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Exploratory Laparotomy for Encapsulated Gossypiboma: A Rare Case

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Abstract— *Gossypiboma, term derived from the latin 'gossypium' (cotton) and the swahilli 'boma' (place of concealment) is the term form retained surgical sponge. Two usual responses to retained mops are exudative inflammatory reaction to develop a mass. Intraluminal migration is rare, leading to obstruction. Patient may develop symptoms of abdominal pain, nausea, vomiting and weight loss resulting from obstruction or a malabsorption syndrome caused by multiple intestinal fistulas or intraluminal bacterial overgrowth. Early recognition of this entity will ensure prompt diagnosis and appropriate treatment, reducing morbidity and mortality in such patients.*

Keywords— Abdominal pain, cyst, gossypiboma, laparotomy.

I. INTRODUCTION

The term gossypiboma refers to textile matrix surgical items inadvertently left inside cavities after surgical wound closure. The word derives from the Latin *Gossypium* , meaning cotton, and the Swahili *Boma* , meaning hiding place. The first case was described by Wilson in 1884. [1]

The relatively small size, universal use in operations and difficult identification when soaked in blood are factors that corroborate the fact that surgical sponges are the most common foreign body found in surgical approaches due to the identification of uncharacteristic material. [2] It is estimated that the occurrence of gossypiboma is 1 for every 5,500 to 18,760 surgeries; reaching 1 in 1,000 to 5,000 in those performed in the abdominal cavity and 1:700 in emergency trauma surgeries. [3]

Gossypibomas are most commonly found in the abdomen (56%), pelvis (18%) and chest (14%). The main risk factors involved are: emergency surgery and damage control, unexpected changes in the course of surgery, obesity, high number of instruments on the table, more than one surgical team in the procedure and absence of the surgeon in charge until the closure of the cavity procedure. [2,3,4]

We present a case of acute abdomen due to encapsulated gossypiboma , with identification of this foreign body in imaging exams.

II. CASE REPORT

DJR, 52 years old, male, with a history of having undergone conventional cholecystectomy 4 years ago, evolved with abdominal pain, predominantly in the epigastrium and right hypochondrium for two days, with nausea and isolated episodes of vomiting. At the time, an ultrasound of the entire abdomen was performed, which revealed a large infrahepatic collection with heterogeneous content inside. To complement the workup, a computed tomography (CT) scan of the entire abdomen was performed, which concluded the presence of a heterogeneous rounded image with a metallic marker compatible with a foreign body, averaging 127 mm x 129 mm x 124 mm in its largest diameters, in the interior of a cystic lesion with thickened walls measuring approximately 1056 ml in volume. In addition, gallbladder not defined in its usual location and absence of intra- and extra-hepatic bile duct dilation. No other changes to the method. He underwent exploratory laparotomy in which a large infrahepatic cyst was found. The cyst was opened, with drainage of a large amount of turbid secretion and the removal of a foreign body of a textile nature, identified as a surgical compress. The peritoneal cavity was cleaned with saline solution and tubulolaminar drains were positioned in the right parietocolic gutter , infrahepatic space and pelvis. The analysis of the collected liquid proved to be sterile, with no growth of microorganisms in the culture.

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During hospitalization, the patient evolved satisfactorily and was discharged on the fifth postoperative day. He remained under outpatient follow-up for 60 days, and was discharged due to good evolution.

III. DISCUSSION

There are two main forms of clinical presentation in cases of gossypiboma . The exudative pattern occurs in the immediate postoperative period, due to an inflammatory process characterized by the proliferation of microorganisms in the textile interstitium, leading to the formation of abscesses, fistulas to the skin, vagina or intestines, and sepsis. Early symptoms such as fever, pain, intestinal obstruction, bleeding or surgical wound infection are common, resulting in early re -approach to cases. [1,5] The fibrinous pattern corresponds to 25% of cases and occurs in the late postoperative period (months or years after the procedure). Encapsulation of the foreign body occurs, with the formation of pseudotumors. Late symptoms, such as chronic abdominal pain, nausea, dyspepsia, constipation and weight loss are the most reported in the literature. [1,5,6]

The investigation of suspected cases of foreign body is done through image exams. Despite its low accuracy, radiography is the most frequently performed exam, as it allows identifying elements with metallic markers with some ease. [1] The occurrence of false-negatives is justified by the use of low-quality films and superimposition of structures with similar densities. Tomography is the exam of choice, in which gossypibomas appear as a mass with a well-defined contour, variable density, which may contain gas inside and even a high-density capsule with enhancement in the post-contrast phase. [1,2,6,7] Ultrasonography is a useful test capable of identifying the textile material as a cystic mass, solid or mixed, well delimited, with a posterior acoustic shadow. It may present false-positive results in cases with scarring and calcifications of other etiologies. However, it is a limited resource because it is operator dependent, unable to identify deeper foreign bodies or between hollow viscera containing gas. [2,7] In the present case, the diagnosis was established by viewing an uncharacteristic image of metallic density, occupying more than one position in the abdominal cavity and previous history of two previous surgical approaches associated with symptoms such as abdominal pain and signs of intestinal obstruction.

The literature describes some prevention strategies, such as the use of compresses with metallic markers computed before, during and after the surgical procedure, avoiding the use of gauze in laparotomies, reviewing the cavity before closure and exploring it in case of discrepancy in the counting. However, a study shows that 88% of cases of foreign bodies occur during surgeries described with correct count of compresses. If in doubt, X-ray screening should be performed before the patient leaves the operating room. [1,2,3]

IV. FIGURES AND TABLES

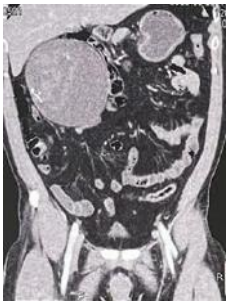

Fig 1. Coronal CT scan showing a large infrahepatic cyst with heterogeneous material and metallic marker

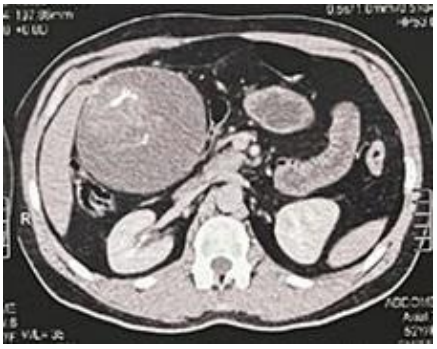

Fig 2. Axial CT scan showing the relationship between the large cyst and the liver, right colon and retroperitoneum

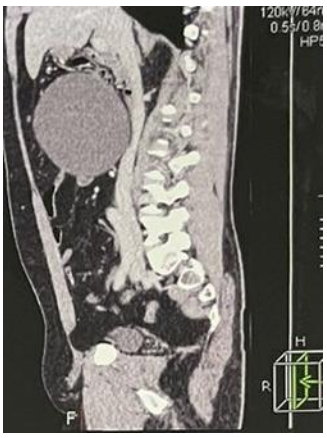

Fig 3. CT with sagittal section showing the relationship of the cyst with the inferior vena cava

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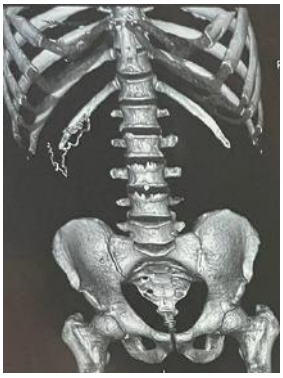

Fig 4. CT with metallic marker in the upper right quadrant

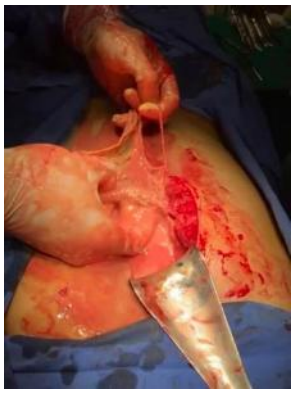

Fig 5. Beginning of intra-abdominal foreign body extraction

Fig 6. Complete extraction of the foreign body

V. CONCLUSION

Gossypiboma is a medical error and its early recognition is extremely important, as it reduces associated morbidity and mortality, in addition to preventing medicolegal lawsuits. The best form of prevention is the continuous training of the entire team that assists the patient, with the objective of knowing the surgical times and standardizing the methods of counting metallic instruments and materials used in surgical procedures, among the latter, compresses.

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