

THE DIFFERENTIAL DIAGNOSIS OF A GOSSYPIBOMA: A CASE REPORT

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Abstract

Gossypiboma – retained foreign object (more frequently a surgical sponge) – is a rare complication of a surgical intervention, usually during an emergency or a time-consuming procedure. The clinical features include nonspecific general and digestive symptoms. Due to the surrounding inflammatory reaction, it leads to the formation of tumoral masses or fistulas, making the differential diagnosis even more difficult. We present the case of a 60-year-old woman with a history of diabetes, arterial hypertension and multiple surgical procedures of the upper abdomen, who was admitted for altered general state and a pain in the right upper and lower quadrant, where an abdominal mass that covered the skin and the right costal margin was found, mild fever and anemia. The MRI raises the suspicion of a sarcoma. The first surgical procedure (June 2014) uncovers a pus-filled collection which was drained resulting a fistula with a continuous secretion (the Pathology report suggested Actinomycosis). The patient received multiple antibiotics, without an improvement. In January 2015, a CT exam revealed a possible retained foreign object situated deeply in the hepatorenal recess. The patient had undergone surgery, through the peritoneal cavity, thus confirming the diagnosis, with the excision of the surgical sponge. The patient had a favorable postoperative course with the closure of the fistula. Even though the diagnosis of a retained foreign object may prove difficult, it needs to be taken into consideration for the differential diagnosis of any postoperative case presenting an abdominal mass, with inflammatory reaction and chronic post-excisional fistula.

Keywords: *Gossypiboma, fistula, hepatorenal recess*

Introduction

Gossypiboma, or the retention of a foreign body, followed by an exudative reaction, is a rare complication of surgery, particularly the abdominal one. Gossypibom is a term derived from two other words: Gossypium, which is the Latin word for cotton and boma, Swahili term

meaning "place of concealment". The first case was reported by Wilson in 1884 and in 1978 was renamed gossypibom. Since then, the number of published cases have risen, but their incidence remains unknown because forensic implications. Currently it is believed that this complication has a frequency between 1/100 - 1/5000 of surgeries. Gossypiboma is diagnosed

more often in the abdomen, but was reported in other sites: inside the pleural cavity, limbs, mammary gland or central nervous system. Approximately 50% of cases are diagnosed after at least 4 years after surgery.

Materials and methods

In many cases, the retained foreign body is asymptomatic [1]. Clinical manifestations of the gossypiboma depend on the type of reaction from the body. Early postoperative reactions are of exudative type and can lead to the formation of a fluid collection that can become infected and can be mistaken for a hematoma or other infections. Delayed reactions are of fibrocellular type, aseptic, and are due to the long term tolerance of the foreign body and the insulation from the anatomical structures by encapsulating in a collagen matrix. This reaction is slow, it may take several years, and the only manifestation may be the palpation of a tumor mass. Most times, gossypiboma remain undiagnosed for years until it creates a leak. The longer the period the foreign body remains in the body, the greater the risk of fistulisation.

Clinical signs include general and gastrointestinal symptoms (abdominal pain, nausea, vomiting, anorexia, weight loss, fever or low grade fever)

The preoperative diagnosis of a gossypiboma is made in approximately one third of cases. Imaging procedures such as radiography, ultrasonography, computed tomography, MRI, barium enema or endoscopy may be useful for this purpose [2].

Although radiological investigations are quite sensitive in detecting retained foreign bodies, they may be limited by the use of sponges without a radiopaque marker. This is because the fabric can simulate bruising, granulomatous processes, abscesses, cystic masses, or even a neoplasm[3].

Regarding the differential diagnosis, it is complicated on one hand by the clinical picture with uncharacteristic presentation, a long period of time between the initial operation and the appearance of symptoms and on the other hand, the lack of specificity of the results provided by imaging investigations. Among the entities that are usually taken into account there can be

mentioned: tumors, abscesses, hematomas or infected hydatid cyst.

We present the case of a female patient, aged 60, with known type II diabetes controlled by diet, arterial hypertension, recurrent UTI, renal stones. Her surgical history includes: cholecystectomy (1997), subtotal hysterectomy with bilateral oophorectomy for uterine leiomyoma (2007) and ventral hernia repair using prosthesis (2011). Family history is insignificant.

The patient is admitted in May 2014 in the department of internal medicine for malaise, pain in the right quadrant of the abdomen, low grade fever and mild anemia. She received treatment for urinary tract infection with Amoxicillin and Clavulanic Acid and NSAID for seven days. On 10th of June 2014, she returns to the hospital complaining of persistent symptoms and is hospitalized in our clinic.

The physical exam showed the presence of a fixed, painful, rapid growing tumor, in the right thoraco-lumbar region, of about 10 cm in diameter, with modified overlying skin. Laboratory tests show an inflammatory syndrome, CRP = 26.8 mg / dL and hypochromic anemia.

MRI is performed, identifying a multilobulated tumor mass, with maximum dimensions of 10/7/9 cm, invading the right thoraco-abdominal wall, deep down to the right posterolateral adjacent kidney fat, which exert a mass effect on the 6th segment of the liver and keeps a clear limit with the ascending colon. Following information provided by MRI, the suspicion of sarcoma is raised .

The surgical intervention is performed under general anesthesia with tracheal intubation and it is practiced a right lumbar incision centered on the tumor. Subcutaneous fat is dissected and a piece of tissue about 4/6 cm is excised for pathological examination. During dissection, it begins to evacuate white, creamy, odorless pus leaving whitish deposits between muscle fibers. There were taken bacterial probes for cultures and the abscess was drain. Lavage was performed with hydrogen peroxide and the wound was left open, packed with iodine gauze. Due to intraoperative aspect and the pathology report, the suspicion of actinomycosis is raised.

The postoperative course was slowly favorable but the patient developed a chronic

cutaneous fistula that required lavage and daily dressing. The secretions from the wound showed the absence of usual bacterial flora and yeasts. The patient is discharged on June 25, 2014.

In September 2014, the patient returns to the clinic for profound suppuration of postoperative wound in the right lumbar region.

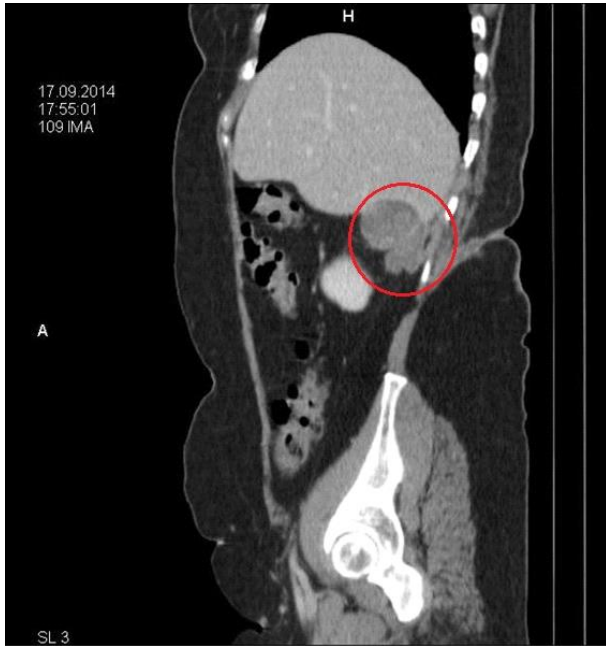


Figure 1 - Low density heterogenous mass situated in the Morisson space

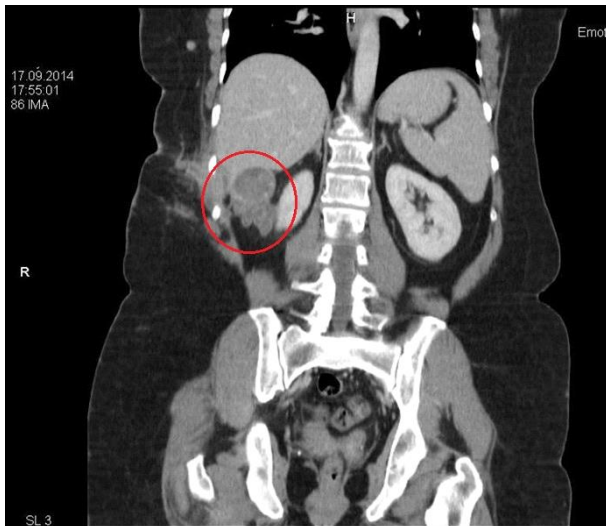


Figure 2 - Low density heterogenous mass situated in the Morisson space

Clinical examination reveals a fistulous orifice in the wound and two others in the vicinity, where it discharges a small amount of purulent fluid. Laboratory findings showed hypochromic anemia. CT is performed, showing a retroperitoneal abscess, located between the

liver and the right kidney communicating with the skin through a fistulous tract (Figures 1,2,3,4). Another operation was performed, using the same lumbar approach, with incision and drainage of abscess and bacterial cultures. Lavage was performed, leaving two drainage tubes into the remaining cavity.

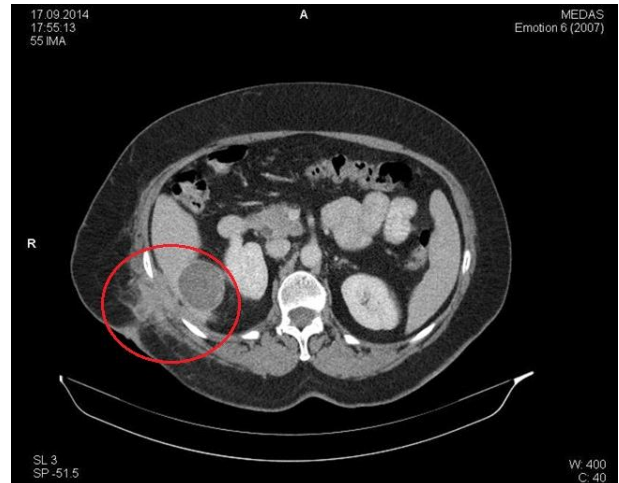


Figure 3 - Low density heterogenous mass situated in the Morisson space with a cutaneous fistula localized in the toraco-lombar region

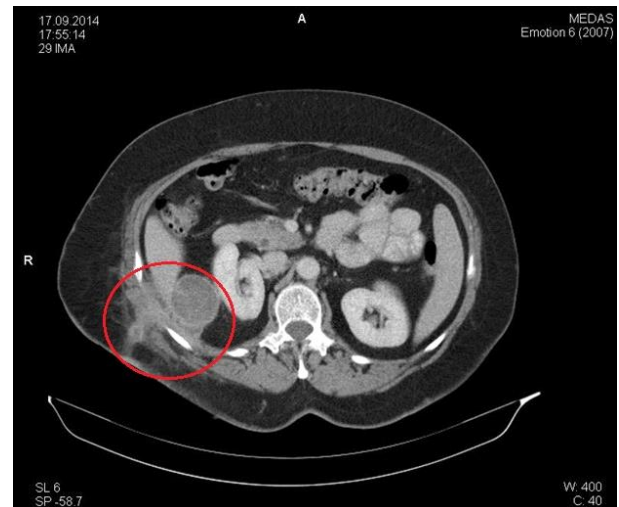


Figure 4 - Low density heterogenous mass situated in the Morisson space with a cutaneous fistula localized in the toraco-lombar region

The postoperative course is favorable, with repeated lavage using the drains. During hospitalization, the quantities of the secretions were decreasing, leading to the tube extraction until the end of September. Bacterial cultures were positive for *Pseudomonas aeruginosa*, and the urine culture was positive with *Klebsiella pneumoniae*, and the patient received levofloxacin on a daily base. She is discharged

on 3rd of November 2014 with the wound almost closed and minimal secretion.

Using special bacterial cultures, in the "Victor Babes" Institute, the actinomycosis is infirmed. During that period, a positive culture for *Pseudomonas Aeruginosa* required targeted antibiotic therapy.

In January 2015, the patient is again admitted in hospital for prolonged infection of the postoperative wound. Laboratory findings were unspecific and a new CT is performed (Figure 5). Due to the fact that no collection was present, and the inflammatory reaction was minimal, the radiologist raised the suspicion of a gossypiboma.

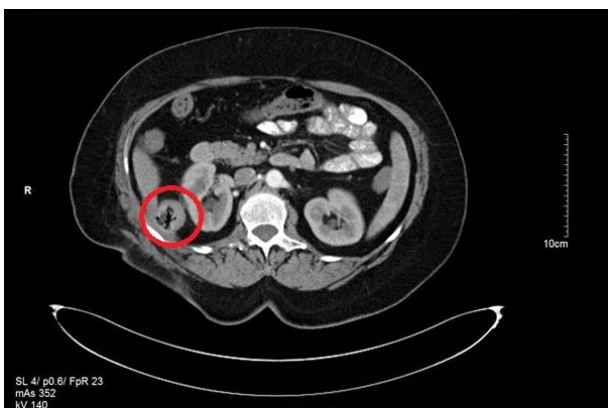


Figure 5 - CT aspect of a Gossypiboma

An abdominal Kocher approach was chosen this time, and a solid tumor mass was palpated between the liver and the right kidney. After dissection, it is extracted a gossypiboma (a retained surgical sponge) (Figure 6). The fistulous tracts were scoop and drains were left in place.

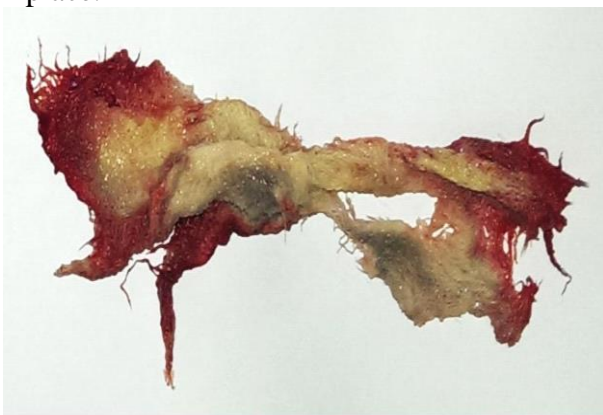


Figure 6 -The retained sponge

Postoperative course was uneventful, with discharge in the 6th day after surgery.

Discussions

The positive diagnosis of gossypiboma is hard to establish because of the unspecific clinical presentation and the time elapsed from the patient surgical interventions. This was the case of our patient, presenting to the hospital with various complains. The palpable mass, inflammatory syndrome on laboratory tests and the imaging examinations led to the diagnosis of a chronic granulomatous infection (tuberculosis, actinomycosis) or a conjunctive tissue proliferation. These suspicions were disproved by the bacterial cultures and pathology examinations. When having a patient with multiple surgical interventions in the abdomen (cholecystectomy, hysterectomy, ventral hernia repair – in our case) and presenting with an palpable inflammatory tumor mass, developing a chronic fistula, one should take into consideration also the diagnosis of gossypiboma.

A foreign body remaining in the abdominal cavity can give an exudative reaction immediately after surgery, but may evolve as a fibrous reaction over several years without significant clinical manifestations. Thus, in establishing the positive diagnosis of a gossypiboma, imaging has an important role, the CT characteristic findings being a heterogeneous hypodense mass, surrounded by a hyperdense wall, with spongiform content comprising air bubbles [4]. In the case presented, the gossypiboma was suspected based on the tomography, and the diagnosis was confirmed intraoperatively. Because of its location and the intraoperative aspects, we can guess that, most likely after the cholecystectomy suffered in 1997, the retained sponge have led to the occurrence of a fibrous reaction with inflammation in retroperitoneum and subsequent development of a retroperitoneal abscess.

Conclusions

Gossypiboma is a rare complication of surgery, especially in case of emergency or prolonged interventions, which can be prevented by inventory of all sponges and surgical instruments used, immediately before completion of the operation. Clinical

manifestations are vague and nonspecific and can often cause confusion. Postoperative residual foreign body diagnosis can be difficult, but should be considered in the differential diagnosis of an abdominal tumor with inflammatory characteristics, which causes a chronic fistula after excision, in a patient with a complex surgical history.

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