SAGE Open Medical Case Reports
Volume 12: 1–4

DOI: 10.1177/2050313X241248379
journals.sagepub.com/home/sco
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Endoscopic management of a transgastric migrated gossypiboma: A case report

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Abstract

Textiloma, also known as gossypiboma, is a rare but well-documented entity. It involves the omission of surgical material during surgery. Gossypiboma remains a diagnostic dilemma to this day, due to its wide spectrum of clinical symptoms and numerous radiological pitfalls. The recommended treatment for gossypiboma is surgical removal. Endoscopic removal has been performed by some teams and has shown satisfying results. We report the case of a 33-year-old woman with a transgastric migrating gossypiboma, managed by an endoscopic extraction.

Keywords

Textiloma, gossypiboma, endoscopy, transgastric, migration

Date received: 26 December 2023; accepted: 3 April 2024

Introduction

Gossypiboma, also known as textiloma (from the Latin gossipium meaning "cotton" and the Swahili boma, which translates as "place of concealment"), is a rare but well-documented entity. It involves the omission of surgical material, usually a sponge or compress, often located in the abdominal cavity, during surgery. According to some studies, gossypiboma occurs in 1 in 1000 operations.[1,2]

Omitting surgical material can have serious medical consequences, such as infection or abscess formation.

Migration from the peritoneal cavity to the inside of the stomach is rarely described in the literature.[3] Endoscopic management of these cases is even more unusual and poorly described: the gold standard being surgery.

We report here on the case of a 33-year-old woman with abdominal gossypiboma migrating through a gastric wall and successfully removed by endoscopic extraction.

Case report

A 33-year-old Guinean female patient, with a history of surgery for a benign tumor of the tail of the pancreas, was admitted to our department for a moderate epigastric pain associated with nausea. The symptoms appeared 2 years after her surgery. There was no vomiting or weight loss.

Clinical examination revealed a patient in good condition with a median laparotomy scar and an epigastric tenderness.

Biological tests on admission were normal, apart from an elevated C-reactive protein (CRP) of 25 mg/l.

Abdominal computed tomography (CT) (Figure 1), showed an intragastric ovoid well-defined heterogeneous mass containing air bubbles that were not enhanced after contrast injection.

Gastroscopy (Figure 2) showed a filamentous whitish foreign body similar to a "compress"-type gossypiboma, with inflammatory surrounding mucosa in the greater curvature.

The gossypiboma was an advanced deterioration process. We decided to extract the gossypiboma endoscopically (Figure 3), to avoid another surgery.

The endoscopic extraction was successfully achieved; we removed most of the gossypiboma, in several fragments, using foreign body forceps.

A large crater in the greater curvature was found after the extraction, containing a residue of gauze compress filaments, not communicating with the rest of the abdominal cavity (Figure 4).

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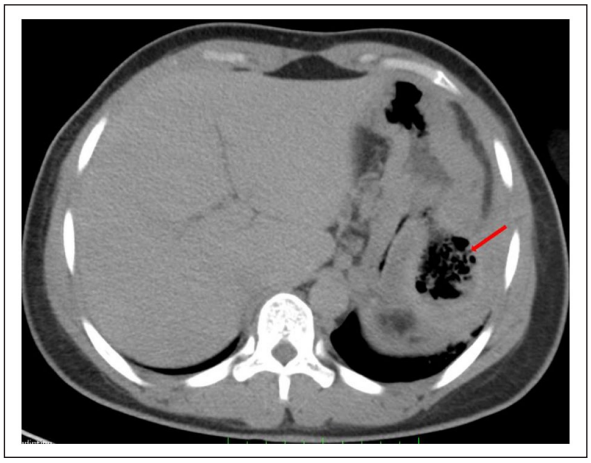

Figure 1. Computed tomography axial section image shows an intraluminal gastric formation; well-limited oval, heterogeneously dense, and containing air bubbles, not enhanced after contrast injection.

The patient reported relief from the previous symptoms (abdominal pain and nausea). We also observed a normalization of the CRP. The rest of the follow-up was carried out in the patient's country of origin.

Discussion

Abdominal gossypiboma is a postoperative iatrogenic complication resulting from the omission of textile fibers in the abdominal cavity during surgery.[3,4]

The first case of retained surgical material was described by Wilson in 1884.[5]

The abdomen is the most frequent site (56%), followed by the pelvis (18%) and thorax (11%).[6] The incidence rate varies from 1 in 1000 to 1 in 1500 intra-abdominal operations, and from 1 in 300 to 1 in 1000 of all operations.[7]

The use of radio-opaque gauze compress as early as 1940 in the United States has contributed significantly to limiting this type of incident.[8] Some authors even suggest systematic radiographic screening of high-risk patients before they leave the operating room, even if the count is correct, although this method remains open to debate.[9,10]

If misdiagnosed, gossypiboma can have serious consequences for the patient and surgeon in terms of morbidity, mortality, and legal consequences. Reported gossypibomas represent only the tip of the iceberg since most of the cases remain hidden due to medico-legal considerations.[11]

Gossypibomas are mainly described by imaging. Ultrasound, CT, and magnetic resonance imaging (MRI) are very useful for establishing a correct diagnosis in most cases, particularly in the context of previous surgery.[12]

Ultrasound is fairly reliable, showing multiple extra-digestive or intra-digestive air bubbles. These bubbles correspond to air embedded in the mesh of the gauze compress.[13]

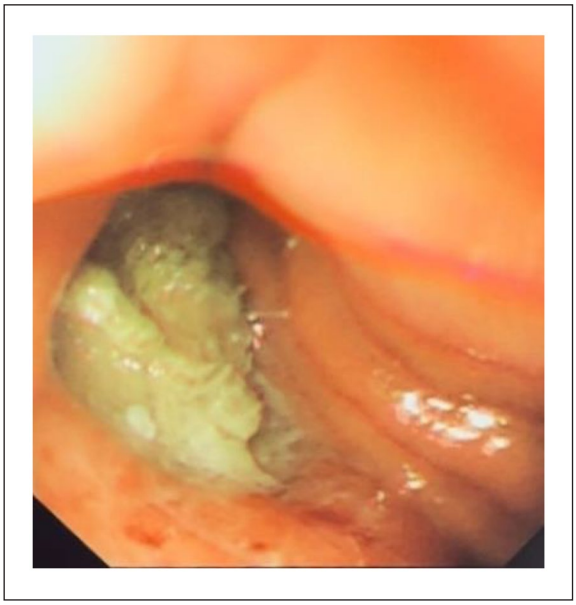

Figure 2. Gastroscopy shows a gauze compress gossypiboma, associated with underlying inflammatory mucosa.

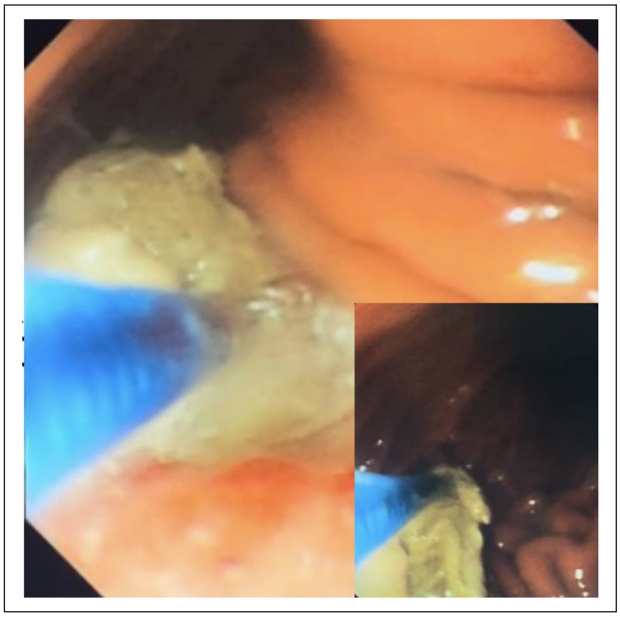

Figure 3. Per procedural image shows the endoscopic extraction of gossypiboma using foreign body forceps.

Abdominal CT scan provides detailed information on the lesion in most cases.

In our case, a CT scan revealed the existence of an intraluminal gastric formation leading to our diagnosis. Gossypibomas may also appear like a cystic lesion with spongiform contents, concentric layers, or mural calcifications.[3,14] When CT scan results are not conclusive, MRI is the next step.

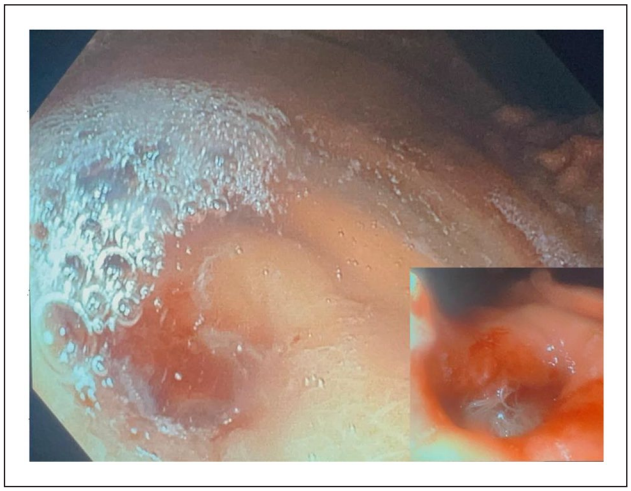

Figure 4. Post-procedural image shows a large crater in the greater curvature, containing a residue of gauze compress filaments.

On MRI, signal intensity varies according to the histology of the mass, its staging, and the presence of fluid. Gossypibomas usually present as a well-defined, encapsulated mass with low T1 and T2 signal intensity.[15]

In our case, we deduced from the clinical, radiological, and endoscopic data that a compress was left behind by the surgeons 2 years ago during the management of her pancreatic tumor. Through various mechanisms, this compress migrated into the stomach. This phenomenon is explained in the literature: gossypiboma can cause two types of reaction: either an acute, exudative reaction, leading to inflammation with abscess and fistula formation,[16] or a chronic reaction with adhesion or granuloma formation.[11] This may manifest clinically as a pseudotumor or peritonitis[17] and may allow the foreign body to migrate. In our case, intra-gastric migration of the foreign body led to the development of various symptoms, like epigastric pain and nausea.

In the literature, we find similar symptoms in patients with a migrating gossypiboma, along with other symptoms such as a palpable mass, vomiting, rectal bleeding, diarrhea, and systemic symptoms such as fever and weight loss.[18]

The phenomenon of foreign body migration is rare,[18–20] especially in the stomach. The foreign body migrates either outwards via an enterocutaneous fistula or inwards, as in our patient's case, into a hollow organ such as the stomach,[14] the entire intestinal tract[18] or the urinary tract,[21] and rectum.[11]

Endoscopy enabled us to make the diagnosis in this patient by visualizing the gauze compress. The diagnosis may be difficult to establish endoscopically, as the foreign body may simulate several entities: a hematoma, a bezoar, an abscess, a granulomatous process, or even a cystic mass or neoplasm.[7]

The recommended treatment for gossypibomas is surgical removal, although endoscopic removal has been performed by some teams and reported in the literature.[3,14,22]

The most used tool for endoscopic removal is endoscopic forceps with sometimes the need for a saw-tooth forceps.[3,14]

The first case of endoscopic removal was reported by Sozutek et al.,[14] where a 20 cm × 20 cm surgical sponge was endoscopically removed.

These procedures can be highly effective in some cases,[23] and unsuccessful in others due to the various fistulas that may exist.[14]

In our case, the gossypiboma was successfully extracted, using the foreign body forceps, and removing it in several fragments.

The choice of endoscopy over surgery was motivated by her young age and the recent surgery. Removal of almost all of the encapsulated gauze was successful, resulting in a complete disappearance of the patient's symptoms a few days after the procedure, and normalization of her CRP. The patient follow-up was performed in her country of origin returning in favor of a good health condition. Unfortunately, we were unable to have the control CT scan.

Conclusion

Gossypiboma remains a diagnostic dilemma to this day, due to its wide spectrum of clinical symptoms and numerous radiological pitfalls. Foreign-body migration is a well-documented phenomenon, but cases of trans-gastric migration remain rare. In certain cases, endoscopic extraction can be effective in the removal of the gossypiboma, avoiding further surgical reintervention and hospital stay.

Acknowledgements

Not applicable.

Author contributions

A.A. contributed to Conceptualization, Methodology, Investigation, Writing—Original Draft; N.F. contributed to Validation, Writing-Review & Editing, Supervision; J.M. contributed to Investigation, Resources, Writing—Original Draft; T.O. contributed to Visualization, Investigation; B. S. contributed to Validation, Writing—Review & Editing, Supervision; A.T. contributed to Validation, Writing—Review & Editing, Supervision; M.T. contributed to Validation, Writing—Review & Editing, Supervision.

Declaration of conflicting interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

Ethics approval

Our institution does not require ethical approval for reporting individual cases or case series.

Informed consent

Written informed consent was obtained from the patient(s) for their anonymized information to be published in this article.

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