

SURGICAL GAUZE PSEUDOTUMOR ERODING INTO THE INTESTINE

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Gazi Medical Journal 8 : 122-125, 1997

SUMMARY :

Surgical sponges, instruments, and drains left in the abdomen following surgery may be responsible for bizarre and varied complications. The patient may remain asymptomatic for months or even years. Among the complications reported following retention of laparotomy pads and surgical sponges are obstruction, peritonitis, adhesions, fistulas, abscess formation, erosion into gastrointestinal tract, or extrusion of the laparotomy pad via the rectum. Transmural migration of the retained sponge is a rare phenomenon. A laparotomy sponge may extrude into the bowel lumen and migrate along the intestinal tract, or it may partially penetrate the bowel wall. The present report describes a patient who was operated on for recurrent incisional hernia and was found to possess a previously retained sponge that had penetrated partially into the bowel lumen.

Key Words: Retained surgical sponge, abdomen, intraluminal migration.

INTRODUCTION

Foreign bodies retained in the peritoneal cavity are rarely documented, owing to medical, legal, and other reasons. Each such incident acquires major importance because it upsets the patients and the surgeons. Retained foreign bodies after surgery are most frequently surgical sponges, or towels (1, 2). When such a foreign material has no radiopaque markers and is kept under aseptic conditions with minimal tissue reaction, it may follow a silent course for months to years after the original operation. Eventually, it may produce various complications leading to its discovery. Among the complications reported following retention of laparotomy pads and surgical sponges are obstruction (3), peritonitis (4), adhesions (5),

fistulas, abscess formation (3), erosion into gastrointestinal tract, or extrusion of the laparotomy pad via the rectum (5-7). Transmural migration of the retained sponge is a rare phenomenon. A laparotomy sponge may extrude into the bowel lumen and migrate along the intestinal tract, or it may partially penetrate the bowel wall (1, 3, 4, 6). More unusual occurrences, such as the migration of a sponge into the urinary bladder following inguinal herniorrhaphy have also been reported (8). The present report describes a patient who was operated on for recurrent incisional hernia and was found to possess a previously retained sponge that had penetrated partially into the bowel lumen.

CASE REPORT

A 48-year-old woman referred to our unit for abdominal pain and recurrent incisional hernia. She had undergone cholecystectomy through a midline laparotomy three years before at another hospital. Ten months after the operation, she developed incisional hernia and this was repaired by primary suture. Eight months later, incisional herniation recurred and she was reoperated on. Another 8 months later, there was another recurrence of incisional hernia at the same location. Within this period, she had complained from abdominal pain and distention. There was no family history of hernia. Physical examination revealed no additional findings other than a midline incisional hernia. No intraabdominal mass was palpated. The patient also lacked coexisting diseases, such as chronic obstructive lung disease or chronic constipation that could have provoked herniation. All laboratory findings were within normal limits. Abdominal ultrasonography (US) searching for possible intraabdominal cause for recurrent herniation was done but nothing more than the absence of gallbladder was found.

At the operation numerous aponeurotic defects were identified, and the abdominal cavity was carefully explored. Surprisingly, a round, semisolid mass with well-defined borders and measuring 6x6 cm was found on the antimesenteric wall of the proximal jejunum. The tumor was dissected free from the surrounding mesenteric and omental adhesions and was found to be integrated to the bowel wall. (Fig. 1) Thus, a segmental resection was carried out, with about 5 cm of jejunum on both sides of the mass. The continuity was restored by end-to-end anastomosis. The specimen was removed from the operating table and dissected by an assistant. The semisolid mass was demonstrated to contain 20 ml of purulent fluid and a long surgical sponge. About 1/3 of the length of the sponge had penetrated into the bowel lumen and the rest of it had formed a conglomerate outside the bowel wall and was surrounded by a fibrous capsule. (Fig. 2). The incisional hernia was repaired by primary suture plus polypropylene graft reinforcement. The postoperative course was uneventful, and the patient was discharged on the sixth postoperative day. No bacteria were cultured from the purulent fluid sample obtained. She has been free of symptoms for the last three months.

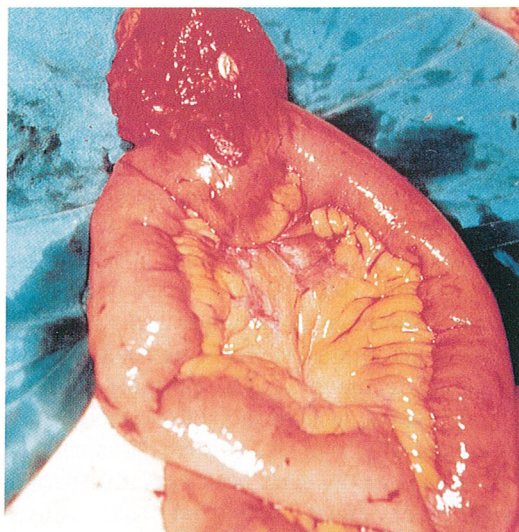


Fig. 1 : The tumor was dissected free from the surrounding mesenteric and omental adhesions and was found to be integrated to the bowel wall.

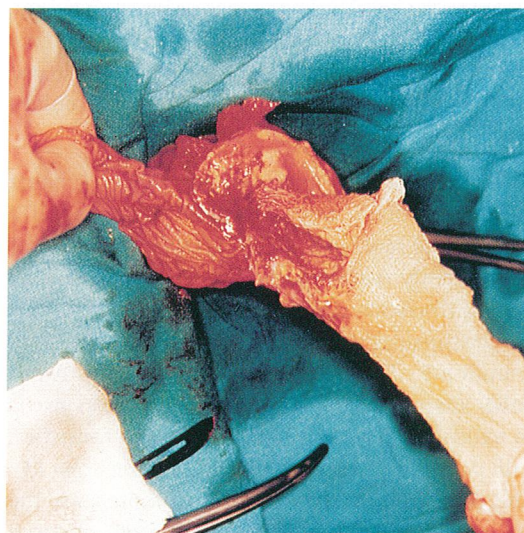


Fig. 2 : About 1/3 of the length of the sponge had penetrated into the bowel lumen and the rest of it had formed a conglomerate outside the bowel wall and was surrounded by a fibrous capsule.

DISCUSSION

The incidence of pieces of surgical gauze left behind in operated patients have been reported to vary between 1/100 and 1/3000 procedures (9). Various foreign bodies retained in the peritoneal cavity have been reported (sponges, towels, artery forceps, pieces of broken instruments or irrigation sets, rubber tubes, etc..) (10, 11). Among retained foreign bodies, a surgical sponge constitutes the most frequently encountered object because of its common usage, small size, and amorphous

structure (2). The operation during which the gauze is left behind is usually abdominal and often pelvic, where the deepness of the region facilitates the disappearance of blood soaked pieces of gauze under the bowel or retractors. The time interval between initial and repeat operations ranges from 10 days to 19 years (1, 2). The patient may remain asymptomatic for months or even years. Symptoms such as intense abdominal pain, postoperative ileus, bladder disturbances, rectal tenesmus, abscess formation, development of tumors or fistulas, or the protrusion of a foreign body through the wound, rectum or bladder generally develops (11). The usual manifestation of the foreign body left accidentally is an abscess or a chronic fistula that appears in the early post operative period. Long term gauze retention that causes pseudotumoral complications is less frequent and often very difficult to diagnose, because the gauze pieces provoke a fibrotic foreign body reaction and adhere to the neighboring organs or invade a hollow viscus nearby (12). Other manifestations that have been reported are late abscess formation, chronic fistulas, and digestive hemorrhagic secondary vessel erosion (9).

Surgical gauze is made of cotton, which is rather inert and does not stimulate any specific biochemical reactions. Pathologically, two types of foreign body reactions can be induced. One is an aseptic fibrinous response that creates adhesions and encapsulation, resulting in a foreign body granuloma. This occurrence usually follows a rather silent clinical course. The other response is an exudative type that leads to abscess formation with or without secondary bacterial infection (13). The development of an abscess represents the body's attempt to extrude the foreign material either externally or internally into a hollow viscus (3). The most unusual sequela is the erosion of the sponge into the intestine (1, 4). The retained sponge may lie entirely or partially within the bowel lumen, or it may eventually pass per rectum. Elimination of the sponge may occur as early as two weeks following laparotomy or it may be delayed as long as several years (6, 10). The retained sponge evokes an inflammatory reaction and is surrounded by omentum, intestinal mesentery, and/or nearby organs. Sooner or later, the foreign body exerts pressure and forces an opening into a hollow organ, and a fold of sponge then penetrates into the lumen of the bowel. Peristaltic activity of the bowel helps propulsion of the foreign body (4, 10). In some

cases, there is spontaneous expulsion of the foreign body to the exterior, but in most cases, operative interventions required to remove the offending item (11). Unusual pathways of extrusion include the abdominal wall or umbilicus (3). If a patient develops an unusual pain or strange abdominal symptoms soon after laparotomy, a retained foreign body should be considered. The patient reported in this paper developed persistent abdominal pain and recurrent incisional hernias following cholecystectomy. Neither an intraabdominal abscess nor a chronic fistula had appeared soon after this initial operation. Instead, the retained sponge had partially migrated into the bowel lumen and formed a pseudotumor. We cannot contradict that the sponge might completely pass into the bowel lumen and eventually per rectum if we had left it behind and if the patient was lucky enough. The more probable course would possibly be persistent abdominal pain and partial or complete obstruction that could provoke another herniation.

For retained intraabdominal bodies, various nonspecific radiologic findings to aid in diagnosis have been described. The diagnosis can easily be made on plain roentgenography if the sponge has a radiopaque marker. The CT and US appearances of retained surgical sponges may be widely diverse. However, in addition to spongioform gas bubbles, a low density mass with prominent and prolonged rim enhancement on CT scans, strong and extensive posterior shadowing on US may suggest a retained surgical sponge granuloma (14-16). Sonographically, retained surgical sponges are echogenic and they create an intensive and sharply delineated acoustic shadow. The acoustic shadow can occur in the absence of air or calcification (16, 17). MR is also useful for revealing mass lesions and their internal structures as a method of tissue characterization (18).

The surgical sponge retained in our patient lacked a radiopaque marker; thus, the diagnosis was not possible with plain radiography. We also failed to palpate the mass, possibly because there existed numerous defects on the fatty abdominal wall. The false-negative finding of US obviated further diagnostic studies (19). Fortunately, the peritoneal cavity was carefully explored and the mass was identified.

Altogether, an unusual sequela of a retained surgical sponge is described. It is exemplified that

retained foreign bodies might follow bizarre pathways of extrusion, one of which is transmural migration into the bowel.

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