



Case Series

Intraluminal migration of gossypibioma

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ABSTRACT

BACKGROUND: Surgical sponge retained in the abdominal cavity following surgery, is a serious but avoidable complication. Common symptoms and signs of transmural migration of gossypibioma may include abdominal pain, vomiting, and bleeding. Transmural migration of surgical swab is a very rare phenomenon.

CASE SERIES: We report a series of three such cases which presented to us with small bowel obstruction and laparotomy with extraction of gossypibioma was performed.

RESULTS: All three patients recovered well with no morbidity.

CONCLUSION: Gossypibioma is a surgical mishap which can be avoided if guidelines for operative theatre record keeping are seriously followed. CECT abdomen is very useful in its diagnosis. Exploratory laparotomy or laparoscopy is mandatory. This series also discusses the approach to migratory surgical gossypibioma in terms of clinical manifestations, diagnosis, treatment and prevention protocol.

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1. Introduction

Foreign body, most commonly a surgical sponge retained in the abdominal cavity following surgery, is a serious but avoidable complication. ‘Gossypibioma’ is derived from latin word ‘gossypium’ meaning cotton and swahilli word ‘boma’ means ‘place of concealment [1] and is used for retained surgical sponge. Though the incidence of gossypibioma has been described as 1 in 1000–1500 surgeries, transmural migration is very rarely reported. Incidence is underestimated because of underreporting due to fear of medico-legal litigation and extreme criticism by media [2]. In this series, we report three cases of migrating gossypibioma into terminal ileum in our practice which we managed successfully. The work has been reported in line with the SCARE criteria [20].

2. Case series

2.1. Case 1

A 24 year old male presented with abdominal pain, vomiting and obstipation for the past 2 days. He underwent open appendicectomy 20 days back in another hospital. X ray erect abdomen was suggestive of small bowel obstruction. Patient underwent

exploratory laparotomy where in dilated proximal small bowel loops and collapsed distal bowel loops were noted and multiple inter-bowel adhesions at the transition zone. After adhesiolysis, enterotomy at the transition zone revealed an intraluminal gauge causing the ileal obstruction. Since the enterotomy edges were not healthy, limited resection with side to side anastomosis was performed to restore the bowel continuity. Post-operative period was uneventful and he was discharged on POD 9. The process of fistulation is explained in detail in discussion (Fig. 1).

2.2. Case 2

A 49 year old female presented with chronic abdominal pain, significant weight loss and vomiting. She was malnourished and her serum albumin was 2 mg/dl. She underwent total abdominal hysterectomy and salpingo oophorectomy 7 months back for a benign cause. Contrast enhanced CT abdomen revealed an intraluminal gossypibioma. On laparotomy, intraluminal tailed sponge was identified in the distal ileum causing ileal obstruction. The entry point of this gossy is sealed by anterior abdominal wall adhesions and hence there was no peritonitis. Adhesiolysis was performed followed by removal of the gossy and resection of bowel and reconstructed with side to side anastomosis. Post-operative period was uneventful and was discharged on POD 10.

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Fig. 1. Ileum showing intraluminal foreign body.



Fig. 2. Gossypiboma extracted from terminal ileum.

2.3. Case 3

A 31 year old female presented with sepsis and clinical features suggestive of acute small bowel obstruction. Her past history was suggestive of recurrent subacute intestinal obstruction (episodes of colicky abdominal pain, vomiting, loss of appetite) for the last 16 months, and she had undergone an emergency cesarean section with a pfannenstiel incision. Contrast enhanced CT abdomen revealed intraluminal gossypiboma. Intraoperatively, intraluminal tailed gossy in the ileum was found. Patient underwent laparotomy with removal of gossy from ileum. End ileostomy and mucus fistula was performed as the patient was in sepsis. Post-operative recovery was slow, but uneventful and discharged on POD 15.

3. Discussion

Despite a published incidence of 1:1000 to 1:1500 after intra-abdominal surgeries, it is encountered more commonly than reported [3]. Surgical sponge is the most frequently retained foreign body. Common surgeries associated with this condition are open cholecystectomy, caesarian section, hysterectomy, appendectomy, and splenectomy.

Risk factors leading to gossypiboma include a higher mean body-mass index, emergency surgery, difficult operative procedure, surgeon's fatigue, several sponges sticking together, poor tracking, change in nursing and surgical teams, an unplanned change in the operation and unaccountable human error [4,6].

Although importance of meticulous counting cannot be over emphasized, cases have been reported in presence of normal counts [5,6]. Some authors suggest routine X-ray screening of high-risk patients before they leave the operating room even if the count is documented to be correct, although this has not been found to be fool proof [5,6]. It is advised to use sponges held in forceps to prevent their intra-operative loss [7].

Gossypiboma induces two types of foreign body reactions; the first type is an aseptic fibrinous response that creates adhesions and encapsulation while the second type is an exudative reaction which leads to inflammatory reaction with abscess formation [8].

Migration of retained sponge into bowel is rare compared to abscess formation and occurs as a result of inflammation in the intestinal wall that evolves to necrosis [9]. The intestinal loop closes after complete migration of sponge [10].

Peristaltic activity advanced the mop usually to stay in the terminal ileum, resulting in obstruction. The most frequent site of impaction was the gastrointestinal lumen (46 cases), with the highest number found in the ileum (16cases) [19].

Common symptoms and signs of transmural migration of gossypiboma may include abdominal pain, vomiting, and bleeding [11,12]. Abdominal pain is the most frequently complained symptom. The main complications of abdominal gossypiboma were bowel or viscera perforation, obstruction, peritonitis, adhesion, abscess development, fistula formation, sepsis, and migration of the sponge into the lumens of the gastrointestinal tract [11,12].

Gossypiboma may be misdiagnosed as malignant tumor, bezoar, or inflammatory mass and lead to unnecessary invasive diagnostic procedure (Fig. 2).

Detection by plain X-ray is difficult, especially when surgical sponges have not been provided with the radiopaque marker. USG may show an echogenic, complex hypoechoic area, or cystic mass with acoustic shadow or may be normal. Contrast enhanced CT scan is the investigation of choice. It shows complex mass with variable density; calcification; spongiform gas and with or without radiopaque marker. MRI is also infrequently used for diagnosis [13–15].

An electronic article surveillance system which uses a tagged surgical sponge that can be identified electronically has been examined [16]. Bar codes can be applied to all sponges, and with the use of a bar code scanner the sponges can be counted on the back table.

Surgery is the recommended treatment of gossypiboma. Because of transluminal migration and resulting fistulous tract formation, endoscopic treatments are mostly unsuccessful [17]. Various techniques, including percutaneous techniques, laparoscopy and laparotomy, are used for the removal of gossypiboma, depending on the clinical presentation and medical equipment available [18].

The possibility of a gossypiboma in modern medicine still exists. Gossypiboma is a surgical mishap which can be avoided if guidelines for operative theatre record keeping are seriously followed. Migrating gossypiboma can present with varied symptoms and signs that can be vague and misleading. Hence high index of suspicion is very necessary when a patient presents with vague symptoms post operatively. Contrast enhanced CT abdomen is the investigation of choice. Exploratory laparotomy is beneficial to laparoscopy as the adhesions formed will be dense and can minimize errors. With the increasing medico-legal litigations and awareness, even in the developing countries, surgical team should take all possible care to avoid this dreaded problem.

Conflicts of interest

Not applicable.

Funding

Not applicable.

Ethical approval

Ethical approval is exempted by the institution. As this study includes cases which underwent a routine procedure as a part of their management, institution has exempted ethical approval. Patient's consent is taken to undergo the procedure.

Consent

Written and informed consent is taken from all the patients and by standers regarding undergoing surgery. As an institutional policy, every patient admitted in our hospital signs a document agreeing that the case history can be used for publication purposes. As the patients did not undergo any new intervention and they have agreed for publication, this article is sent for publication

Author contribution

I wrote the paper and assisted the other author in treating these cases DR. VAMSI KRISHNA has operated and suggested the study design.

Registration of research studies

DR. Vamsi Krishna.

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