GOSSYPIBOMA WITH INTESTINAL NECROSIS AFTER CESAREAN SECTION: TWO CASES FROM PAKISTAN

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ABSTRACT

Gossypiboma is a rare but reported complication. We describe two post-cesarean patients from a rural district who presented within 2–3 months with abdominal pain and fever at ages 20 and 49 years. The uniqueness of these cases lies in the presentation of patients from different age groups and with varied clinical symptoms and signs**.** One case was diagnosed with gossypiboma on a computed tomography (CT) scan of the abdomen and required urgent exploratory laparotomy due to vague symptoms of intestinal obstruction. The other was initially diagnosed with rectus sheath hematoma on ultrasound, but was found to have gossypiboma intraoperatively. On follow-up, loopograms were performed, and reversal of the ileostomy was done. Both patients are healthy on follow-up.

This case is striking owing to the need for an emergency exploratory laparotomy with double-loop barrel ileostomy, due to secondary bowel necrosis caused by gossypiboma.

Keywords: Foreign Bodies, Surgical Sponges, Postoperative Complications, Intestinal Obstruction, Cesarean Section.

How to cite this article: Usman M,Sarwar N, Kaleem S, Hamid T, Ali A, Rehamn KU. Surgery Case Reports: Advances And Techniques Erroneous Surgeries: Two Case Reports Of Gossypiboma In Pakistan. Pak Postgrad Med J 2025;36(3): 150-154

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Received: April 17,2025; Revised: September 16,2025
Accepted: September 27,2025

DOI: https://doi.org/10.51642/ppmj.v36i03.775

INTRODUCTION

Gossypiboma or textiloma, a term coined to describe retained surgical sponges or gauze after surgery, is a rare and seemingly under-reported event regarding errors occurring in the operating room.[1] An accurate account of incidence is unknown owing to medico-legal concerns, lack of patient medical literacy and even physicians' awareness of such a complication. Although precautions taken for surgical procedures are strict and effective in most operative theatres, the incidence of retained foreign bodies following surgery has a reported rate of 0.01–0.001%, of which gossypibomas make up 80% of cases.[1] The reported incidence of gossypiboma after intraabdominal operations is 1 per 1000–1500. Most gossypibomas occur at intraabdominal operations, the majority from gynaecological surgery but rarely from cesarean section.[2] In Pakistan, particularly, such reports are scarce in the literature.[3]

Two cases of women presenting with vague abdominal symptoms following post-cesarean procedures, which were subsequently diagnosed as gossypiboma. These cases underscore the potential serious complications of retained surgical items, including intestinal necrosis, and highlight the importance of prompt recognition and intervention.

Case Presentation: Both patients were treated at Arif Memorial Teaching Hospital, presented in the same month 2nd and 23rd September 2024. These two cases were included consecutively in this series**.**

CASE 1

A 49-year-old female presented with a 2-month history of abdominal pain and high-grade fever (102.4°F) following total abdominal hysterectomy. Her symptoms commenced gradually, characterized by non-radiating, intermittent, stabbing abdominal pain relieved only by medication, associated with intermittent high-grade fever with rigors and chills. The patient's past medical history was significant for chronic hepatitis C, diagnosed 6 months prior. Her surgical history included a total abdominal hysterectomy performed 2 months earlier for extensive uterine fibroids. She denied vomiting, diarrhea, constipation, vaginal discharge, weight loss, or burning micturition.

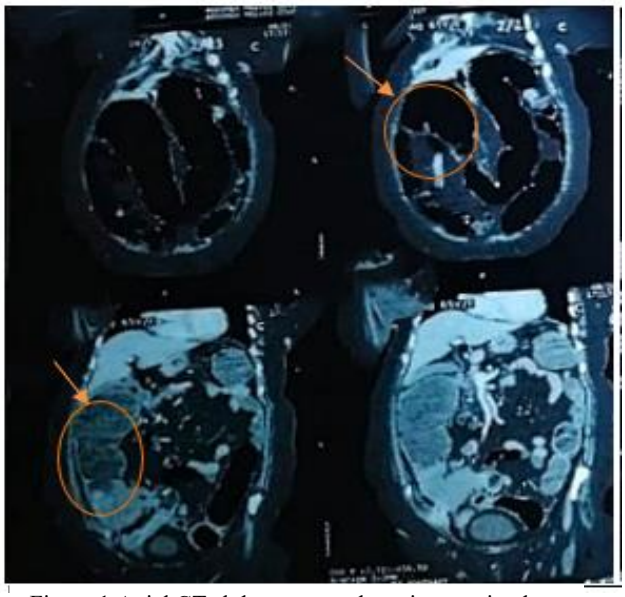

Figure.1 Axial CT abdomen reveals major proximal dilated Gut bowel loops

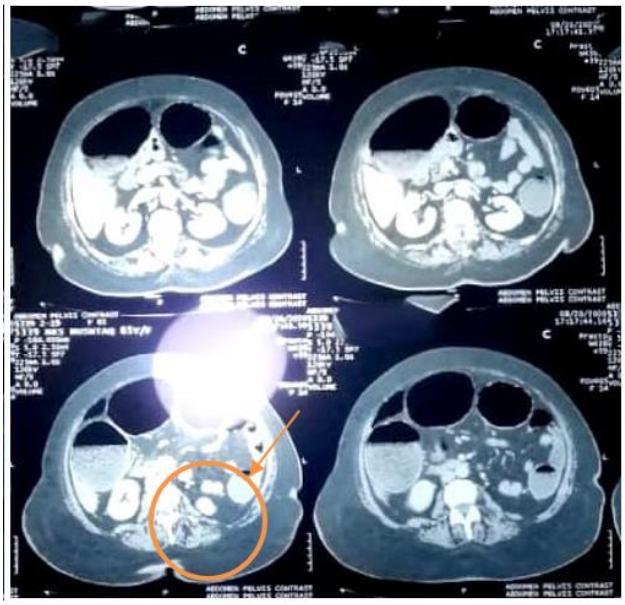

Figure.2 A hyperdense whorled internal pattern foreign body is present in multiplanar the C.T abdomen and pelvis

On presentation, the patient was vitally stable and fully oriented. Physical examination revealed tenderness in the umbilical and suprapubic areas, without a palpable mass. Laboratory investigations showed reduced hemoglobin (9.3 g/dL), elevated monocytes (12.1 × 10^9/L), and neutrophils (80% of total WBC). Liver function test results were awaited at the time of presentation due to underlying chronic hepatitis C. Initial differential diagnoses included pelvic inflammatory disease, cystitis, or endometrial cyst.

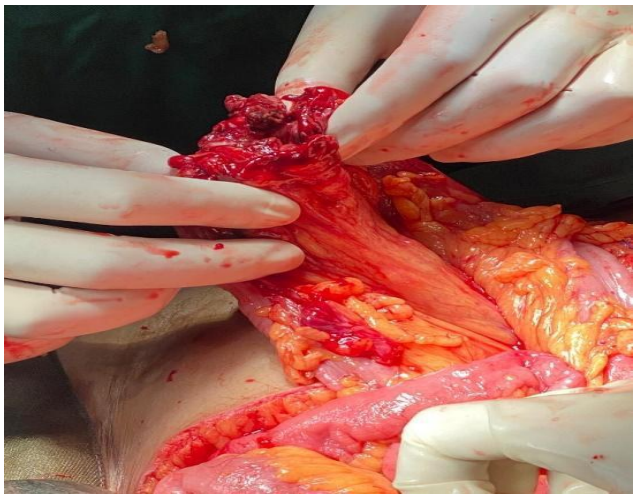

Figure.3 Surgical sponge adherent to the transverse colon

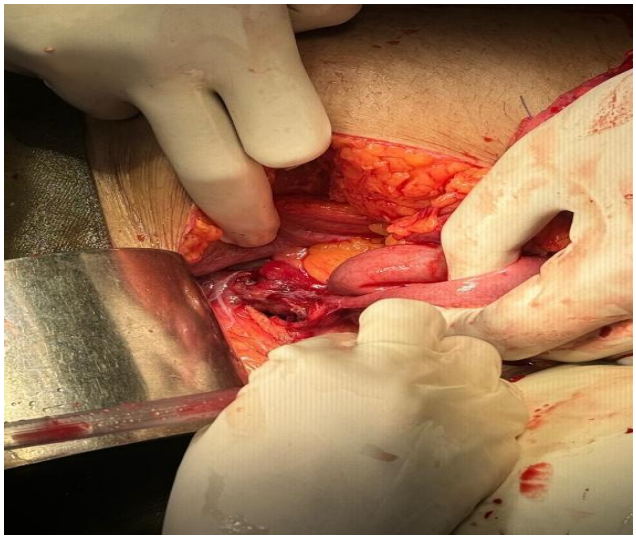

Figure.4 Perforation of the antimesenteric borders

Imaging studies, including ultrasound, demonstrated a tubo-ovarian mass with chronic suppurative salpingo-oophoritis and liver parenchymal changes. Computed tomography (CT) of the abdomen and pelvis revealed a heterogeneous area with air localized in the right subhepatic region, not communicating with adjacent bowel loops, but closely abutting the colon and appearing adherent to it (Figure 2), causing bowel dilation (Figure 1). An emergency exploratory laparotomy was planned.

Intraoperative findings revealed a retained surgical sponge adherent to the transverse colon (Figure 3), resulting in a 5×3 cm perforation at the antimesenteric border (Figure 4). Ileal adhesions necessitated the creation of a double-barrel loop ileostomy after family consent. Two drains were placed. Postoperatively, the patient showed marked improvement and was discharged on postoperative day 7. Follow-up was scheduled at 2 weeks for wound check and ileostomy care, 6 weeks for ileostomy reversal, and 3 months for chronic hepatitis C evaluation. At follow-up, she reported a significant reduction in abdominal pain and fever. Ileostomy reversal was performed at 6 weeks without complications, and chronic hepatitis C management

CASE 2

A 20-year-old married female presented to the emergency department with a one-month history of abdominal pain and fever following a cesarean section two months prior**.** She had no comorbidities. The abdominal pain was gradual in onset, non-radiating, and progressive, accompanied by undocumented intermittent fever for one week. She also reported nausea and vomiting for 2 days, without blood or mucus. There was no history of diarrhea, constipation, vaginal discharge, weight loss, or burning micturition. Her last menstrual period was 25 days prior.

On examination, she was vitally stable, fully oriented, and of lean physique. Abdominal examination revealed a soft abdomen with tenderness in the suprapubic and umbilical regions, and a 2×3 cm immobile, solid, suprapubic mass with normal bowel sounds. Initial differential diagnoses included acute gastroenteritis, lipoma, or tubo-ovarian cyst.

Laboratory investigations showed hemoglobin 10.2 g/dL, elevated WBC (15.1 × 10^9/L) with 80% neutrophils, and normal liver function tests. Blood cultures were negative. Ultrasound revealed a well-defined anechoic mass within the rectus abdominis muscle, suggestive of rectus sheath hematoma.

The patient was admitted with a plan for surgical evacuation of the rectus sheath hematoma. However, intraoperatively, retained surgical sponges were discovered in the suprapubic region, along with gut perforation and necrosis (Figures 5 and 6). This highlighted the diagnostic challenge of gossypiboma mimicking a hematoma. Consequently, exploratory laparotomy with midline incision and creation of a double-barrel loop ileostomy was performed after informed consent from her husband.

The patient improved postoperatively and was discharged on day 10. Follow-up at 2 weeks (wound check and ileostomy management), 6 weeks (ileostomy reversal), and 3 months (surgical outcome evaluation) were uneventful. Histopathology confirmed chronic suppurative inflammation and foreign body reaction.

Figure.5 Multiple gossypiboma seen during open laparotomy

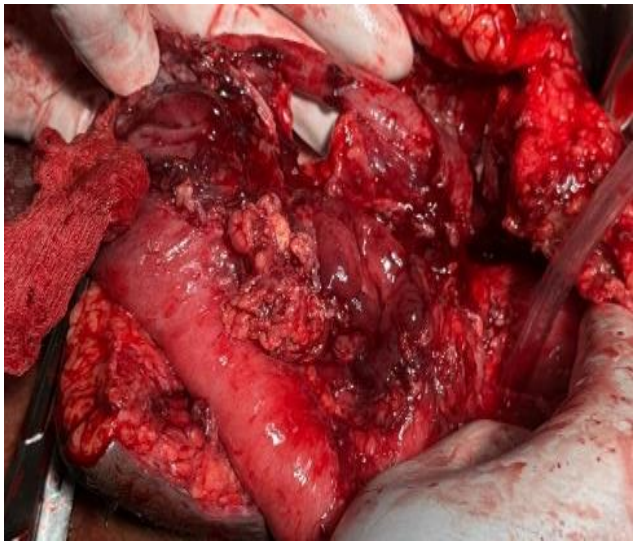

Figure.6 Necrosis and small intestinal perforation

DISCUSSION

The two cases presented in this report highlight the key clinical and operative features of gossypiboma in the local surgical context. In both patients, the index surgeries were gynecological—total abdominal hysterectomy in the first case and cesarean section in the second—consistent with the high-risk profile described in regional studies. Both women developed progressive abdominal pain and fever within weeks of surgery, with one also having a palpable suprapubic mass. Imaging findings were variable. Ultrasonography proved misleading in both cases, suggesting tubo-ovarian pathology in one and rectus sheath hematoma in the other, while computed tomography (CT) in the first case revealed a heterogeneous collection with internal air closely abutting the colon, raising suspicion of a

retained foreign body. These findings underscore the diagnostic challenge, as gossypibomas can mimic a wide range of abdominal pathologies. Definitive diagnosis in both patients was established intraoperatively, revealing retained surgical sponges complicated by bowel perforation, adhesions, and localized necrosis.

Both patients underwent double-barrel loop ileostomy, a surgical technique chosen to protect the perforated and necrotic bowel segments while ensuring diversion of enteric contents to allow healing and prevent peritoneal contamination. This approach is particularly indicated in scenarios where primary repair carries a high risk of leakage due to inflammation, compromised bowel integrity, or dense adhesions, as was evident in our cases. Postoperatively, both patients recovered well, with uneventful ileostomy reversals at six weeks, demonstrating that timely surgical intervention can lead to favorable outcomes.

The clinical patterns observed align closely with previously reported cases in Pakistan. Local literature has consistently shown that gossypibomas most often follow obstetric and gynecological procedures. A retrospective review from Karachi reported 14 cases, with cesarean section and hysterectomy being the most common index surgeries [4]. Similarly, a case series from Hyderabad highlighted abdominal mass, intestinal obstruction, and sepsis as typical presentations.[4] In our cases, early presentation within 2–3 months contrasts with some regional reports where diagnosis was delayed for years, emphasizing the benefit of early recognition. From a surgical anatomy perspective, gossypibomas can lead to significant gastrointestinal complications, including adhesions, obstruction, perforation, fistula formation, and secondary ischemia. In our first case, transverse colon perforation and ileal adhesions were observed, while in the second case, gut perforation with necrosis was present. These findings mirror reports in the literature where retained sponges have caused bowel obstruction, inflammatory masses, and perforation requiring segmental resection or diversion.[5-7]

Such manifestations underline the importance of considering gossypiboma in the differential diagnosis of post-surgical patients presenting with abdominal pain, fever, or obstructive symptoms. Risk factors for retained surgical items reported locally and internationally include emergency procedures, high surgical workload, inadequate sponge counts, and absence of radiopaque markers.[5,8] In both our patients, these risk factors were evident, underscoring the importance of strengthening perioperative protocols.

Obstetric operations performed under time pressure, such as emergency cesarean sections, are particularly vulnerable, as reflected in our second patient. These systemic factors highlight the need for strengthened perioperative protocols, including strict sponge counts, mandatory use of radiopaque sponges, and intraoperative imaging when discrepancies arise. Prevention remains the cornerstone of reducing gossypiboma incidence. Beyond technical safeguards, cultivating a culture of transparent error reporting and accountability is critical. Medico-legal concerns, fear of litigation, and under-reporting often limit recognition and publication of such cases, particularly in Pakistan.[4,9] In addition, cultivating a culture of transparent error disclosure is crucial. Pakistani authors have highlighted the medico-legal and ethical challenges of gossypiboma reporting, often leading to under-recognition and under-publication of such cases.[6,10] By presenting these two cases with detailed operative and follow-up data, we aim to emphasize both clinical learning and systemic lessons for surgical practice.

In summary, these cases reaffirm the diagnostic and management challenges of gossypiboma, including misleading imaging, gastrointestinal complications, and operative decision-making. The choice of double-barrel loop ileostomy in the setting of bowel necrosis and perforation demonstrates an effective surgical strategy for managing such high-risk complications. Early recognition, prompt surgical intervention, and structured follow-up resulted in favorable patient outcomes. Nonetheless, the persistence of preventable retained surgical items underscores the urgent need for systemic reforms, adherence to perioperative safety measures, and continued surgical team education in Pakistan.

CONCLUSION

This case reports demonstrates the life-threatening complications associated with a retained surgical sponge including massive necrosis of the bowel that necessitated complex surgical intervention such as a double-loop barrel ileostomy. It emphasizes the need for vigilance in the operating theatre, compliance to the surgical safety checks and the importance for an effective trail to avoid these catastrophes.

Consent for publication: Patients have been informed about the publication of their case details and images in a scientific journal for educational purposes.

Consent to participate: Written informed consent was obtained from the patients.

ETHICAL APPROVAL

Ethical approval of case studies was granted by the Institutional Ethical Committee of Rashid Latif Medical College vide reference No 2025/01 dated 23 January 2025

CONFLICT OF INTEREST

Authors declare no conflict of interest.

FUNDING SOURCE: None

AUTHOR'S CONTRIBUTIONS

MU: Concept and Manuscript writing
NS: Operative surgeon, supervision of project, validation of directing all necessary changes
SK: Drafting the work and revising it critically for important intellectual content and final approval of the version to be published.
TH: Drafting the introduction, Data curating, maintaining research data and editing
AA: Acquisition, analysis, and interpretation of data
KR: Data collection & analysis and conception of study.
All Authors: Approval of the final version of the manuscript to be published

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