

## Presentation of Intraperitoneal Gossypiboma in a 21-Year-Old Woman with Ovarian Cyst: A Case Report

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### ABSTRACT

Gossypiboma is a rare mass caused by surgical instruments left in the body after surgery. A 21-year-old woman with a history of two cesarean sections presented with abdominal pain; initially, she suspected appendicitis. Unexpectedly an ultrasound showed bleeding ovarian cysts and a radiopaque line that looked like surgical sponge that had been left behind. This discovery led to immediate hospitalization and subsequent laparotomy. During surgical intervention, the medical team encountered a hemorrhagic ovarian cyst with a significant mass of tissue with a diameter of 8 cm. Despite carefully exploring the surgical site, the team did not immediately find the suspected surgical sponge. Further investigation revealed nothing, but a detailed dissection of the mass-like tissue ultimately uncovered the sponge inside.

### Introduction

Gossypiboma, a term used since 1884, describes a mass found inside the body. This mass usually consists of a forgotten surgical sponge or swab made of cotton, surrounded by the body's response to the foreign material [1]. While this issue rarely arises, it can result in significant complications and even death. From a medical point of view, the body's response to the foreign object causes a response that is linked to the earlier occurrence of aseptic fibrosis or an exudative response, which could lead to the formation of a localized abscess [2]. Symptoms of this complication usually appear 3 to 12 weeks after the operation, but in some cases, they may remain asymptomatic for years. It can be randomly diagnosed using ultrasound and radiography [3]. Our purpose in presenting this article is

to discuss the presence of gossypiboma, which developed as an ovarian cyst.

### Case Report

A 21-year-old female patient with a history of two cesarean sections, the first at 19 years old and the second at 20 years old (8 months before the emergency visit), was referred to the doctor due to pain in the lower right quadrant (RLQ) area. After performing blood tests that showed high levels of white blood cells and neutrophils (Figure 1), the doctor suspected appendicitis and requested an ultrasound. The ultrasound revealed the presence of an ovarian hemorrhagic cyst on the right side with a radiopaque line. A radiograph was then taken to confirm the presence of the radiopaque line (Figure 2). The patient was admitted to the hospital for an emergency operation and underwent a laparotomy performed by a

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gynecologist. During the surgical intervention, the medical team encountered a hemorrhagic cyst adhered to a substantial mass of tissue measuring 8 cm in diameter. Despite meticulous exploration, the surgical sponge initially suspected to be present was not immediately located. After further investigation and meticulous dissection of the mass-like tissue ultimately revealed the concealed surgical sponge within (Figure 3). Following the surgery, we observed the patient for 4 days and discharged him without any complications.

Test	Result	Reference Value	Unit
W.B.C	14.8	4.0-11.0	*
Hb	12.8	11.0-16.0	*
H.C.T	36.7	33.0-50.0	*
R.B.C	4.31	2.4-6.85	*
M.C.V	85.15	70-110	*
M.C.H	29.7	20-35	*
M.C.H.C	34.88	30-40	*
PTT	196	150-450	*
Neutrophil	89.7	35-75	*
Lymphocyte	5	13-45	*
Monocyte	5.3	0.0-7.0	*
RDW	12.4		*

Figure 1- Complete Blood Count diff (CBC diff) test

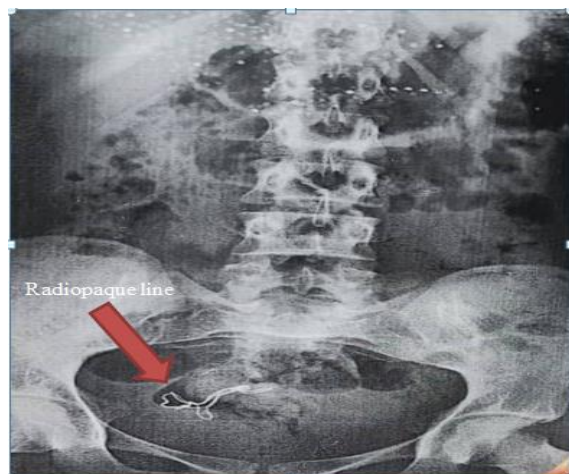


Figure 2- X-ray of the patient's pelvis



Figure 3- Gossypiboma containing a surgical sponge.

## Discussion

Safety is a crucial element of medical services, designed to prevent clinical errors such as the retained surgical instruments (RSI) inside patients' bodies after surgery, which can cause Gossypiboma [4]. This unwanted incident occurs rarely, and its incidence rate is about 1 case in 5500 to 7000 surgeries [5]. The most common surgical procedure in which this complication occurs is cesarean section, as well as abdominal and thoracic surgery [6]. Our patient also had a history of two cesarean sections. According to Parra et al.'s study, gossypiboma, which is a retained surgical sponge, can cause immediate symptoms such as fever, pain, and a palpable mass. However, in some cases, gossypiboma can remain asymptomatic for a long time. In their study, they described a case in which gossypiboma was discovered 52 years after the patient's initial surgery [6]. In our case, the patient also presented to the emergency department with right lower quadrant (RLQ) pain. One of the limitations of our study was that, due to the unavailability of equipment for estimating the age of the Gossypiboma tissue, we were unable to definitively determine whether gossypiboma was related to the first or second surgery. However, this complication likely stems from the second cesarean section, which took place 8 months ago.

Diagnosing a gossypiboma involves considering clinical symptoms and using tests such as ultrasound. However, ultrasound may offer only a limited view of the cystic structure and could potentially miss the diagnosis of Gossypiboma. Therefore, the most appropriate diagnostic method is to look for the radiopaque line in radiographs [3]. In our case, in addition to pain and high levels of white blood cells and neutrophils, the doctor ordered an ultrasound, which confirmed the presence of a cyst. The doctor also suspected a radiopaque line, which was confirmed by x-ray.

In the medical literature, risk factors for retained surgical items have been identified, including the nature of the intraoperative procedure, noncompliance with protocols, emergency procedures, uncontrolled bleeding, unplanned change in surgical procedure, lack of conducting a surgical count, and incorrect surgical counts. Additionally, a higher body mass index (BMI), multiple sub-procedures, and the involvement of multiple surgical teams have been identified as risk factors associated with retained surgical items [5, 7]. One of the primary causes of RSI after surgery is the miscalculation of sponges and surgical instruments [7]. In 2005, the World Health Organization created a safe surgery checklist to improve patient safety. One of the checklist's goals was to prevent surgical instruments from being left inside patients after surgery. Accurately counting instruments before and after each surgery is crucial to ensure their removal from the patient's body. Counting instruments during surgery can be challenging, especially in high-pressure situations such as emergency abdominal surgeries, where the main focus is to save the patient's life

[8]. In their study, Abo-Zahhad et al. concluded that utilizing artificial intelligence and machine learning reduces the reliance on human resources and improves the accuracy of surgery. They found that integrating machine learning and deep learning with current procedures can significantly reduce the incidence of RSI and improve patient safety [9].

## Conclusion

Gossypiboma is a mass that forms inside the body due to a sponge or a forgotten surgical swab made of cotton. The most important risk factor is not counting the surgical equipment correctly. This complication may not show symptoms in the body for several years, but it can endanger patients' lives. Accurate diagnosis is made by radiography. Measures such as the use of safety checklists and artificial intelligence can reduce the occurrence of such incidents and increase patient safety. Finally, it should be noted that this phenomenon is rare; it is crucial to consider the possibility of gossypiboma when encountering patients presenting with symptoms such as fever and abdominal pain, especially if they have a history of surgery, even if it occurred years ago.

## Data availability

A radiography photo and surgical film from this study are available upon reasonable request from the corresponding author.

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