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Acute Bowel Obstruction Due to Gossypiboma: A Case Report

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Abstract: ***Gossypiboma is the term used to describe a surgical sponge that has been unintentionally left inside the body after an operation. Although rare, it remains a serious and preventable complication that can significantly increase patient morbidity and mortality, as well as pose substantial medicolegal challenges. Intra-abdominal gossypiboma can migrate into hollow organs such as the ileum, stomach, colon, or bladder without any visible breach in their walls. Preventive measures, including meticulous sponge counts and careful inspection of the surgical field before abdominal closure, are critical to avoid such incidents. This report presents the case of a 38-year-old woman in whom a retained surgical sponge had migrated into the small bowel, leading to acute intestinal obstruction.***

Keywords: Gossypiboma, Surgical complications, Intestinal obstruction, Transmural migration, Retained surgical sponge, Patient safety

1. Introduction

Gossypiboma, also referred to as a retained surgical sponge, is a rare yet potentially severe postoperative complication[1]. The term is derived from the Latin word *gossypium* (meaning cotton) and the Swahili word *boma* (meaning a place of concealment). It is also known by other names such as gauzoma, textiloma, cottonoma, and muslinoma. Gossypiboma can significantly impact patient outcomes, contributing to increased morbidity and, in some cases, mortality. While some patients may remain asymptomatic for extended periods—ranging from several months to even years—others may develop clinical symptoms within 3 to 12 weeks or as late as 5 to 7 years after surgery.

When inadvertently left inside the body, a surgical sponge acts as a foreign body, potentially leading to a range of complications[2]. Intra-abdominal gossypiboma can result in abscess formation, fistula development, or transmural migration through the bowel wall. These complications can severely affect a patient's health and quality of life. In this case report, we describe a rare instance of acute bowel obstruction caused by complete transmural migration of a retained surgical sponge into the small intestine. This case underscores the critical importance of early detection and prompt management of gossypiboma to prevent serious adverse outcomes.

2. Case Presentation

We report the case of a 38-year-old woman who was admitted with a 20-day history of abdominal pain. Over the preceding three days, her symptoms had worsened, including colicky abdominal pain accompanied by nausea, vomiting, and constipation. Her medical history was notable for a cesarean section performed seven months prior.

On physical examination, no marked abdominal distention was observed; however, there was mild tenderness in the paraumbilical region and hyperactive bowel sounds were noted. Digital rectal examination did not reveal any abnormalities. Laboratory tests showed mild leukocytosis, and urinalysis indicated the presence of white blood cells and epithelial cells. An abdominal and pelvic ultrasound identified fatty liver and signs of cystitis. Additionally, an abdominal X-ray (Figure 1) revealed a radiopaque object within the abdominal cavity. CT imaging revealed a well-defined heterogeneous mass with a spongiform appearance and internal gas locules, consistent with a foreign body (Figure 2).

Given these findings, the patient was taken for an exploratory laparotomy. Intraoperatively, a dilated segment of the small intestine was found. Careful inspection revealed a firm loop of ileum approximately 70 cm from the ileocecal junction[3]. The distal segment of the bowel appeared normal, with only a small serosal scratch visible on the affected loop. An enterotomy was performed at the site, and a retained surgical sponge was discovered within the bowel lumen (Figure 3). The sponge was removed, and the bowel wall was subsequently repaired[4].

Postoperatively, the patient recovered without complications. She was discharged six days later and remained asymptomatic during an eight-month follow-up period.

This case underscores the need to consider gossypiboma in the differential diagnosis of patients presenting with unexplained abdominal symptoms and a history of prior surgery. Prompt diagnosis and surgical intervention are essential to prevent further complications and support optimal recovery.

3. Discussion

The accidental retention of surgical sponges within the peritoneal cavity is a rare yet preventable surgical complication. The estimated incidence of gossypiboma ranges from 1 in 100 to 1 in 3,000 for all surgical procedures, and from 1 in 1,000 to 1 in 1,500 for abdominal surgeries. Various risk factors contribute to this occurrence, including emergency operations, unexpected intraoperative changes, chaotic environments, rushed or incomplete sponge counts, prolonged procedures, hemodynamic instability, staff inexperience, understaffing, and patient obesity.

Gossypiboma typically elicits one of two physiological responses: an exudative or septic reaction, or a fibrotic

reaction. Complications may include the formation of adhesions, abscesses, fistulas, or even complete transmural migration of the foreign body into the intestinal lumen. This migration often results from pressure necrosis of the bowel wall, and in some cases, the resulting perforation may seal off spontaneously once migration is complete.

Patients may present with non-specific gastrointestinal symptoms such as abdominal pain, nausea, vomiting, anorexia, and weight loss. These symptoms often arise due to intestinal obstruction or a malabsorptive state caused by bacterial overgrowth or the presence of multiple intestinal fistulas.

Plain abdominal radiographs can assist in diagnosis when the retained sponge contains an intact radiopaque marker. However, this imaging modality becomes less reliable when the marker has deteriorated over time. Ultrasonography may show echogenic structures with well-defined acoustic shadows, while CT scans can reveal hallmark signs such as gas bubbles within a spongiform pattern and a low-density mass with prominent rim enhancement—features that are suggestive of a retained surgical sponge. In the present case, the diagnosis was facilitated by identifying a radiopaque marker on plain abdominal X-ray.

Surgical removal remains the standard approach for treating gossypiboma. Nonetheless, spontaneous expulsion through the gastrointestinal tract—though rare—has been documented in some instances. Minimally invasive options, such as percutaneous retrieval, may be used if the foreign object is easily accessible, though these techniques are generally not suitable for intra-abdominal cases. Laparoscopy has also been successfully utilized in certain scenarios for removal of retained sponges.

To minimize the risk of such events, several preventative strategies are critical. First, meticulous sponge and instrument counts should be conducted before, during, and after surgical procedures. Second, thorough inspection of the operative field at the conclusion of surgery is essential. Lastly, the consistent use of surgical textiles embedded with radiopaque markers enhances intraoperative detection and postoperative imaging if needed.

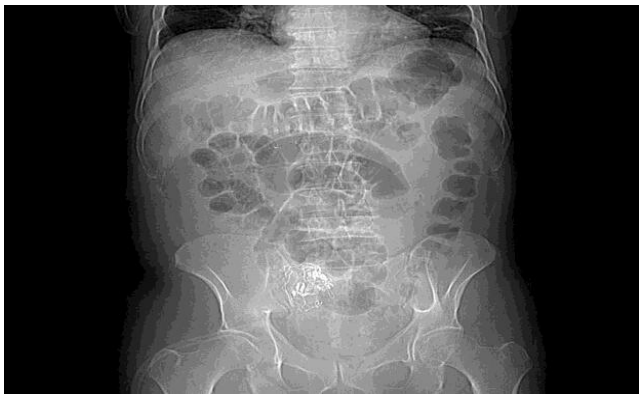

Figure 1: X-ray Abdomen

Figure 2: CT abdomen

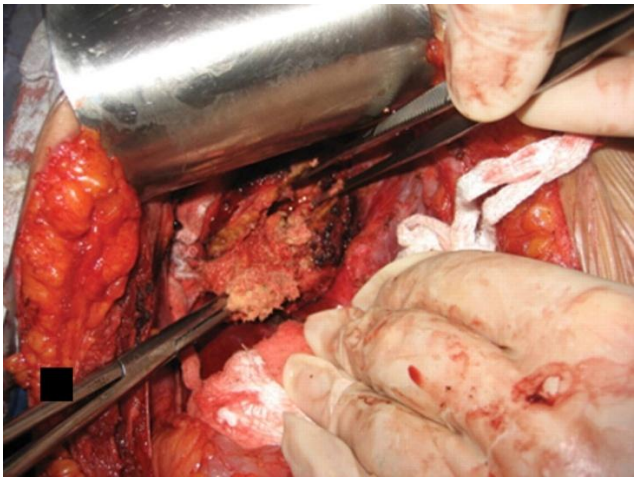

Figure 3: Intra-operative

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