

# Gossypiboma mimicking hepatic hydatid cyst after 22 years: a case report

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## ABSTRACT

Gossypiboma is a non-absorbable material that is forgotten during surgery. These are medicolegal pathology that leads to diagnostic confusion from abscess to tumor. We present the case of gossypiboma detected in laparotomy in a 57-year-old male patient who had a history of operation due to a hydatid cyst 22 years ago and was referred to our center due to hydatid recurrence. The case should suggest a history of surgical gossypiboma, especially in asymptomatic patients. In this preventable pathology, the strategy during surgery and the careful and proper attitude of the surgical team are the main determinants.

**Keywords:** Foreign body; gossypiboma; hydatid cyst.

## INTRODUCTION

“Gossypiboma, a term derived from the amalgamation of “gossypium,” signifying cotton, and “boma,” denoting a concealed or hiding place, represents a significant clinical phenomenon.<sup>[1]</sup> The predominant etiological factor underlying gossypiboma is the inadvertent retention of tampons post-surgery, characterized by their non-absorbent nature and cotton composition. This occurrence, fraught with medicolegal implications, may precipitate severe morbidities. Clinical manifestations can range from an asymptomatic course to the development of complications such as abscess formation, perforation, fistula, obstruction, and peritonitis. Furthermore, gossypiboma can present radiographically as a pseudotumoral entity.”<sup>[2]</sup> While gossypiboma frequently manifests following intra-abdominal surgeries, it may also ensue subsequent to thoracic, cardiovascular, orthopedic, and neurosurgical procedures. Notably, emergency surgical interventions and unforeseen circumstances during the operation represent the foremost risk factors, with body mass index assuming a significant role in this regard.<sup>[3]</sup> Direct radiography, ultrasonography, computed tomography, and magnetic resonance imaging also serve as viable modalities for diagnosis.<sup>[4]</sup> Nonetheless, paramount

among these is the exercise of clinical suspicion. In terms of treatment, surgical intervention is the recommended course of action. Nevertheless, prevention supersedes intervention in significance. To this end, it is imperative that comprehensive adherence to all established safe surgical protocols should be rigorously observed.

## CASE REPORT

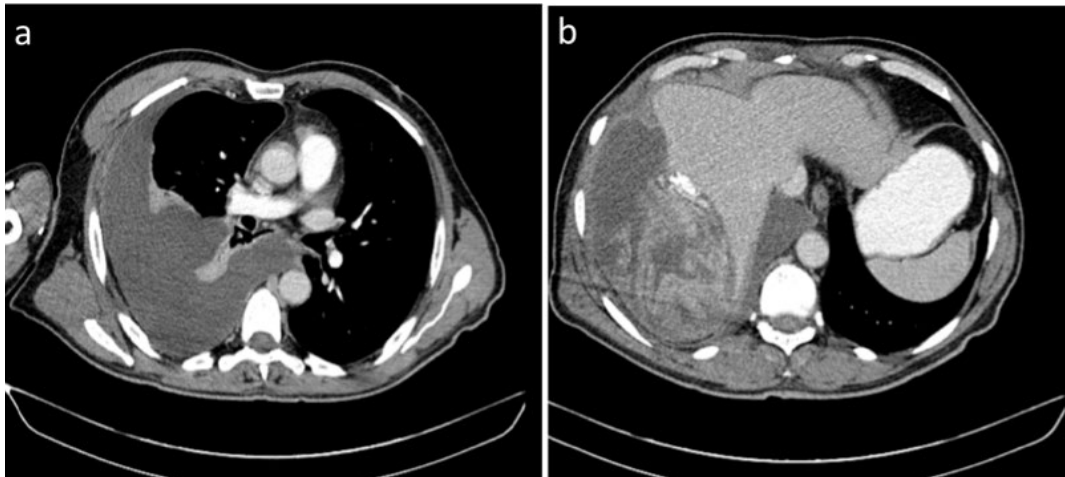
A 57-year-old male patient sought medical attention with complaints of progressive dyspnea and abdominal discomfort. Notably, he had undergone a partial cystectomy for a hepatic hydatid cyst approximately 22 years ago. Upon the aggravation of the patient’s complaint of escalating dyspnea over the past year, assessments conducted at a medical facility he attended 3 months ago revealed radiological findings consistent with a lamellar appearance of a hydatid cyst. This cyst measured approximately 13×10×17 cm, extending from the right posterior liver lobe into the thoracic cavity, resulting in a 15 cm volume loss on the right side (Fig. 1). Consequently, the patient was referred to our center. During physical examination, diminished breath sounds were noted in the basal right hemithorax. A right paramedian incision scar was evident

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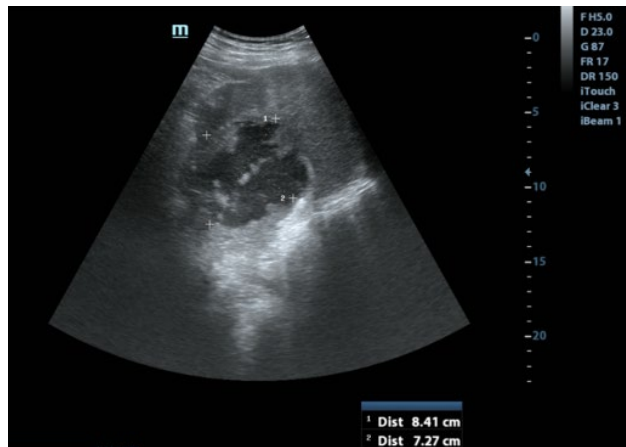
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**Figure 1.** Thoracoabdominal CT taken in the other center (a) Massive pleural effusion in the right lung, (b) Calcific lesion in the right lobe of the liver.

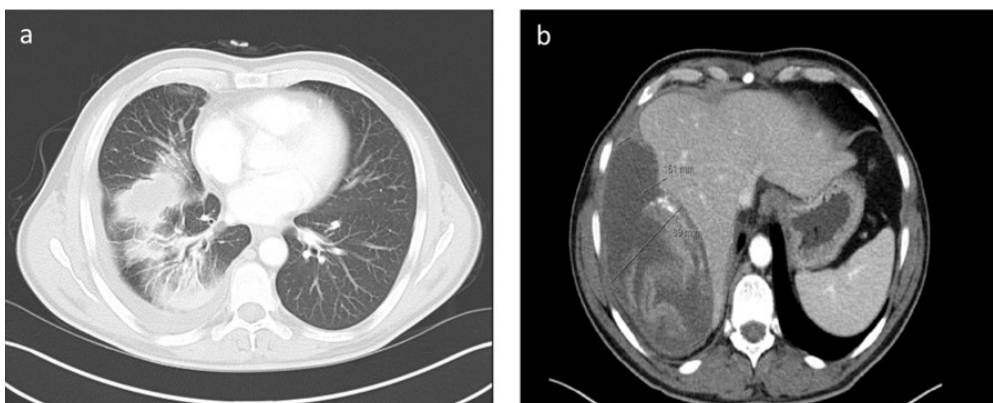


**Figure 2.** Ultrasonographically solid and cystic components lesion.

in the abdominal region. No signs of tenderness, guarding, or rebound tenderness were noted. There were five rectal touches.

In the laboratory analysis, the patient exhibited a negative result for echinococcal IHA at a titer of 1/80. Notably, there was an absence of leukocytosis, and the levels of cholestasis

enzymes were within normal range. A chest radiograph indicated a minor pleural effusion with elevation of the right diaphragm and right lung. Furthermore, an abdominal ultrasound conducted at our facility identified a lesion consistent with a Type 3–4 hydatid cyst. This cyst exhibited both solid and cystic components, with discernible thick septations, measuring 8.5 × 7 cm, located at the level of liver segment 5–6 (Fig. 2). The thoracoabdominal CT scan disclosed calcific alterations in the surrounding tissue, along with a hydatid cyst classified as Type 2–3 according to the Gharbi classification. This cyst exhibited a slight wall calcification, spanning approximately 16 × 9 cm, encompassing the entirety of the right hepatic lobe, with extraparenchymal extensions containing membranous structures. The scan also revealed an elevated appearance, as well as minimal pleural effusion, atelectasis, and consolidation observed in the basal segment of the lower lobe of the right lung. These findings were interpreted as indicative of potential cyst extension from the right diaphragm into the thoracic cavity (Fig. 3). The patient underwent surgery with the diagnosis of a recurrent hydatid cyst. The abdominal entry was achieved through a right subcostal incision. Upon exploration, extensive adhesions within the abdomen were meticu-



**Figure 3.** Thoracoabdominal CT performed in our center. (a) Minimal pleural effusion in the right lung, atelectasis, and increased opacity in the adjacent parenchyma, (b) Type 3 hydatid cyst image in the right lobe of the liver.



**Figure 4.** Abdominal gas extracted during laparotomy.

lously dissected, and the surrounding area was safeguarded with serum-soaked abdominal dressings. A cystic formation was identified adjacent to the right lobe of the liver, extending toward the subdiaphragmatic region along the midline. This lesion was fused with both the diaphragm and the abdominal sidewall. Notably, it exhibited adhesion to the hepatic flexure of the colon at its lower aspect. As the adhesions were gradually separated, the cyst wall was carefully incised from its diaphragmatic aspect. The contaminated fluid was aspirated from the interior, and no evidence of bile contamination was observed. The site was thoroughly irrigated with copious amounts of saline solution, and efforts were made to extract tissue fragments suggestive of germinative membrane from the capsule. In the interim, this tissue exhibited abdominal gas coverage along with fibrin exudate (Fig. 4). The abdominal gas was subsequently aspirated and sent for pathological examination. The unrestrained cyst wall was excised and irrigated extensively with saline. A JP drain was then positioned in the subdiaphragmatic region to monitor the residual cavity. Following this, the abdomen was closed in the anatomical plane. The patient had no problems in the post-operative period and was discharged on the 6th post-operative day.

## DISCUSSION

The incidence of gossypiboma remains frequently undisclosed, primarily attributed to medicolegal complexities. Nonetheless, it is frequently documented in the medical literature through individual case reports and case series. Primarily preventable, strict adherence to patient safety protocols, including meticulous gas counting during surgical procedures, is imperative. It is crucial to bear in mind, however, that gossypiboma can pose a diagnostic challenge, often resembling other pathologies. Thus, in patients with a surgical history presenting with a mass, consideration of gossypiboma within the differential diagnosis is imperative.

While gossypibomas tend to manifest symptoms in the initial stages, individuals may remain asymptomatic for extended durations. Early on, abscess formation, stemming from an exudative tissue response, may give rise to symptoms such as fever and abdominal pain. Conversely, an aseptic fibrotic tissue response, encapsulating the gossypiboma through a re-

action with fibroblasts, can maintain an asymptomatic state within the body for years. This can lead to patients seeking treatment under alternative diagnoses, such as tumors or hydatid cysts.<sup>[5]</sup>

The hallmark radiological feature of gossypiboma, as observed in computed tomography, is the presence of curved hypo- and hyperdense regions within a mesh-like structure created by trapped air bubbles, or within a flat, confined, thick-walled mass ensnared amidst gauze fibers.<sup>[5]</sup> However, it is worth noting that, akin to findings in hydatid cyst cases in the literature, gossypiboma may also present as a cystic mass exhibiting either thin or thick capsular septations that demonstrate contrast on CT scans.<sup>[6]</sup>

In our particular case, the CT findings indicated a Type 3 hydatid cyst characterized by both cystic and solid components with discernible thick septations. The noteworthy observation of a two-decade interval since the initial operation underscored a distinct presentation from the more common early-stage abscess formation. Recurrence represents a significant concern in the long-term outcomes of cystic hydatid surgeries. While recurrences, occurring at an approximate rate of 10%, predominantly manifest within the initial 3-year post-surgery, they may also surface many years later.<sup>[7]</sup> Given the patient's prior history of hydatid cyst surgery and the radiological evidence supporting a recurrence, a hepatic hydatid cyst was initially considered. The extensive temporal gap since the initial surgery did not immediately suggest the possibility of a gossypiboma diagnosis.

Beyond its medical implications, gossypiboma poses significant medicolegal challenges and can result in substantial morbidity and mortality. Notably, the implementation of radiopaque marked sponges or abdominal dressings, coupled with scrupulous adherence to patient safety protocols by the surgical team, assumes paramount importance in averting potential ramifications associated with this issue. Rigorous control measures, including systematic counts at distinct stages of the surgical procedure and, when warranted, employing imaging for clarification in cases of suspected missing materials preoperatively, represent the most judicious approach to mitigate this preventable complication. In addition, maintaining a detailed record serves as a vital measure for legal protection. At

present, abdominal sponges and dressings utilized during surgery are typically rendered radiopaque; however, it is important to acknowledge that this practice may not be uniformly implemented across all medical facilities. Indeed, there have been instances reported in case series where gossypibomas were identified without radiopaque markers.<sup>[8]</sup> The absence of radiopacity in the abdominal dressing retrieved from our patient, who had undergone surgery at an external facility two decades ago, aligns with these findings and underscores the variability in practices concerning radiopaque materials.

## CONCLUSION

It is crucial to remember that gossypiboma can be mistaken for other conditions, especially since it can show no symptoms for a long time. Therefore, doctors should consider it as a possible diagnosis in patients with a history of surgery, thinking about conditions such as cancer, hydatid cysts, blockage, abnormal connections, or abscess. This awareness is essential for timely and accurate identification and treatment if gossypiboma is suspected.

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**Conflict of Interest:** None declared.

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## OLGU SUNUMU - ÖZ

### Karaciğer kist hidatiği taklit eden gossypiboma: Olgu sunumu

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Gossypiboma, cerrahi sırasında unutulmuş absorbe olmayan materyallerdir. Abseden tümöre kadar tanı karmaşasına yol açan, medikolegal bir patolojidir. Yirmi iki yıl önce kist hidatik nedeniyle operasyon öyküsü bulunan ve nüks kist hidatik nedeniyle merkezimize refere edilen 57 yaşında erkek hastada, laparatomide saptanan gossypibomalı olguyu sunuyoruz. Özellikle asemptomatik hastalarda öyküde geçirilmiş cerrahi gossypiboma tanısını düşündürmelidir. Önlenebilir bu patoloji de ameliyat sırasındaki strateji, ameliyat ekibinin dikkatli ve kurallara uygun tutumu öncelikli belirleyicidir.

**Anahtar sözcükler:** Gossypiboma; kist hidatik; yabancı cisim.

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