammation course. It is a helpful diagnostic clue for tuberculosis pathogenesis. Certainly, if the classic miliary nodules were detected, the abdominal TB should be highly suspected.

The date about medical history, physical examination, blood biochemical test and chest X-ray from this patient gave us no clue for the tuberculous peritonitis. HIV test is also negative. Without the typical presents of tuberculous peritonitis such as abdominal pain, mass or abdominal dough sensation, it is normally hard to make the diagnosis of abdominal TB before operation [3]. However, our intraoperative exploration combined with postoperative pathologic investigation finally confirmed the diagnosis of tuberculosis peritonitis. Although the presentation of abdominal TB in inguinal hernia sac is very rare clinic scenario [3], but what surgeons should always keep in minds is the chronic cough due to TB is one of the risk factors contribute to hernia [5]. John L [3] reported an 8 year old boy with tuberculosis content in his left hernia sac. The hernia sac was studded with tubercles just as we found in our case. After the dissection of hernia mass from critical structures, a high ligation of the sac was performed during his procedure that follows the principle of pediatric herniorrhaphy. Gurudutt B [5] also reported a case of right indirect herniorrhaphy for the reason of the incarceration of omentum tissue with TB infection. In his procedure, he abandoned the application of mash due to the non-viable omentum tissue and likelihood of the locational infection. The concerns about hernia repair failure due to the mesh infection results from regional bacterial spread is the most important excuse for abandonment of mesh application in the setting of suspicious infection condition. But there is no sufficient evidence to prove such concerns [6]. Bessa SS [6] applied prosthetic mesh in 234 emergency cases of acutely incarcerated and/or strangulated groin hernia, which were caused by variety reasons. His exclusion criteria are only about presentations of frank pus or fecal matter within the sac, or generalized peritonitis. The meta-analysis from Mavros MN [7] shows the general incidence of prosthetic mesh infection is 5.0%. However, the infection rate exists in incarceration and/or strangulation hernia patients are as low as 0.3%. Similarly, only 0.5% of mesh infections was documented in Bessa’s series [6]. All above date makes us believe that as long as no certain evidence of infection was obtained, the prosthetic mesh should become a plausible option.
Usually, for the primary hernia cases without preoperative abnormal finding, TEP is always the first line solution based on our single center experience, and TAPP is preferred in the recurrence cases. Simons MP [8] also suggested that TEP is superior to TAPP when dealing with the primary inguinal hernia, especially in the hands of experienced laparoscopic surgeons. Moreover, TEP possesses less complication than TAPP [9]. From this case, we got the following enlightenments:

1. The use of Ultrasonic and CT could help us to explicit the conditions of peritoneum and hernia sac before operation [10]. We routinely detect hernia sac with ultrasound to identify the existence of peritoneal effusion, suspicious content, abscess, or sliding hernia. According the ultrasonic report, a certain pattern of tension-free herniorrhaphy could be chose rationally, which is better meet the ‘Individualized Principle’.

2. During TEP procedure, the large sac should always be transected and carefully inspected for abnormalities. In this case, we ligated the sac first then cut it off, which completely kept the integrity of peritoneal cavity and pre-peritoneal space, and avoided the influence of TB contaminated effusion on the preperitoneally implanted mesh. Furthermore, the prosthetic mesh we placed in is of the properties of lightweight, big apertures and it is partly absorbable. Compared with heavier polypropylene mesh with normal apertures size, it has better infection resistance. When the abnormality was proved in the distal hernia sac, an informed consent to operative intervention, use of prosthetic material was obtained from his authorized relative after thoroughly explaining the benefits and risks involved. After that, TEP was completed and further exploration of abdominal cavity finally drew the certain conclusion of tuberculous peritonitis.

3. Some Chinese surgeons suggest [11] that transumbilical exploration of abdominal cavity by laparoscopy after TEP procedure could benefit patients with the unveiling of contralateral occult hernia, and also improve the joint of mesh with abdominal musculus posterior surface because of the pneumoperitoneum pressure. In our case, preoperative negative findings and intraoperative accidental discovery made us have to do abdominal exploration with laparoscopy after the placement of mesh. Certainly, abdominal exploration is not an indispensable procedure of TEP. But in the situation as we had, such explorations sometimes are meaningful. TAPP, as a laparoscopic hernia repair technique, it has consistent indications with TEP procedure [12], especially preferred in recurrent hernia after anterior approach repair, or in the emergency cases with abdominal exploration requirement. Meanwhile, on the aspect of occult hernia identification, TAPP is also obviously superior to TEP. However, in a non-randomized study, McCormack [13] pointed out that the trocar site hernia and visceral injury is slightly increased in TAPP. Therefore, as for primary inguinal hernia repair, the choice of TEP or TAPP is largely depended on the experience and familiarity of surgeons. We believe that post-TEP trans-umbilical exploration meets the requirement of abdominal inspection, and avoids the reconstruction of peritoneum at the same time. In some ways, it is a useful technical supplement to TEP in special clinical occasions.

4. Any accidental findings or abnormal lesions detected during surgery should be timely sampled and sent for pathologic investigation as soon as the informed content was obtained, because it is indispensable for the diagnosis and further treatment.

5. Even though, the patient had an even post operative recovery so far, the long-term outcome should still be closely followed up, especially for the problems such as hernia recurrence or delayed mesh infection.

References


