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A transmural migration of a gossypiboma in the right colon responsible for a mass which mimicked an abscessed colonic tumor: A case report

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ABSTRACT

INTRODUCTION: Gossypiboma or retained surgical sponge is a rare but serious complication of abdominal surgery. Clinical and radiological polymorphism of gossypiboma makes an accurate preoperative diagnosis difficult.

PRESENTATION OF CASE: We report an unusual case of a transmural migration of a gossypiboma in the right colon responsible for a mass which mimicked an abscessed colonic tumor, three years after an open myomectomy. A 40-year-old woman was admitted in emergency with generalized abdominal pain associated with fever. Initially, physical examination revealed an acute localized peritonitis in lower right quadrant. A right pericolic perforated abscess was found. A right hemicolectomy was performed. Surgical specimen dissection revealed an intracolonic surgical sponge.

DISCUSSION: Gossypiboma after laparotomy may present with symptoms of acute surgical or chronic abdominal pain. Radiographs are the most commonly used method to detect retained sponges. Surgery is the preferred method of treatment for gossypiboma.

CONCLUSION: Episodes of atypical colonic obstruction and nonspecific abdominal pain that have occurred for several years in a patient with a history of multiple abdominal surgery should be suggestive of intra-colonic migration of a gossypiboma. The most important approach to reduce the incidence of gossypibomas is prevention.

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1. Introduction

Gossypiboma is a medical term that has been used to describe a retained sponge/gauze in the abdominal cavity after a surgical procedure [1]. Textiloma, cottonoid, cottonballoma, or gauzeoma are also used to describe this complication [2]. Retained surgical sponge is one of the rare but serious complication of abdominal surgery [3]. The real incidence of this complication is underestimated because of its medico-legal implications and consequences [4]. Pathologically, gossypiboma causes either exudative or aseptic fibrous responses [5]; exudative response creates adhesion and encapsulation; aseptic response leads to abscess formation with or without secondary bacterial colonization. An accurate preoperative diagnosis is difficult due to clinical and radiological polymorphism [6]. Gastrointestinal manifestations depend on location of the retained sponge in peritoneal cavity. Transmural migration of gossypiboma is a rare outcome that can cause bowel obstruction, intestinal hemorrhage, abscess, fistulation involving surrounding structures and

acute secondary peritonitis [5]. We report an unusual case of a transmural migration of a gossypiboma in the right colon responsible for a mass which mimicked an abscessed colonic tumor, 3 years after gynecological surgery. The work has been reported in line with the SCARE criteria [7].

2. Case presentation

A 40-year-old woman was admitted in emergency room with generalized abdominal pain, fever, constipation, nausea and vomiting. There was no weight loss and no intestinal bleeding. She underwent an open myomectomy in another hospital three years ago, which was followed by two re-laparotomies. The first was performed three days after the initial intervention for a hemorrhage and the second, two months later for a septic intraperitoneal collection.

She also mentioned episodes of subacute intestinal obstruction resulting in vague abdominal pain, abdominal distension, stopping intestinal transit and nausea. These episodes of intestinal obstruction stopped spontaneously after an emission of gas and diarrhea feces; they were followed by spasmodic abdominal pain localized in the lower right quadrant associated with fever.

These symptoms appeared three months after the second re-laparotomy and persisted inconsistently until her consultation in

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Fig. 1. Title: surgical specimen of right hemicolectomy.

A: colic perforation.
B: right colon mass.
C: transverse colon.

our department. No further advanced investigations were carried out at that stage. Physical examination found good general condition, generalized abdominal pain and localized tenderness in the lower right quadrant. Presence of feces and moderate pain were objectified by digital rectal examination. An intestinal ileus was objectified by a plain erect abdominal x-ray. Abdominal CT scan was not feasible in emergency. Leukocytosis count was 12,000 cells/mm³, hemoglobin level was 127 g/dl and CRP level was 148 mg/l. Diagnosis of an acute localized peritonitis was initially retained. A right perforated pericolic abscess which mimicked a peritumoral abscess and a large intraperitoneal fecal contamination were found during exploratory laparotomy (Fig. 1). A right hemicolectomy, a left transverse colostomy and a right ileostomy were performed after peritoneal lavage. Peritoneal cavity drainage was done. Surgical specimen dissection revealed an intracolonic surgical sponge approximately 45 cm × 30 cm in size (Fig. 2). Final diagnosis was an acute fecal peritonitis due to a right pericolic perforated abscess subsequent to intracolonic migration of a gossypiboma. The postoperative parietal abscess was successfully treated. The patient was discharged on day 31. Four months later the patient had a successful restoration of the bowel continuity. Postoperative period was uneventful and she was discharged on day nine.

3. Discussion

Gossypiboma is a rare but serious complication of abdominal surgery, underestimated due to the surgeon's self-esteem and its medico-legal consequences [8]. Risk factors for foreign body retention after surgery usually reported are emergency surgery, unexpected change in surgical procedure, change in surgical team involved, change in nursing staff during procedure, high body-mass index, large estimated volume of lost blood, high count of sponges,

high count of instruments used and female gender [6,9,10]. Female gender is often cited as a risk factor for gossypiboma [11]. This probably reflects the preponderance of gynecological procedures as causal operations. However, only emergency surgeries, with unplanned changes in procedure, and with high body-mass index are significantly related to the risk of retention of a foreign body according to an article of *New England Journal of Medicine* [10]. This publication, despite its weaknesses, has had the merit of drawing attention to a delicate subject: retained foreign body in surgery [12]. In our case, the first relaparotomy in a context of hemorrhagic emergency could explain the oversight leading to sponge retention in the peritoneal cavity. This would explain septic intraperitoneal collection whose surgical drainage did not allow us to see the foreign body that had probably already migrated in the colon. Diagnosis of gossypiboma is difficult because the clinical symptoms are nonspecific and the imaging findings are often inconclusive [5]. Gossypiboma after laparotomy may manifest as symptoms of acute surgical or nonspecific chronic abdominal pain, preceded by a clinical silence or not. These clinical manifestations depend on size, type, location of the foreign body and type of response of the organism due to its presence [4]. Inflammatory reaction induced by a retained surgical sponge in the peritoneum can erode, then perforate the wall of a luminal organ [13,14]. Transmural migration of intraperitoneal sponge in luminal organs can cause bleeding, anemia, obstruction or acute abdominal pain [14,15]. Transmural migration of gossypiboma can rarely be asymptomatic [16]. However, cases of complete retained surgical sponge migration into the intestine without any signs of surgical abdominal pain have been reported [17]. In these cases, an abscess is formed which can perforate and cause fistula or acute peritonitis [18]. In our case, a similar pathological process would be involved before perforated pericolic abscess and then fecal peritonitis. Radiographs are the most commonly used method to detect retained sponge that contains a radio-opaque marker [19]. However, it is difficult to recognize a gossypiboma if sponge does not contain a radio-opaque marker as in our case or when radio-opaque marker is degraded. Cotton can simulate a hematoma, granulomatous process, abscess formation, cystic masses or neoplasm [9]. In these cases, abdominal CT scan is the optimal technique for detecting gossypiboma and its possible complication by showing the spongiform pattern with gas bubbles [19]. Surgery is the preferred method of treatment for gossypiboma. Gossypiboma can cause adhesions, abscesses or perforations that complicate the surgical procedure. This can increase morbidity especially in the case of fecal peritonitis as in our case [20]. Exceptionally, endoscopy can be used for diagnosis and as a non-surgical approach in case of transmural migration of retained surgical sponge in the digestive tract [6,21,22]. However, endoscopic extrication was not considered in our case. First, because diagnosis of gossypiboma was intraoperative; even if diagnosis had been before laparotomy, delay before diagnosis and acute peritonitis would suggest adhesion to intestine wall. Gossypiboma is a serious iatrogenic complication and may be life-threatening for the patient despite appropriate treatment. The most important

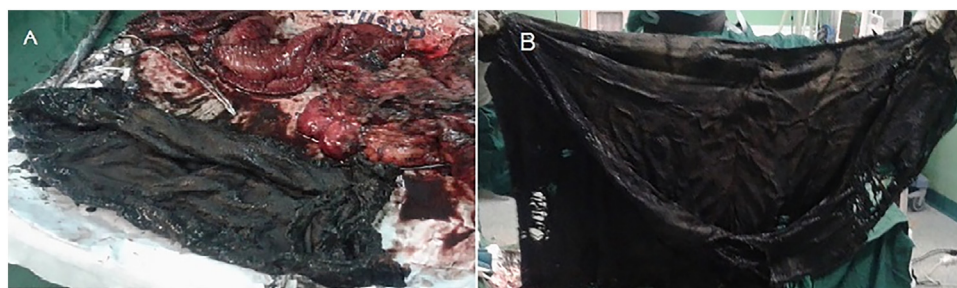


Fig. 2. Title: Operative and specimen findings.

A: retained surgical sponge and dissected right colon.

B: retained surgical sponge.

approach to reduce the incidence of gossypoma is prevention. This prevention is based on rigorous compliance with procedures or checklist in operating room and on the use of radiopaque surgical sponges [3,10,21]. It consists of three crucial verification steps that are pre, per, and post-operative. The meticulous counting of the surgical materials used during surgery is performed under the joint responsibility of the operating room nurse and the surgeon in pre, per, and post-operative. The surgeon at the end of the procedure does a precise exploration of the abdominal cavity before closing the abdominal wall. The association of operating room nurses published in 2015 recommendations that are widely used in hospitals in the USA [23]. Counts should be performed at the following time points during procedure: - before procedure begins (initial count); - whenever new additional items are used during operation; - before the surgeon closes the body cavity; - when the surgeon begins to close wound; and - when the surgeon closes the skin (final count). Good communication within the surgical team, between surgeons, operating room nurses and anaesthetists could reduce the incidence of retained surgical foreign bodies [3].

4. Conclusion

Despite, the improvement of surgical techniques and diagnostic means, gossypoma is still common. Episodes of atypical colonic obstruction and nonspecific abdominal pain that have occurred for several years in a patient with a history of multiple abdominal surgeries should be suggestive of intracolonic migration of a gossypiboma. Surgical treatment is the rule, with significant morbidity. The most important approach to reduce the incidence of gossypoma is prevention.

Conflicts of interest

There is no conflict of interest to declare.

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Ethical approval

Given that this is a case report with no identifiable information included in the manuscript, my institution has exempted ethical approval.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Author contribution

Study design: Assamoi Brou Fulgence Kassı.

Data collection: Assamoi Brou Fulgence Kassı.

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