Retained Surgical Sponge (Gossypiboma) Causing Small Bowel Obstruction & Peritonitis: A Case Report

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Introduction

Retained intra-peritoneal foreign bodies (FBs) are under reported due to medico legal implications [1–5]. Despite standard care before, during & after surgical procedures, surgical objects are still occasionally left behind in the peritoneal cavity. The commonest retained FBs are surgical sponges [1]. This may be due to its frequent usage, small pliable size and amorphous structure [2]. Gossypiboma, textiloma and cottonoid are synonym words, but Gossypiboma defined as a mass composed of cotton matrix retained within human body is the most commonly used term [1,5].

The incidence of Gossypiboma remains unknown but varies between 1 in 100 to 1 in 5000 laparotomies [1]. Long complex procedures, emergency operations and inexperienced surgical and nursing staff are possible predisposing factors [2]. Clinically, a retained sponge is symptomatic in 50% of the cases. It may result in abdominal pain, abdominal mass, peritonitis, adhesions, erosion into the gut and intra-luminal bowel obstruction [2,3,6]. Diagnosis needs high index of suspicion and imaging studies [5].

Migration of a retained surgical sponge into the bowel is rare compared to abscess formation [3]. In cases of bowel penetration, the sponge usually stops in the terminal ileum, resulting in small intestinal obstruction [3]. Here, we report a female patient who developed intestinal obstruction and peritonitis due to trans-mural migration of a retained surgical sponge into the small bowel.

The Case

The patient was a 25 years old female who had Cesarean Section (C/S) five months before presenting to our emergency room. Following the C/S she had smooth course for the first five days. Later she developed right lower quadrant abdominal pain and weight loss which got worse with time. For this, she was seen at different hospitals for several times and got unspecified treatments. Four weeks ago she developed bilious vomiting which become frequent in the last two weeks. Three days before presentation the abdominal pain got worse and involved the whole abdomen, vomiting become persistent, she failed to pass feces and flatus, developed fever and abdominal distension.

Physical examination revealed hypotension, tachycardia, and fever. Abdomen was distended and tender; Pfannenstiel surgical incision scar noted. On digital rectal examination, rectum was empty. Patient was resuscitated with crystalloids, IV Ceftriaxone and Metronidazole started, blood prepared for intra-op and post op resuscitation. Investigations showed leukocytosis (14,000/L) & mild anemia (10.8 g/dl). Abdominal film and ultrasound (US) showed signs of small bowel obstruction and free fluid in the general peritoneum respectively.

She produced 200 ml of urine in four hours. Emergency Laparotomy decided as a case of strangulated adhesive small bowel obstruction, rule out retained foreign body (FB). FB was suspected considering the type of surgery she had and the fact that the patient was sick since the week of surgery and her condition didn’t improve despite the treatment she got before she came to our ER. At Laparotomy, four liters of pus mixed with GI content in the general peritoneum & two sites of perforation on the ileum 20 cm & 5 cm from the ileo-cecal valve was found. In addition there was visible surgical sponge at the distal ileum (5 cm from the ileo-cecal valve) which was perforated and covered by pyogenic membrane. Segment of the ileum containing the perforation sites and the FB resected. To shorten the operation time, the right side of the colon left behind and ileo-transverse end to side double layer anastomosis was done. Examination of the resected specimen showed a 10 × 10 cm surgical sponge completely inside the ileum (Figure 1).

During the surgery she became hypotensive, crystalloid resuscitation continued, and two units of blood was given. At the end of the surgery vital signs stabilized. She was transferred to surgical ICU & put on mechanical ventilator, IV antibiotics and Omeprazole. In the first post op day she was transfused with two units of blood. On the third day her blood pressure started dropping and vasopressor (dopamine) initiated. Despite all the efforts she passed away 20 hours after the initiation of dopamine.

Discussion

The real incidence of retained intra-peritoneal foreign body may not be known because of under reporting occasioned by its medico legal implications and consequences [2]. Metallic & non-metallic objects can be retained but the commonest one is surgical sponge [1–5]. Risk factors mentioned in literatures includes...
emergency operations, requirement of applying unexpected surgical procedure, obese patient, excessive blood loss etc [2,6,7]. Our patient had emergency C/S which is known to be bloody, rushed and usage of surgical sponge is common. Clinical experiences also show most retained sponges occur following emergency C/S.

Retained FBs can remain asymptomatic and detected incidentally or can present with early post op complication with unexplained pain, features of sepsis and abscess collection. If not diagnosed or misdiagnosed delayed presentation with protracted sickness, weight loss, discharging sinuses, mass, signs and symptoms of intestinal obstruction, trans-mural migration and spontaneous expulsion are possibilities [8]. Retained foreign body should be considered in the differential diagnosis of any patient who present with the above symptoms following surgery [9]. Misdiagnosis resulting delay of treatment contributes for the prolonged morbidity and even mortality, which is the case in our patient. Until she presented with signs of peritonitis she was treated for several conditions at different clinics and hospitals. This the reason why one need high index of suspicion and imaging studies in all patients who had surgery, but unexplained poor post op courses.

It should be remembered that imaging study results can be negative as it is the case in our patient. Plain film and US showed evidences of small bowel obstruction but not foreign body, supporting the idea of high index of suspicion. When there is evidence of acute abdomen the decision to do laparatomy is easy but all attempts should be made to diagnose the conditions as early as possible by clinical evaluation and exhaust all available investigations. Abdominal CT is an excellent study for this purpose which is missing in our patient (5-7).

Surgical sponges can migrates trans-mural and cause symptom due to luminal obstruction or bowel perforation as seen in our patient. A Trans-mural migration is when the sponge moves completely into the lumen of intestine. It has four stages; foreign body reaction, secondary infection, mass formation and remodeling. The foreign body penetrates into the intestinal lumen following intestinal wall necrosis. Peristalsis drags the foreign body into the intestinal lumen [3,6]. In the lumen of the small bowel FBs can cause either chronic small bowel obstruction or acute on chronic obstruction. FB in the large intestine can be passed per rectum. We have experienced a patient who vomited a small (4 × 4 sponge) six months after cholecystectomy. When the FB is in the small intestine it can’t pass beyond the ileo-cecal valve due to anatomical narrowing. At this site it causes distal small bowel obstruction and/or perforation [2,3], which is also seen in our patient. Despite being entirely in the lumen of the bowel probably for several weeks it didn’t cause complete obstruction until three days before presentation. This could be due to the fluid nature of the distal ileum content which can diffuse across the sponge and the acute presentation likely due to the perforation.

Gossypiboma can be avoided or incidences significantly reduced if surgical checklists are used seriously and routinely in every patient. The operating team should perform a brief but thorough routine post procedure wound and body cavity exploration before closure. We don’t know if surgical check list are done regularly in the hospital the patient had C/S. The routine use of radio opaque markers may help in making sure correct sponge count in areas where it is available [1,2,5,6]. When a post op patient developed unexplained bad course, retained foreign body should be always suspected and the operating surgeon need to swallow pride and evaluate the patient for that. The significant delay in diagnosis (presentation) is the main reason for our patient’s prolonged morbidity and mortality. High index of suspicion remains an essential tool to diagnoses retained foreign bodies and can’t be overemphasized.

References