

Case report

Gossypiboma, Mimicking a Mesenteric Tumour: A Case Report

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Abstract

Gossypiboma refers to a retained surgical textile in body tissue and cavity after an operation. It is an infrequent and potentially preventable post-operative complication due to medical error. The presence of retained surgical material within the body tissue can incite an aseptic but fibroblastic reaction resulting in the formation of a chronic granuloma, which may present in the form of a pseudo-tumour several months to years after the surgical procedure.

We report the case of a 42-year-old woman who presented with a painless intra-abdominal mass one year after undergoing myomectomy for symptomatic uterine fibroid in a private hospital. A presumptive diagnosis of the mesenteric tumour was made on the basis of pre- and intra-operative findings. However, the histopathological diagnosis confirmed a gossypiboma.

This case highlights the need to consider gossypiboma as a differential diagnosis in post-operative patients presenting with intra-abdominal mass. The highly variable characteristics of this condition both clinically and radiologically warrant a high index of suspicion, early recognition, and prompt surgical intervention to reduce the morbidity and mortality associated with it.

Keywords: Chronic granuloma, Intra-abdominal mass, Mesenteric mass

Introduction

Gossypiboma is a term referring to the presence of a mass of cotton material that is inadvertently retained in the body cavity following a surgical procedure (1). It is also referred to as textiloma, retained surgical item, cottonballoma, cottonoid, muslinoma, and gauzeoma. The first case was reported by Wilson in 1884(2).

They are infrequent pathology in surgical practice, probably due to under-reporting from the associated medico-legal perspective of the condition(3). The global incidence is approximately 1:1000 to 1:1500 intra-abdominal surgeries(4). It is a potentially preventable clinical condition associated with high morbidity and mortality. Despite technological advances

aimed at reducing its incidence, it remains a condition of concern in low and medium-income countries of the world due to paucity of resources. The clinical presentation of gossypiboma is variable and depends on their anatomical location and the host reaction(5). Gossypibomas may be asymptomatic, mimic intra-abdominal tumours, or present with signs of intestinal obstruction (6-9).

In this report, we present a case of a presumed mesenteric tumour, but revealed to be a gossypiboma caused by a retained sponge during a previous myomectomy at a private health facility. This case highlights the need for a high index of suspicion and histopathological support in the diagnosis of gossypiboma in patients presenting with abdominal following previous surgery. The case report was narrated with the Surgical Case Report (SCARE) 2023 guideline.

Case Description

A 42-year-old woman presented to our clinic with complaints of progressive and painless lower abdominal swelling of 6 months duration. There was no swelling in other parts of the body. She had no features of bowel obstruction. There was no history of weight loss, anorexia, or easy fatigability. She had no family history of malignancy. She had a myomectomy for a symptomatic uterine fibroid in a private facility a year before the presentation. There was no comorbidity.

A general examination showed a young woman with a body mass index [BMI] of 22kg/m² stable vital signs. Her temperature was 36.9 degrees Celsius, her respiratory rate of 16cycles/minute, her pulse rate of 78 beats /minute, and her blood pressure of 120/80 mmHg. Abdominal examination revealed an intra-abdominal mass with no differential warmth, non-tender, well-circumscribed, mobile in the transverse plane but not in the longitudinal plane [Tillaux's sign], and firm in consistency. It measured 12 cm x 10 cm.

There was no ascites. Bowel sound was normoactive and digital rectal examination was unremarkable. The blood tests were normal, with hemoglobin of 13.5g/dl. Serum electrolytes, urea, creatinine, and liver function tests were all within normal limits.

An abdominopelvic ultrasonography scan was done with findings of a well-circumscribed mixed-echogenic intra-abdominal mass measuring 11.5cm x 9.6cm x 6.0cm. Based on the clinical findings and radiological report, a preoperative diagnosis of Mesenteric tumour was made. A computerized tomography scan was not done because she had financial constraints.

The patient was prepared for and had laparotomy with intra-operative findings of a spherical 12cm x 10cm firm mass involving the mesentery of the terminal ileum (Figure 1a and 1b). There was no lymph node enlargement or ascites. The mass was resected en bloc with the ileum due to its firm adherence to the ileum and the suspicion of a malignant tumour. An ileo-ileal anastomosis was affected.



Figure 1a: Intra-op picture showing intra-abdominal mass with its adherence to the bowel

The patient had an uneventful recovery, was discharged 10 days after surgery, and has remained stable. Histopathologic examination of the resected specimen (Figure 2 a and 2b) revealed a 13 x 10 x 9 cm mass that weighed 200.0 grams. The cut section revealed a cystic

area containing towel-like material and a smooth yellow lining. Microscopy of the intestine showed eroded mucosal epithelium overlying a submucosal expanded by multiple granulomata comprising singles and rolls of likely synthetic cotton fibers surrounded by epitheloid cells including multinucleated giant forms, lymphoblast cells, and polymorphs. There was no neoplastic cell. A histopathological diagnosis of Gossypiboma was made.



Figure 1b: Resected mesenteric mass lesion

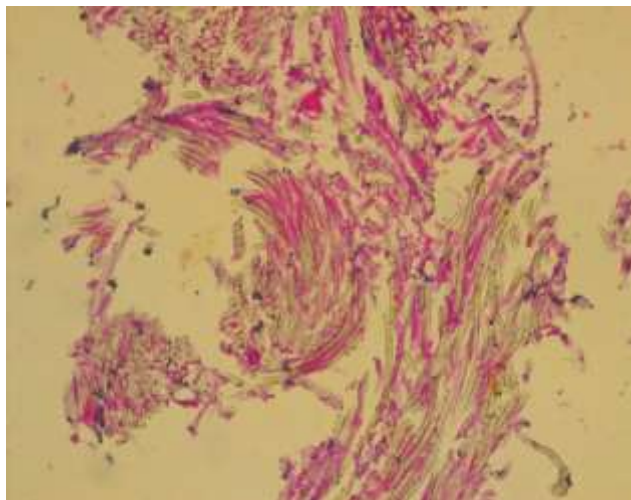


Figure 2a: Photomicrograph of the mesenteric mass showing histopathological features of gossypiboma [hematoxylin/eosin, 40X]

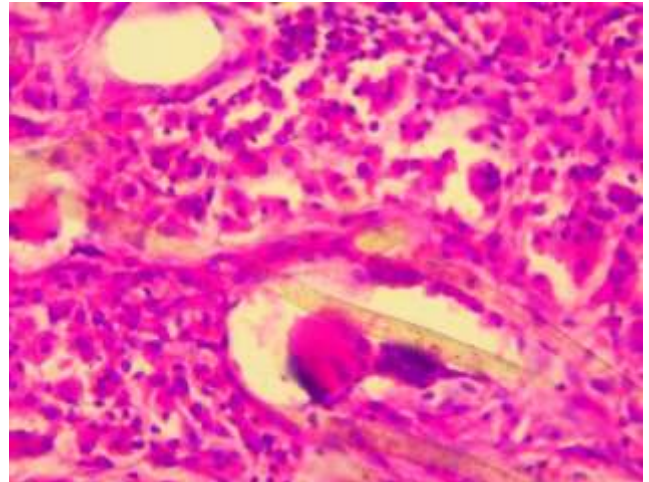


Figure 2b: Photomicrograph showing epitheloid cell granuloma with synthetic-like fibres (Hematoxylin and Eosin, X 100)

Discussion

The presence of foreign material in body tissues and cavities after a surgical procedure is attributable to human errors (4). This has huge medico-legal consequences, thus, resulting in under-reporting of cases (1, 3). The highly variable manifestation of gossypiboma, both clinically and radiologically often poses a diagnostic challenge. Gauze pieces and abdominal sponges are the most commonly retained surgical materials in body tissues and cavities due to their frequent usage at surgery and their relatively small size.

Factors linked with such human errors include emergency surgeries, prolonged surgeries, surgeries in obese patients, sudden changes in surgical team members, unexpected intra-operative occurrences, and importantly inadequate post-operative gauze count(1, 5). Additionally, inadequate staffing, inexperienced staff, and highly hemorrhagic surgeries leading to poor visibility in the operating field are also contributory factors. Gynecological and gastrointestinal procedures are most commonly implicated in this pathology. The high incidence of gossypiboma following pelvic operation is

attributable to the difficulty in visualizing the deep pelvic cavity, which facilitates the non-identification of blood-soaked gauze and abdominal sponges (5). In the highlighted case, the patient had a retained sponge after a myomectomy performed in a private hospital, though, details of the surgery could not be ascertained.

The presence of retained surgical materials in body tissues and cavities may provoke two major reactions. The first is an exudative or septic reaction. This typically manifests in the early postoperative period and is characterized by the formation of abscesses and fistulae. The second type of reaction is described as an aseptic and fibrinous reaction. This presents late after the procedure and is characterized by the development of adhesions, encapsulation, and, ultimately foreign body granuloma (pseudotumour)(5). In our patient, the retained surgical sponge formed a pseudotumor that was well encapsulated and demonstrated mobility in the transverse plane only, thus, mimicking a mesenteric tumour.

Although gossypiboma exhibits variable characteristics in imaging studies, the use of computerized tomography scans (CT-Scan) is the gold standard. On CT-Scan, gossypiboma has been classically described as a well-defined soft tissue mass with a spongiform pattern with trapped gas bubbles or whorled texture mass lesions (5-12). However, the findings are only present in a minority of cases (5). Ultrasound scan often demonstrates a well-defined mass containing a whorl-like, hyperreflective echo with a hypoechoic rim and strong posterior acoustic shadowing (13).

Other imaging modalities such as Plain radiograph and magnetic resonance imaging have also been used in the evaluation of this condition. Plain radiographs can detect sponges that are tagged with radio-opaque markers. In resource-limited countries like ours, there is no

availability of radio-opaque sponges(10). This causes difficulty in making preoperative diagnosis using a plain radiograph. If a gossypiboma is identified, the treatment usually is removal (9-15). In the case highlighted, due to the suspicion of a malignant mass and the firm adherence of the mass to the bowel, it was removed en-bloc with bowel resection.

The American College of Surgeons and the Association of Perioperative Registered Nurses have issued guidelines aimed at preventing retained surgical items(10-12). The current recommendation includes the use of standard counting procedures, performing a thorough wound exploration before closing a surgical site, and using only X-ray-detectable items in the surgical wound. These associations also firmly endorse the completion of a postoperative debriefing after every surgery. A plain radiograph after a surgical procedure is encouraged if there is a discrepancy in the gauze counts or the presence of a risk factor.

In resource-limited settings like ours, a common preventive measure is to tie the tail end of several sponges together and use them as an abdominal pack. Occasionally, the tail end of the sponges is held with an artery forceps. Given its medicolegal implications, the characteristics of the surgeon and their style, honesty, bedside manner, and confidence demonstrated in the management of the case can go a long way in averting a lawsuit or mitigating damages (15).

Conclusion

Gossypiboma is an infrequent but potentially preventable postoperative complication with wide-ranging effects on the patient, surgeon, and health facility. It should be considered in the differential diagnosis of postoperative patients presenting with intra-abdominal mass.

Consent for publication

Written Informed consent was obtained from the patient for the publication of this article.

Conflicts of interest

The authors declared that they have no competing interest.

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Authorship Contribution

Agada HO was responsible for the concept and design. Agada HO and Adokwe BL made significant contributions to the article revision and final approval.

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