



Retained Surgical Sponge Misconceived as Small Bowel GIST

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Abstract

Retained surgical sponges are often misconceived as an abdominal or pelvic cavity neoplasm. We report a 56-year old woman who was presented to primary care physician complaining of mild discomfort and heaviness in lower abdomen. She had history of Tension-free Vaginal Tape (TVT) mesh removal operation 17 years ago. The small bowel GIST was suspected on CT scan and laparotomy excision was performed. The final diagnosis was a retained surgical sponge.

Keywords: Retained surgical sponge; GIST; TVT

Introduction

Retained Surgical Sponges (RSSs) in the abdominal cavity may involve secondary bacterial contamination and make a various fistula in early postoperative period. But, in other way, retained surgical sponges does not stimulate any specific biochemical reaction except adhesion and granuloma formation for months or even years after an original surgery. We describe a case of a retained surgical sponge that had been asymptomatic for 17 years and was misconceived as a Gastrointestinal Stromal Tumor (GIST) derived from the small intestine before surgery.

Case Presentation

A 56-year-old woman presented to primary care physician complaining of mild discomfort and heaviness in lower abdomen. Her work-up included a Computed Tomography (CT) of abdomen, which showed 6 cm sized heterogenous enhancing mass around the distal ileum. The patient was referred to our hospital with an intra-abdominal mass which had been incidentally detected on the abdominopelvic CT. Contrast-enhanced CT scan showed a 6 cm × 5 cm sized heterogenous enhancing mass with peripheral calcification around the distal ileum (Figure 1). The lesion was thought to represent a gastrointestinal stromal tumor originated from small bowel. There was no specific medical history except for hypertension. On physical examination, two transverse operative scars were identified in the lower abdomen. The first one was from a cesarean section which had been performed about 22 years ago, and second one had been made by a mesh removal operation about 17 years ago. Significant past history included a previous Tension-free Vaginal Tape (TVT) operation for the treatment of stress urinary incontinence 18 years ago. At that time, she had some bleeding on pelvic cavity and did a conservative care. One year after TVT operation, she received mesh removal operation due to recurrent stone formation on bladder and voiding discomfort. With a presumptive diagnosis of small bowel GIST, a laparoscopic exploration was performed after insertion of an umbilical port and the other two ports in right side of abdomen. A large mass was easily identified as protruding form from the lower anterior abdominal wall into the abdominal cavity. The tumor did not originate from the small intestine and showed no evidence of communication of intestine. We attempted laparoscopic resection. But, laparoscopic dissection was not possible because the peritumoral adhesion with the anterior abdominal wall was very severe, so it was converted to laparotomy. After lower midline incision, the abdominal wall was opened layer by layer and it was confirmed that the tumor originated in the preperitoneal space around the bladder. It was not easy to dissect the tumor from the abdominal wall, but complete resection was possible. Unfortunately, bladder injury occurred during dissection due to severe adhesion between the tumor and the bladder wall, but the injured site was simply repaired. The removed specimen was measured 5 cm × 6 cm × 5.5 cm in size and well surrounded by thick fibrous tissues. The center of the mass shows gauze material with fibrinous tissue and old hematoma at the periphery (Figure 2a). Microscopic examination revealed central fibrinous exudate with organizing

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Figure 1: Computed tomography finding 6 cm × 5 cm sized heterogenous enhancing mass with peripheral calcification around the distal ileum. **a)** Non-enhanced CT transverse view. **b)** Enhanced CT transverse view. **c)** Enhanced CT axial view.

hematoma, surrounded by thick fibrous capsule showing foreign body reaction. The patient recovered well and was discharged 3 days after the surgery. The patient was uneventful without any discomfort 3 months after surgery.

Discussion

Retained surgical sponges in the abdominal cavity may involve secondary bacterial contamination and make a various fistula in early postoperative period. But, in other way, the aseptic fibrous type of RSSs does not stimulate any specific biochemical reaction except adhesion and granuloma formation for months or even years. The reaction of aseptic fibrous type is slow; it involves fibroblasts leading to formation of pseudotumor, with patients remaining asymptomatic for many years [1-3]. In this case, the time interval between surgery and CT examination was 17 years, and histopathologic finding suggested an aseptic fibrous response. During this period the patient had no significant symptoms except for mild discomfort and heaviness in lower abdomen. Many radiologic findings are used to diagnose RSSs.

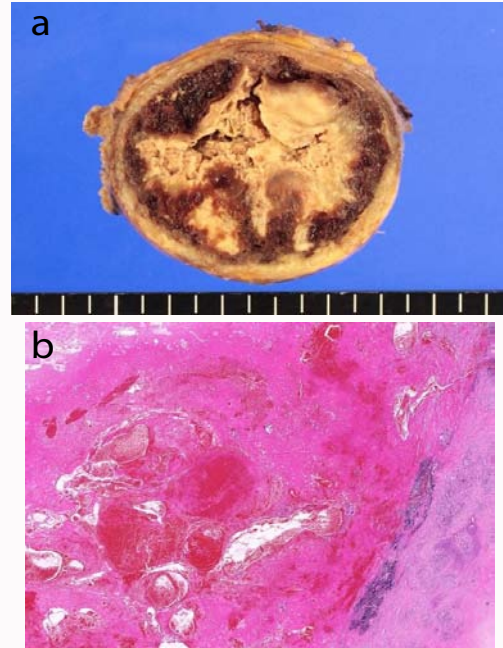


Figure 2: **a)** The mass is well surrounded by thick fibrous tissue. The center of the mass shows gauze material with fibrinous tissue and old hematoma at the periphery. **b)** The microscopic view of mass shows central fibrinous exudate with organizing hematoma, surrounded by thick fibrous capsule showing foreign body reaction.

But there are still limitations in diagnosing RSSs and are often confused with soft tissue tumors. Its appearance on various imaging modalities is not well defined. The sonographic finding is a well-defined mass with hyperechoic lesion with acoustic shadowing [4]. Qiu Yang Li et al. [5] investigated ultrasound feature of RSSs and classified three types. Type I: An echogenic arc with a strong posterior shadow; type II: US appearance mimicked a cystic teratoma; type III: A cystic mass with zigzag-shaped internal contents. On MRI, a retained sponge is typically seen as a soft-tissue mass with a thick well-defined capsule and as a whorled internal configuration on T2-weighted imaging [6]. The CT scan is the most commonly used and the most useful method for diagnosing RSSs [7]. The characteristic appearance of RSSs in CT is a soft tissue mass with air-bubbles and a whirl-like pattern. This finding may help identify RSSs and may be confused with an abscess early after surgery [8]. Although CT scan is the most useful diagnostic tool, sometimes the preoperative diagnosis remains uncertain even after the imaging studies [9]. Because, the surgical sponges have been in the body for a long time without causing symptoms, the whirl-like pattern of the gauze is broken and it is difficult to identify these typical characteristics. In this case, a whirl-like pattern, a typical CT finding, was not observed, but only a heterogenous enhancing mass with peripheral calcification around the distal ileum. This is thought to be due to the corrosion of gauze in the body. These findings led us to misconceive it for a soft tissue tumor that occurs in the pelvic cavity. Because of the rarity of RSS and a very long surgical history of 17 years, as well as being asymptomatic, we could not conceive at all that the tumor was related to the past surgery. In addition, since the tumor was very close to the small intestine, it was thought to originate from the small intestine, so it was primarily diagnosed as small bowel GIST. In the case of RSS, which has been placed in the abdominal cavity or pelvic cavity for a long time, most of the cases do not have specific symptoms and are mainly diagnosed through

image examination. It may be difficult to differentiate from a tumor as typical image features are lost. Therefore, it is necessary to pay attention to the possibility of RSSs when an intra-abdominal mass is accidentally identified in a patient with a previous surgical history.

Conclusion

In the diagnosis of a patient with a mass in the pelvic cavity, the possibility of a retained surgical sponge should not be ruled out if central whorled stripes are identified on image studies or if there is a previous surgical history even if central whorled stripes are not identified.

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