



Gossypiboma left behind in a cesarean section ended up with a failed laparotomic excision, which demanded another laparotomy to remove it: a rare case report

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Introduction and importance: Retained surgical items are an uncommon complication for surgical operations, with an estimated incidence of 1 in 5500 to 1 in 18 000 operations. Retained surgical sponges are the most common retained surgical items, accounting for nearly 70%. In 1884, Wilson reported the first retained foreign body after laparotomy.

Case presentation: A 22-year-old woman was referred to our hospital complaining of a feeling of abdominal bloating and heaviness associated with pain, fever, fatigue, and severe stink vaginal discharges. Past surgical history included a cesarean section followed by laparotomy to remove a foreign body left behind; the obstetrician denied the presence of any foreign body. The diagnosis of retained surgical sponges was done in our hospital, according to the clinical history and radiographic study. The second laparotomy was performed, and the surgical sponge was removed.

Clinical discussion: Retained surgical items' symptoms vary according to the site and types of materials. The diagnosis may be difficult because it resembles benign or malignant soft-tissue tumors of the abdomen and pelvis. Ultrasound and computed tomography have been used for the diagnosis of retained surgical items. The minimally invasive surgical approach appears to be most successful if the object is located early in the postoperative course.

Conclusion: Retained surgical items are serious problems of surgical operations and should be among the differential diagnosis of any abdominal pain in patients with a history of prior surgery.

Keywords: abdominal pain, foreign body, gossypiboma, vaginal discharges

Introduction

The unintentional retained surgical items (needles, sponges, or instruments) when performing surgical operations and other types of invasive and non-invasive medical procedures are uncommon. The estimated incidence of retained surgical items is ranging between 1 in 5500 to 1 in 18 000 operations^[1].

Surgical sponges account for nearly 70% of all types of retained surgical items^[2].

The term 'gossypiboma' is derived from the Latin *Gossypium*, 'cotton,' and the Swahili *boma*, meaning 'place of concealment,' also known as *textilomas*, originating from 'textilis' (meaning

HIGHLIGHTS

- Vaginal discharges could be the main complaint of gossypiboma.
- Retained surgical items cause significant morbidity and mortality to the patient and medico-legal problems to the surgeons.
- The necessity to take serious steps to avoid retained surgical items.

weave in Latin) and 'oma' (meaning disease, tumor, or swelling in Greek)^[3].

The incidence of retained surgical sponges varies between 1 in 1000 to 1500 intra-abdominal operations and 1 in 300 to 1000 of all operations. The currently available statistics assets about gossypiboma are affected by underreporting due to legal affairs and health insurance issues. Another related cause is that many patients remain asymptomatic^[4].

Gossypiboma is a major safety violation, and it accounts for 50% of malpractice claims^[5].

In a systematic review conducted by Wan *et al.* containing 254 gossypiboma cases, gossypibomas were most commonly found in the abdomen (56%), pelvis (18%), and thorax (11%) and Pain/irritation (42%), palpable mass (27%), and fever (12%) were the leading signs and symptoms, but 6% of cases were asymptomatic. The average discovery time was found to be equaled 6.9 years (SD 10.2 years) with a median (quartiles) of 2.2 years (0.3–8.4 years)^[6].

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The first case of a retained foreign body after laparotomy in the literature was reported by Wilson in 1884^[7].

Case presentation

A 22-year-old woman was referred to our hospital from a rural area, complaining of a feeling of abdominal bloating and heaviness associated with pain, fever, fatigue, and severe stink vaginal discharge.

Her vital signs: blood pressure: 130/60 mmHg, pulse: 93 bpm, oxygen saturation: 97%, and temperature: 37.8°C.

Past medical history (treatments and investigation):

The patient's chief complaint started after her last cesarean section a year ago and has been lasting for 7 months.

During this period, she has been treated by different doctors with antibiotics and vaginal washings as she was diagnosed with bacterial vaginosis, unfortunately with no clinical response.

Past radial investigations:

An abdominal and pelvic ultrasound revealed a foreign body located on the anterior wall of the uterus (between the bladder and the uterus).

Consequently, the patient underwent an operation (exactly 7 months ago).

Because it happened in a remote region where insufficient medical documentation could be found, we could not know any events about this surgery except what the patient told us.

As a result, this surgery report was as follows: there is nothing abnormal with the patient and no foreign body has been found!!

Physical examination:

The gynecological examination has shown heavy, nasty vaginal discharges and a greenish-white purulent fluid.

Patient's actual treatment course and follow-up at our hospital:

A pelvic ultrasound was performed and showed a foreign body still in utero-bladder space with severe edema in this area.

In addition, an abdominal and pelvic computed tomography (CT) was performed and showed the following: a low-density mass measuring 4.7 × 5 cm with a thin enhancing capsule with gas bubbles inside, which indicates a possible complication of a retained surgical sponge (Fig. 1).

Surgical intervention was necessary, so the patient was scheduled for surgery after an appropriate preparation with an accurate antibiotics course.

A general surgeon was informed of the condition in case of unpleasant complications.

A laparotomy was performed under general anesthesia with a Pfannenstiel incision.

The foreign body (which was a retained surgical towel) has been removed (Fig. 2) and taken as a specimen for bacterial culture.

A Foley catheter was placed in the cavity of the gossypiboma in addition to an abdominal drainage tube.

The patient recovered completely after surgery, and no complications occurred, so she could be discharged in stable condition after a week.

We obtained the patient's informed consent. She refused any legal case against the obstetrician who forgot the surgical sponge in the cesarean section.

This case report was conducted in accordance with SCARE (Surgical CAse REport) guidelines^[8].

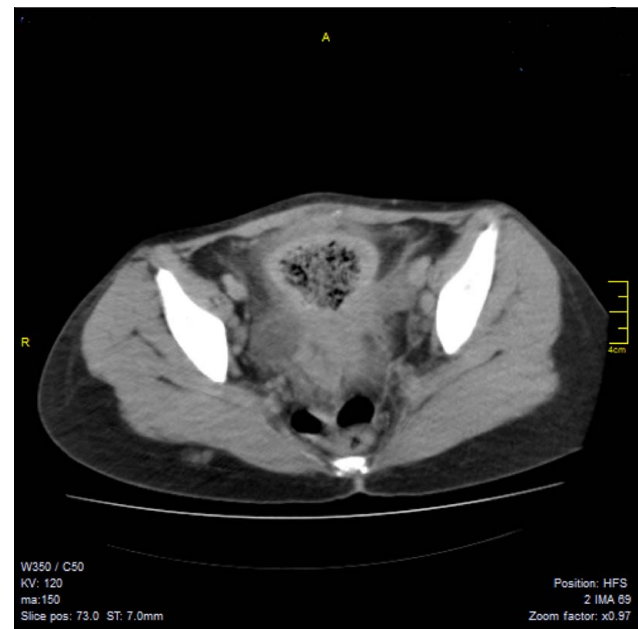


Figure 1. A transverse view showing a 4.7 × 5 cm calcificated mass with a thin enhancing capsule and gas bubbles inside, suggesting a retained surgical sponge located in the space between the bladder and the uterus.

Discussion

Several risk factors associated with an increased chance for unintentionally retained surgical items include blood loss of more than 500 cm³, high body mass index, long time operations, more than one sub-procedure, more than one surgical team, unex-



Figure 2. The retained surgical sponge.

pected intra-operative findings, lack of surgical counts, and incorrect counts^[9,10].

Pathologically, a retained surgical sponge could provoke foreign body reactions of two types: the formation of foreign body granuloma due to an aseptic fibrinous response or an exudative reaction causing an abscess formation^[11].

Retained surgical items' symptoms vary according to the site and types of materials. Pseudotumoral, occlusive, or septic syndrome; mild abdominal discomfort; symptoms of intestinal obstruction like abdominal distention, vomiting, non-passage of feces and flatus; or may even lead to a malabsorptive state^[12].

Some rare complications of gossypiboma have been reported, like spontaneous transmural migration of a surgical sponge into the intestinal lumen, resulting in mechanical intestinal obstruction, and expulsion of the sponge via the rectum^[13–15].

Gossypiboma can be difficult to diagnose because it resembles benign or malignant soft-tissue tumors of the abdomen and pelvis^[16].

Plain radiography, ultrasound, and even magnetic resonance imaging (MRI) have been used for diagnosis, but the CT scan has emerged as the most reliable method for diagnosing retained items^[17].

The ultrasound feature is usually a well-defined mass containing a wavy internal echogenic focus with a hypoechoic rim and a strong posterior shadow^[18].

On CT, a gossypiboma may manifest as a cystic lesion with an internal spongiform appearance with mottled shadows as bubbles, hyperdense capsule, concentric layering, and mottled shadows as bubbles or mottled mural calcifications^[19].

Magnetic resonance imaging (MRI) features of gossypiboma in the abdomen and pelvis, which include the delineation of a well-defined mass with a peripheral wall of low signal intensity on T1-weighted and T2-weighted imaging, with whorled stripes seen in the central portion and peripheral wall enhancement after intravenous gadolinium administration on T1-weighted imaging^[16].

Although endoscopic and laparoscopic approaches may be successful, the possibility of erosion or fistula arising from a retained gauze pad usually requires an 'open' approach. The minimally invasive surgical approach appears to be most successful if the object is located early in the postoperative course^[17].

Recently, new techniques have emerged to prevent retained surgical items. Instead of traditional counting technology, there are electronic devices that accurately track the number of surgical items and use radio frequencies to determine if items are missing. These technologies are still under development and are considered relatively expensive^[20].

There are two limitations in this case report: (1) The unclear and poor medical documentation, even the obscuration on the first laparotomy. (2) The last cesarean section and first laparotomy were performed by the same obstetrician, which explains an obvious bias.

Conclusion

A gossypiboma could be a diagnostic dilemma that must be kept in mind by physicians and surgeons as a dangerous postoperative complication.

The retained surgical items impose a high commercial burden; in addition, they form about 50% of malpractice claims, so it is important to take serious steps to avoid its occurrence, which is

the main purpose of this case report, including the use of radiological markers and routine preoperative and postoperative sponge counts.

Ethical approval

Not applicable, it is a case report, and ethical approval is not required in my institution

Consent

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

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Author contribution

L.A., S.S.A., R.B., and O.R.: performed the procedure, patient follow-up literature search, writing the manuscript, article corrections, submitting the manuscript, and reviewing the manuscript; M.I.: literature search, writing the manuscript, article corrections, submitting the manuscript, and reviewing the manuscript. All the authors revised and approved.

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The authors declared the data availability statement.

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