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Gossypiboma, the Never Event; a Case Report

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Abstract

Introduction and importance: In the surgical field, we utilize gauze and surgical instruments daily, and the complications can be divided into avoidable versus nonavoidable. The term Gossypioma in the literature indicates a retained surgical sponge or gauze. It can be there for years and be dormant or discovered within days as the patient starts to reveal symptoms. This makes diagnosing challenging pre-operatively as the radiological findings might not be as specific. Case presentation: A 75 male Moroccan patient with Normal Body mass index, Medically free. His main complaint was Abdominal pain in the epigastric area. His past surgical history was positive for a left open inguinal hernia repair with mesh three months ago that went uneventfully And an open appendectomy before 20 years. The Abdomen X-ray: multiple air-fluid levels with dilated small bowel as well as perfectly rounded calcifications at the right lower quadrant. Conclusion: It's a devastating medical error, but it can be avoidable. Communication between the surgical team and operation staff is a crucial and straightforward tactic to prevent these complications. As the sequel will reveal itself at any time and the patient will pay the price.

Keywords

Gossypiboma, Retained Foreign Body, Surgical Sponge, Small Bowel Obstruction, Surgical Gauze

1. Introduction

In the surgical field, we utilize gauze and surgical instruments daily, and the complications can be divided into avoidable versus non-avoidable. The term Gossypioma in the literature indicates a retained surgical sponge or gauze which accidentally left behind in a prior surgery [1] [2]. Misplacing a sponge inside the patient is a tremendous mistake and can be easily preventable; as it's classified as

a human factor error [2] [3]. The incidence is severely underreported in the literature due to several points such as legal consequences, and the reputation of the hospital or even the surgeons. The literature estimated that 1:1000 to 1:1500 intra-abdominal surgeries result in a retained foreign body [1]-[6]. It can be dormant for years or discovered within days as the patient starts to show symptoms, the sequel will reveal itself at any time as we have seen in our own case [1] [7]. In this case report, we present a patient who underwent an open appendectomy more than twenty years back and presented with signs of bowel obstruction with striking X-ray images and intra-operative finding; a perfectly rounded calcified mass with a hard shell engulfing the irretrievable gauze.

2. Case Presentation

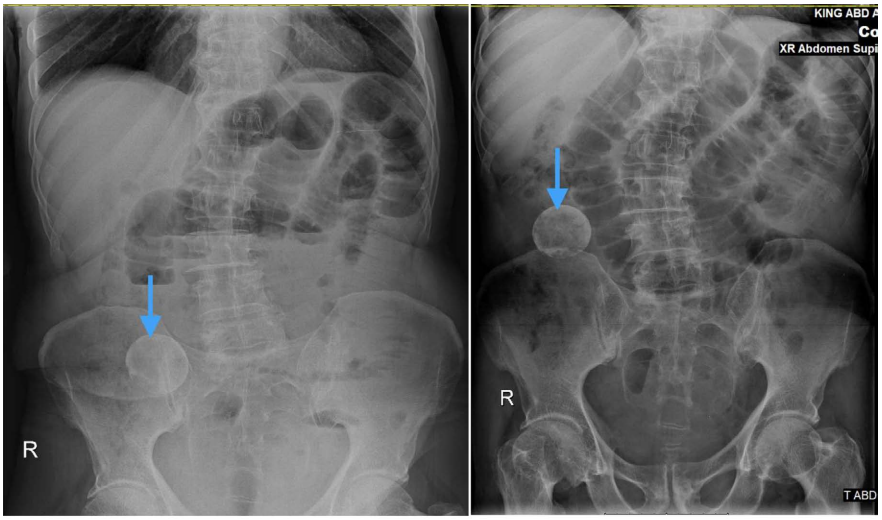
The Patient presented to our screening emergency clinic on July 2nd 2023; he is a 75-year-old Moroccan male, with a Normal Body mass index of 20, Medically free. His main complaint was Abdominal pain at the epigastric area for three days not radiating or shifting, increasing colicky in nature, associated with vomiting multiple times food content, as well as obstipation for the last three days. No previous similar episode. No fever or urinary symptoms as well as a negative drug abuse history. Before these days according to him, he was completely asymptomatic.

His past surgical history was positive for a left open inguinal hernia repair with mesh before three months with no complications and an open appendectomy before twenty Years.

He is married with two offspring. Upon examination, he was conscious, Alert, and oriented, and the vitals were within normal range. The abdomen was mildly distended and tender over the epigastric area with intact hernia orifices and associated with exaggerated bowel sounds.

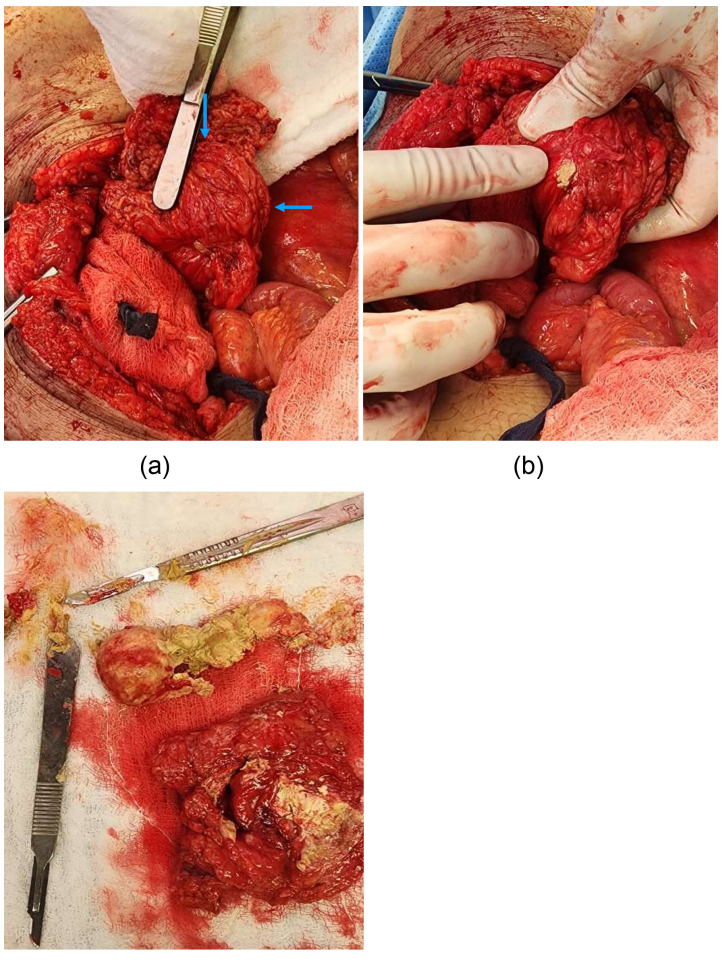
Abdominal X-ray showed; multiple air-fluid levels with dilated small bowel (**Figure 1(a)** and **Figure 1(b)**) plus a well-rounded calcified mass at the right lower quadrant (RLQ). The Chest X-ray was unremarkable. No computerized tomography (CT) of the abdomen was done.

However, all his laboratory results were within normal ranges. The patient was admitted and the decision was taken to operate as the patient was in complete bowel obstruction, he underwent Exploratory laparotomy; The finding was multiple jejunal loops adhesions in three sites with a proximal dilatation and a distal collapse of the bowel, Plus a well rounded stony hard calcified mass measures around 5 * 6 cm (**Figures 2(a)-(c)**); Adhesiolysis was done, and omental mass excised successfully, there were two serosal tears in the jejunal loop which sutured with vicryl; also an iatrogenic injury during bowel run in jejunal loop 25 cm from duodenojejunal junction repaired with sewing vicryl in two layers, another bowel run done and it was unremarkable. The pelvic drain was inserted, and we washed the whole abdominal cavity with 2 Liters of warm Normal Saline.



(a) (b)

Figure 1. a) Supine view Dilated small bowel, (The arrow) well-rounded calcification mass at RLQ; b) Erect multiple air-fluid levels.



(a) (b)

(c)

Figure 2. a) (Arrows) Intra-operative mesentric calcified mass; b) Thick secretion from the mass; c) The gauze and the omental mass.

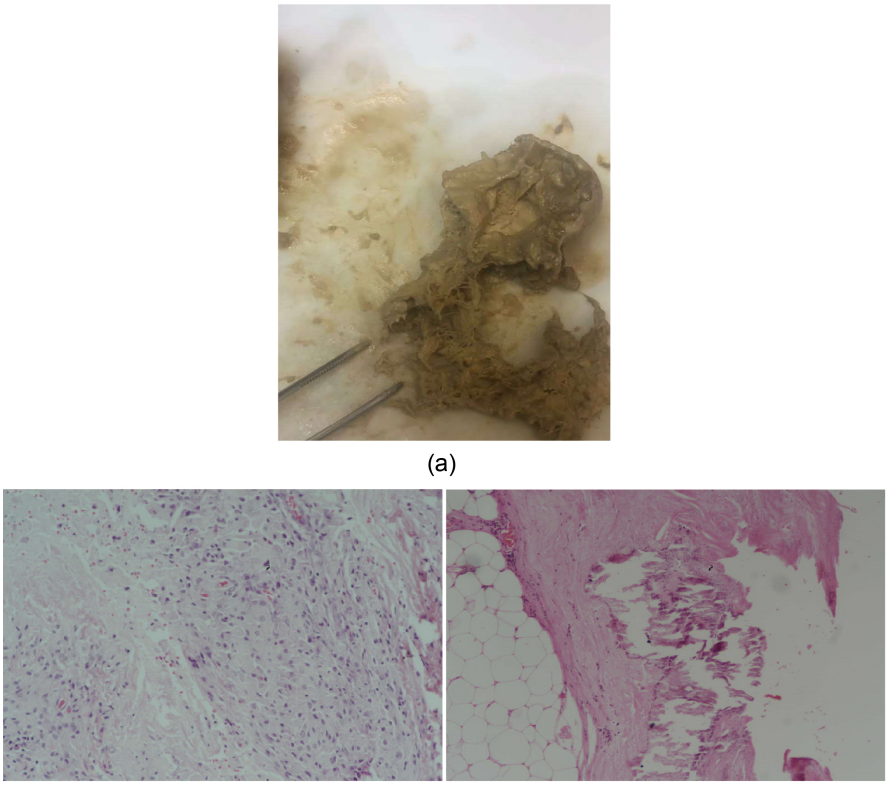


Figure 3. a) The gauze remnant; b) Histiocytic cells in the fibrous calcified tissue around the foreign body; c) Foreign body with calcification.

The patient was intubated for one day and then extubated the next day. The drain was removed on the fourth day, and he tolerated orally passed stool and was discharged with no complications. He followed up with us in the clinic, doing well and back to his usual life habits.

The specimen was analyzed, and the Histopathology report disclosed it is a hard shell like a nutshell, congested fatty tissue with calcifications and epithelioid cells (multi-nucleated giant cells reactive to the foreign body), which is the gauze seen by the naked eye. (**Figure 3(c)**)

3. Discussion

Among existing literature review, a Gossypioma is a rare finding [1] [4] [8], it can also be called a retained surgical item (RSI), cottonoid, cottonballoma, muslinoma, textiloma, and gauzeoma [5]. Meanwhile, the most common places to be found are the abdomen, thorax, and pelvis [2]; in this case, the retained gauze was within the abdominal cavity and the patient presented as a case of complete small bowel obstruction (2). While the reporting of such cases is lacking because of the fear of medico-legal pursuits or even reputation damage among hospital staff [3] [5] [8] [9]. The presenting symptoms vary widely from abdominal pain, vomiting, and abdominal mass, or it can even mimic neoplastic tumors if it is found in the extremities. In addition, they can present with complications,

namely peritonitis, bowel obstruction, perforation, and abscess or fistula formation [7] [8] [9].

Since presentation differs based on the location of the retained gauze, we can keep in mind that one of the differential diagnoses is RSI in approaching patients with a positive surgical history, such as in this case, it was an open appendectomy more than twenty years back, although he did a hernia repair with mesh at another hospital three months back and discharged with no complications [1] [3] [6] [7] [9].

There are two main reactions for retained foreign bodies in the abdomen; either an aseptic fibrinous response that creates adhesions, granuloma, and calcifications, such as in our case the inflammatory reaction was unique it had encased the gauze in well shape circler hard mass with stony resonance and excluded it from the surrounding organs, or an exudative response leading to the formation of abscesses, fistulas, or intestinal obstruction [2] [5] [7].

Furthermore, diagnosing Gossypioma preoperatively is a burdensome matter, at times, the images are equivocal and misleading; it can be an X-ray, ultrasound, or CT. However, CT is the gold standard worldwide for approaching RSI [5] [9].

The risk factors are variable and numerous, an emergency surgery or unforeseen finding intra-operatively, even a blood loss more significant than 500 cc is profound, and high BMI is also a considerable risk factor. Another chief reason is communication failures either between the surgical team themselves or operating room staff from nurses, observers, and even radiologists in the reporting manner. Routinely we underrate counting methods, or we belittle the double count, there is universal standardization and protocols to the operating rooms, the operating room staff and surgeons should bear it in mind and practice it mandatory in all cases [4] [6] [9].

On the other hand, the morbidities to the patient are devastating and the cost to the hospital is exhausting financially, and it is easily preventable from the first operation. It is a human factor error and it will always be there, nevertheless we try to minimize it the most [3] [4] [7] [8].

Finally, If the diagnosis is well established, the treatment mood for the patients is surgery, either open or laparoscopic, tailored to each case [5] [7] [8] [9].

4. Conclusion

The literature review aims for preventive measures more than a receptive approach to Gossypiboma or RFI. It is a rare complication in the surgical field, but the incidence has been rising lately despite all the protocols and checklists provided by each hospital. It's a human factor, so it can be preventable, and we shouldn't neglect this step during the surgery or treat it lightly as it comes with considerable morbidity to the patients and massive expenses on the health care system and physicians. We can benefit from new technologies such as electronically tagged sponges and electronic gauze counting; nevertheless, more studies and research are to prove their effectiveness. At last, communication between

the surgical team and operation staff is a crucial and simple tactic to prevent these complications.

Ethical Approval

This article contains no studies with human participants or animals performed by any authors.

Consent

Informed and written consent Taken from the patient.

Authors' Contributions

IM: The leading surgeon. NS: Study design and assistance in the operation, Case presentation, and writing the manuscript, plus reviewing it and image processing. HM: reviews the histopathological part and slides.

All authors read and approved the final manuscript.

Declaration of Competing Interest

The authors declare no conflicts of interest.

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