

# Radiopaque gauze migrating into the intestine – a case presentation

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## ABSTRACT

Despite the meticulous monitoring of surgical material using the WHO Surgical Safety Checklist, gauze sponges and surgical instruments continue to be left inside patients after operations. It is an important issue for surgeons, operating room nurses and the entire medical team. Foreign bodies retained in the system may cause many disorders and result in potentially serious consequences for patients, including death. As well as

this, further procedures are needed to remove them and treat any subsequent complications. Retained foreign bodies are rare, but intraluminal migration of the foreign body should be considered extraordinary. Very few cases have been reported so far. The authors believe that it is desirable to perform a wide range of diagnostic imaging in such cases.

**Keywords:** retained surgical item; foreign body; iatrogenic diseases; gossypiboma.

## INTRODUCTION

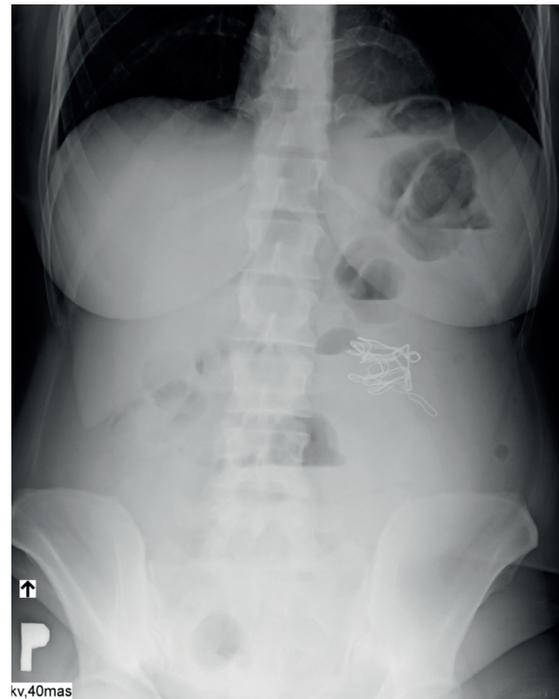
The term 'gossypiboma' is the technical term for surgical complications resulting from foreign materials which are accidentally left inside a patient's body. To prevent these situations, materials are counted using the WHO Surgical Safety Checklist [1]. It may be difficult for the physician to adequately assess these patients without diagnostic imaging. This article shows the process of diagnosis and treatment of such a case.

## CASE PRESENTATION

A 28-year-old female was admitted to the General Surgery Ward in the Saint Hedwig's of Silesia Hospital in Trzebnica presenting with complete fecal and gas obstruction with accompanying colicky abdominal pain and feculent vomiting. She was afebrile and complained of abdominal pain, which had been moderate for several months. This worsened in the 3 weeks prior to admission. Laboratory tests revealed marginally elevated indicators of inflammation (CRP 21.1 mg/dL; WBC 12.13 ×10<sup>9</sup> L).

The patient had been examined a number of times by her general physician but no diagnostic imaging was performed. The patient did not have any chronic diseases and did not take any daily medication. The patient had undergone 2 cesarean sections – the last one in November of 2017 (2 years prior to admission). She declared that she had not had any other surgeries.

The X-ray of the abdomen revealed low intestinal air-fluid levels and radiopaque in the left mesogastrium (Fig. 1).



**FIGURE 1.** The X-ray of the patient's abdomen showing low intestinal air-fluid levels

The computed tomography scan confirmed the presence of a foreign body in the abdomen. Uncharacteristic linear metallic filaments were found in the lumen of the jejunum on the left side with a thickening of its wall of up to 85 mm. The rest of the jejunum wall was thickened up to 38 mm.

The patient qualified for an emergency laparotomy. The abdominal cavity was opened by performing a medial incision

on the abdominal wall, extending from the xiphoid process of the sternum to the pubic symphysis. Distended loops of small bowel and adhesions of the omentum majus to the parietal peritoneum and small intestine loops on the left side were found. After releasing the adhesions, the conglomerate of small bowels was revealed. It was attached to the parietal peritoneum over a length of 10 cm and had adhered to the sigmoid colon and the left appendages. An attempt was then made to release the connection between the conglomerate and the anterior abdominal wall. Because of the tight adhesion, the decision was made to remove a fragment of the peritoneal wall attached to the conglomerate.

The conglomerate of 4 loops was exposed with a dilated afferent loop and collapsed efferent loop (Fig. 2).



**FIGURE 2.** The conglomerate of 4 loops

The gauze was localized 120 cm from the ligament of Treitz. The intestine was filled with spongy material with visible dark ribbons. Because of an inability to dissect the loops, the decision was made to excise the whole conglomerate. After the clamps were placed over the afferent and efferent loops, the intestine was sectioned, and the radiopaque gauze pigmented with bile salts was revealed (Fig. 3).



**FIGURE 3.** The radiopaque gauze pigmented with bile salts in the intestinal lumen

Both ends of the intestine had a satisfactory blood supply and an isoperistaltic anastomosis was performed using Schmieden's technique. There were no signs of abscesses or fistulas. The postoperative course was uncomplicated. The patient was discharged on postoperative day 12 in a good general and local condition.

## DISCUSSION

Retained surgical foreign bodies lead to serious iatrogenic complications and are most often left in patients subjected to abdominal surgeries [1, 2, 3]. In order to avoid situations such as this, it is mandatory to count all surgical materials both during the procedure and after the closure of the abdomen. During the operation, it is advisable to use radiopaque materials as this is significantly easier to identify and retrieve.

It takes an average of 9 months to diagnose a retained foreign body [4]. However, in some instances the diagnosis may be made as late as 32 years after the incident [3]. Fortunately, in the described case, it only took a modest 2 years to discover. There are reports in the literature of surgical foreign bodies retained for several dozen years without any symptoms. One may thus assume that some patients with retained surgical foreign bodies are completely free of any complaints. The transluminal migration of surgical material into the intestine or any other organ in the body cavity, called 'gossypiboma', is extremely rare and seldom described in the literature [3, 5, 6, 7, 8, 9].

The patient was admitted to the hospital presenting signs of intestinal obstruction. She stated that she had not had any surgeries on her digestive tract. The only complication in her medical history was severe bleeding during one of the caesarian sections.

Surgical gauze may migrate into the lumen of the intestine without leaving any signs of entry [5, 7, 8, 9]. In this case, no open intestinal wall and no fistulas were observed. In similar cases, histopathological examination shows signs of inflammation with the presence of neutrophil polymorphs, lymphocytes and plasma cells [9]. We suppose that the presence of surgical gauze causes an ulceration of the intestinal wall. At the same time, the gauze slowly migrates into the lumen of the intestine and the wall rebuilds showing no sign of perforation. There is no sign of perforation because of the presence of the gauze.

## CONCLUSIONS

For a number of weeks, the patient was treated by her general practitioner and despite the chronic abdominal pain she had been experiencing for several months, no image diagnostics were ordered. This was presumably because of a lack of acute symptoms. Any kind of chronic pain should be concerning, especially if the patient has undergone surgery. It is important to perform imaging diagnostics if the abdominal pain is chronic.

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