

## Gossypiboma in abdomen: retained surgical gauze after a cesarean section

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**SUMMARY: Gossypiboma in abdomen: retained surgical gauze after a cesarean section.**

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*A mass formed around a cotton matrix left within the body is termed gossypiboma or textiloma. It is a rare complication of surgery most commonly seen after abdominal surgery.*

*The time of presentation may range from early post-operative period to several decades later. We herein report on a case of gossypiboma. A 42-year old woman admitted to our hospital with abdominal mass. She had undergone a caesarean operation 2 years previously. The mass in the right quadrant was suspected by abdominal ultrasound and magnetic resonance imaging.*

*The mass was removed by laparoscopy excision and the final diagnosis was gossypiboma.*

KEY WORDS: Gossypiboma - Gauze - Surgery.

## Introduction

*Gossypiboma* is the term used to refer to an intra-operative mistake discovered postoperatively in which one or more surgical sponges, gauze pads, or other form of textile is left behind in the operative field after the patient is closed. Retained surgical sponges may become a nidus for infection and are often grounds for malpractice lawsuits (1).

The exact incidence of surgical gauze or other materials left behind in operated-upon patients is unknown (2). Gossypibomas are most commonly found in the abdomen (56%), pelvis (18%), and thorax (11%) (3).

The term "gossypiboma" is derived from the Lat-

in word *gossypium*, meaning cotton, and the Swahili word *boma*, meaning place of concealment (4). Since, its first report by Wilson in 1884 (5) this has been reported in 1 in 100-5.000 surgical interventions and 1 in 1.000-1.500 intra-abdominal operations (4). Gossypiboma can remain silent or induce a series of inflammatory reactions though they themselves are chemically inert (6). This reaction causes pus formation, fibrosis and/or granulomas giving rise to fistulae or pseudo-tumors (5).

We herein report a case with symptomatic gossypiboma two years after cesarean section.

## Case presentation

A 42-year old female was admitted to the emergency room with abdominal pain. It was learned from her past history that she had undergone a Cesarean operation two years ago. Post-operation, the patient had recurrent episodes of colicky abdominal pain and fever, without any features of obstruction. These symptoms were relieved by antibiotics. The patient, also noticed a lump in her abdomen. On her

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physical examination a Pfannenstiel incision scar and a mobile mass, non-tender, smooth located right abdominal cavity were found, without peritoneal signs. Examination of other systems was essentially non-contributory. Her other hematological and biochemical parameters were within normal limits.

At MRI there is evidence of a large well-defined cystic mass, 111 x 135 mm, located in the right lumbar region (Figure 1). The cystic lesion was capsulated by a fibrous material with sclerotic transformation. Its thickness ranges from 4 to 9 mm. Inside the cyst showed a linear irregular aspect that is surrounded by a liquid viscose composition. In general, the adherence to neighboring visceral structures is moderate and to somatic ones significant. There are no infiltrative phenomena.

MRI after administration of intra venous contrast (Figure 2) noticed an unchanged intensity of the cystic content and significant enhancement of the cystic capsule that confirms an important inflammatory process.

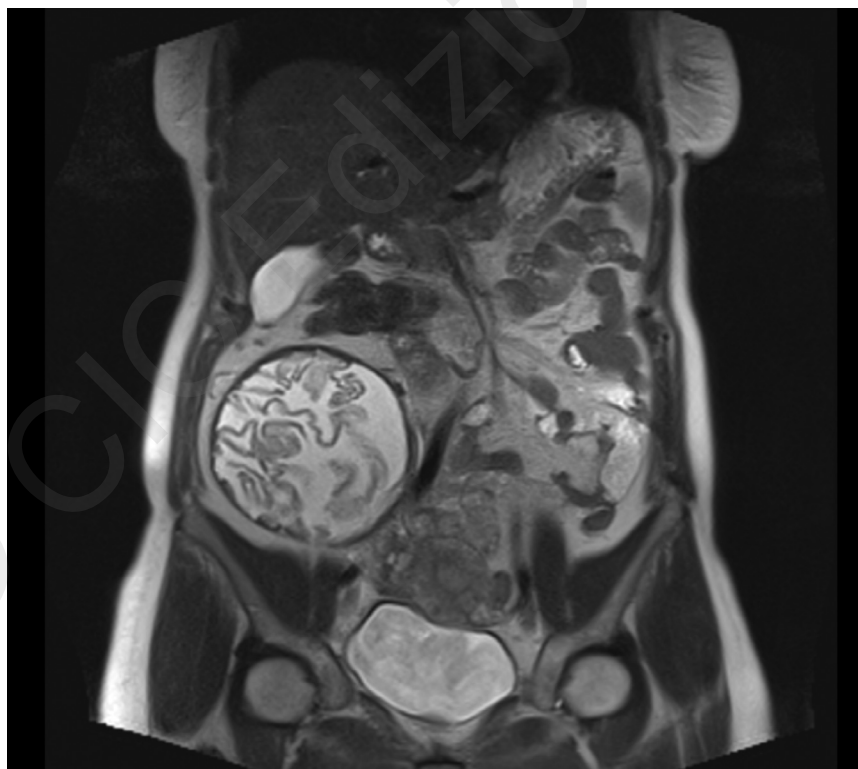
Under general anesthesia, the operated team evaluated to remove the mass with laparoscopy. On exploration in the right abdominal quadrants, a

rigid and mobile mass that was adhered with cecum, ascending colon, omentum was found. No dilated bowel ansa found. On examination after removal of the mass a gauze was found inside it (Figure 3).

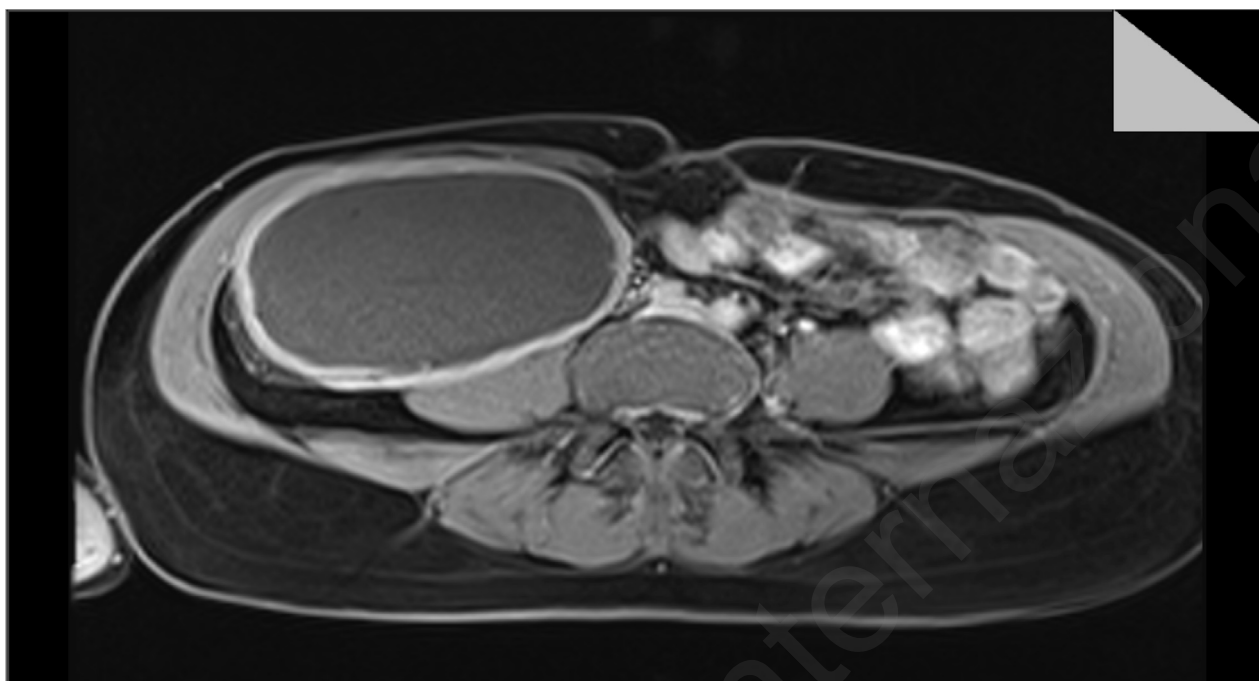
The gauze was separated with difficulty from the adhered organs and removed carefully from the laparoscopic port site, extending the incision making it possible to extract the gauze. The patient had an uneventful postoperative course. Patient was discharged home on postoperative day 3 without any complication.

## Discussion

Retained surgical bodies (RSB) are any foreign bodies left inside the patient after the operation and in general, a further procedure is necessary. The consequence of foreign bodies after surgery may manifest in different forms immediately after the operation, months or even years after the surgical procedure. With more than 28 million operations performed nationwide, the number of cases in which foreign bodies are left behind during a procedure in



**Figure 1 - Magnetic Resonance Imaging (MRI); T2-Weighted-Coronal.**



**Figure 2 - MRI; T1-Vibe-Fs-Axial, post intravenous contrast administration.**



**Figure 3 - Removing the gauze from abdominal cavity.**

the United States has been estimated at around 1500 cases per year (1, 7).

Gossypiboma is the most commonly retained foreign material in the body after surgical operations (8). The most common operations that lead to gossypiboma are the intra-abdominal operations (9), but occurs also after cardiovascular (10), intra-thoracic (9), neurological operations (11), breast surgeries (1) as well as shoulder (12) and the limb operations (13). Risk factors include emergency operations and high body mass index (4, 6).

Gossypibomas may present as either of the following syndromes - pseudotumoral, occlusive, or septic entities (4). Patients generally complain of non-specific abdominal pain, nausea, vomiting, and abdominal distension, rectal bleeding, altered bowel habit, fever, anorexia, weight loss, malabsorption syndrome, or a palpable mass (14). They might even present with features of severe pain due to peritonitis or obstruction or as external fistulae or non-healing infection of the surgical wound. Colicky abdominal pain, nausea, vomiting, features of malabsorption or abdominal mass in a patient who had undergone an intra-abdominal operation lead to the suspicion of gossypiboma. About a third of gossypiboma patients remain asymptomatic, with the foreign body solely detected on imaging (15).

Gossypibomas may give rise two types of reactions - exudative leading to abscess formation or aseptic fibrinous giving rise to foreign body granuloma formation (15, 16). The former usually occurs early in the post-operative period and may involve secondary bacterial contamination, which results in various fistulae (1). The longer the retention time,

the higher is the risk of fistulization (16). A history of previous surgery is mandatory for the diagnosis of gossypiboma at whatever site (17). It may mimic other conditions such as a pseudotumour (18), gastrointestinal stromal tumors (19). Radiology is the mainstay of pre-operative of gossypiboma. CT-scan and MRI remains the primary modality of pre-operative diagnosis.

After the diagnosis of gossypiboma is confirmed, removal of the retained bodies surgically, endoscopically or laparoscopically is accomplished in order to prevent severe morbidity or mortality may lead to death (20).

The legal implications of gossypiboma are high (21) as the condition is associated with morbidity and mortality. Prevention is the best management for this entirely avoidable complication. Despite its low incidence, the diagnosis should be considered in all patients presenting with unexplained symptoms, mass, or fistulae with a history of prior surgery and imaging should be carefully evaluated (5, 15).

## Conclusion

In conclusion, RSB are still common despite new surgical techniques and equipment. The key to preventing the incidence of RSB is excellent communication within the surgical team during the procedure, between the surgeons, nurses and anesthetists is key to success. Also, in order to prevent these types of complications, we have to control all of the surgical materials before and after surgery, which is the main principle in all procedures.

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