

# Gossypiboma: A Rare Case Report

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## ABSTRACT

Gossypiboma is the name to the tumour like structure within the body, composed of non-absorbable surgical material with a cotton matrix. Due to medico legal implications, cases of retained surgical sponges are rarely reported. Awareness of this problem among surgeons and radiologists is essential to avoid unnecessary morbidity. We present our experience with this entity. We report a case of 21 year old female who came to the OPD with off and on abdominal pain since 3 years with LMP 1 month back with regular normal flow, unmarried, sexually not active, with history of open appendectomy 3 yrs back. USG report shows cholelithiasis with right sided complex ovarian cyst approximately 7cm and left ovarian simple cyst measuring 5.5 cm and CT SCAN shows Complex cystic mass in both adnexal region measuring 7cm and 5.5cm respectively, possibility of endometrial cyst. She was taken up for laparoscopic ovarian cystectomy and cholecystectomy. Ovarian mass decompression with extraction of gauze piece from right cyst with puncturing of the haemorrhagic left cyst and cholecystectomy was performed. Post-operative recovery was uneventful, and the patient was well at 12 months follow up. For any patient presenting postoperatively with infection, pain, or palpable mass in the abdomen, the possibility of retained foreign body should always be ruled out. To prevent any such adverse event sponges are counted by hand before and after surgeries.

**KEYWORDS:** Gossypiboma, Abdominal Pain, CT Scan

## INTRODUCTION

Gossypiboma is the name to the tumour like structure within the body composed of non-absorbable surgical material with a cotton matrix. The term "gossypiboma" comes from the Latin word 'gossypium' (cotton) and the Swahili word 'boma' (place of concealment), and refers to a mass within a patient's body comprising of a cotton matrix surrounded by a foreign body granuloma.<sup>1</sup> The increasing use of synthetic materials in place of cotton has brought in a new term-"Textiloma" (derived from textile) in place of gossypiboma.<sup>2</sup> Retained surgical sponges are seldom reported due to medico legal implications.

Increasing awareness of this problem among surgeons and radiologists can reduce unnecessary morbidity. In this case, we have recorded our experience with this entity. It may not be possible to estimate the exact incidence of gossypiboma, owing to the reluctance to report any such case to avoid legal implications. The incidence of retained foreign bodies following surgery has a reported rate of 0.01% to 0.001%, of which gossypibomas make upto 80% of cases.<sup>3</sup>

## CASE REPORT

Miss X 21 year old female came to the OPD with complaint of pain abdomen off and on since 3 years. There is no history of nausea, vomiting, fever. Her last menstrual period was 1 month back with regular normal flow. She was unmarried and sexually not active. She was

operated for appendectomy 3 years back in some private hospital.

On examination, a mobile, non tender and firm mass 7x6 cm and 6x5 cm was palpable in right and left adnexa respectively. The case was provisionally diagnosed as bilateral ovarian cyst.

All blood investigations were within normal limits. CA-125 value is 14. Ultrasound revealed cholelithiasis with right sided complex ovarian cyst approximately 7cm and left ovarian simple cyst measuring 5.5cm. CT SCAN was done to confirm the diagnosis which shows complex cystic mass in both adnexal region measuring 7cm and 5.5cm respectively with possibility of endometrial cyst.

Depending upon the USG and CT scan report possible diagnosis of cholelithiasis with B/L ovarian cyst was made (Figure 1,2). She was taken up for laparoscopic ovarian cystectomy and cholecystectomy. On laparoscopy, right ovarian cyst measuring 6x6 cm and left ovarian haemorrhagic cyst of size 4x5 cm were seen. Decompression of right ovarian mass was done along with extraction of gauze piece and puncturing of the haemorrhagic left ovarian cyst, followed by cholecystectomy (Figure 3). Multiple dense intra abdominal adhesions were present. Post-operative period was uneventful.

## DISCUSSION

Retained surgical sponge or gossypiboma in the

*How to cite this article:*

Agrawal N, Sodhi M, Malik N. Gossypiboma: A Rare Case Report. *Int J Oral Health Med Res* 2016;2(6):75-78.



Fig. 1. CT scan finding



Fig. 2. USG finding



Fig. 3a. Presence of Guaze piece in cyctic mass



Fig. 3b. Removal of Cystic mass with Gauze piece

abdominal cavity is an infrequent but serious complication. Due to possible medico-legal concern, these cases have not frequently been reported. Gossypiboma is diagnosed more frequently in intra abdominal cavity.<sup>4</sup>

After the initial surgery, gossypiboma may manifest at any time, from a few weeks to several years. There are two types of reaction seen in response to retained surgical foreign bodies. In the first one, an abscess may form with or without a secondary bacterial infection. The second type of reaction is an aseptic fibrinous response, resulting in tissue adhesions and encapsulation and eventually foreign body granuloma.<sup>3</sup>

The presentation of gossypiboma may either be pseudotumoral, occlusive, or septic.<sup>5</sup> They can often present, clinically or radiologically, similar to tumors and abscesses, with widely variable complications and manifestations, making diagnosis difficult and causing significant patient morbidity. The usual complaints are those 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.<sup>5</sup> Sometimes due to peritonitis severe pain may occur. Occasionally, symptoms may arise from obstruction, external fistulae or non-healing infection of the surgical wound. These complications may lead to death with the death incidence ranging from 15 to 22 %.<sup>3,6,7</sup> Usually another surgery is performed for removal of any retained foreign body, which further increases morbidity and mortality.<sup>8</sup> About a third of gossypiboma patients remain asymptomatic, and may remain undiscovered for decades, with the foreign body solely detected on radiography.<sup>9</sup> In our case a retained sponge caused a foreign body reaction to form a foreign granuloma, which mimicked as an ovarian mass or cyst.

Usually, it is not easy to diagnose gossypiboma on the sole basis of clinical features, so knowledge of imaging features of gossypiboma is necessary. It depends upon the site and position of foreign body. Various imaging methods such as x-ray, ultrasonography (US), CT, magnetic resonance imaging (MRI) or fluorodeoxyglucose positron emission tomography (FDG-PET) are

useful in making the diagnosis of the gossypiboma.<sup>10,11,12</sup>

The ultrasonographical features of gossypiboma are - (i) an echogenic area with intense posterior shadow; (ii) in cases of exudative reactions they are seen as a well-defined cystic mass containing distinct internal hyperechoic wavy, striped focus - as seen in our case and (iii) non-specific pattern with a hypoechoic mass or a complex mass.<sup>13</sup> Acoustic shadowing is observed in all cases. This is due to the attenuation of beam by foreign body as well as presence of gas and sometimes calcification.<sup>14,15</sup>

On CT scan, gossypiboma presents as a low-density heterogeneous whorl-like spongiform hypodense mass with air bubbles with an external high-density wall that is further highlighted on contrast-enhanced imaging. Calcification of the mass wall or reticulate rind sign may be observed on CT.<sup>14,16</sup> Nowadays, CT is the main modality for diagnosis (61%), followed by radiography (35%), and USG (34%).<sup>17</sup>

In spite of proper history, detailed physical examination, laboratory and radiographical investigations, usually gossypibomas are not suspected and are often misdiagnosed as tumour. Gossypiboma remain an accidental finding. A similar situation occurred in our case.

Gossypiboma is best removed by open surgery even though laparoscopic and percutaneous removal have been reported in a few selected cases. Sometimes a retained foreign body is a needle or small part of a surgical item. In such cases any attempt to remove them may cause more harm than the item itself. In these cases, removal is not recommended.<sup>18</sup>

**Prevention:** As with many other medical problems, prevention is better than cure for gossypiboma. To prevent gossypiboma, hand-counting of sponges is done before and after surgeries. This method was codified into recommended guidelines in the 1970s by the Association of Operative Registered Nurses (AORN). Four separate counts are recommended: firstly, when instruments and sponges are first unpackaged and set up; secondly, before the beginning of the surgical procedure; thirdly, as closure begins; and at last, a final count is made during final skin closure.<sup>19</sup> All these counts are written on the board in operation theatre by the floor nurse. Other guidelines have been promoted by the American College of Surgeons and the Joint Commission.<sup>18</sup>

In most countries, surgical sponges contain radio-opaque material. They can be readily identified in radiographic and CT images, facilitating detection. In the United States, radio-opaque threads impregnated into surgical gauzes were first introduced in 1929 and were in general use by about 1940. Routine postoperative X-ray films have been recommended after surgery to decrease the possibility of retention of foreign body.<sup>20</sup>

## CONCLUSION

Any case of gossypiboma is unique in the sense that on one hand, it possesses a diagnostic challenge, whereas on the other hand, it has its own medico-legal implications. For any patient presenting postoperatively with infection, pain, or palpable mass in the abdomen, the possibility of retained foreign body should always be ruled out. To prevent gossypiboma, sponges are counted by hand before and after surgeries.

## ACKNOWLEDGEMENT

I have the greatest pleasure in expressing my profound sense of gratitude to my sister Dr Swati Agrawal, ADMO, divisional railway hospital, and Dr Neerja Malik, my mentor, Senior consultant, Batra Hospital and medical research centre, New Delhi, who encouraged me to write this paper. I am grateful to them for their valuable suggestion, thoughtful deliberation, constant guidance and tremendous patience. I am thankful to my parents, my teachers, and my husband.

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Source of Support: Nil  
Conflict of Interest: Nil