CASE REPORT

Gossypiboma as a rare cause of abdominal mass

Afra Yildirim, Hakan İmamoğlu, Aslı Erzurumdağ, Serap Doğan

Department of Radiology,
Erciyes University, School of
Medicine, Kayseri, Turkey

Correspondence to
Dr Afra Yildirim,
drafrayildirim@hotmail.com

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SUMMARY

Gossypiboma is a reaction to a foreign body/object left accidentally inside a patient as a consequence of surgery. This phenomenon may be overlooked due to its rarity or under-reported due to possible repercussions. We report an intra-abdominal gossypiboma that was misdiagnosed on ultrasound, and discuss its radiological findings.

BACKGROUND

Gossypiboma is a reaction to a foreign body such as sponge accidentally left inside a patient during surgery. It is a serious complication that can cause morbidity and mortality. It may be asymptomatic for a period of time but on examination a significant palpable mass can be seen.^{1–3} Therefore, it should be considered in the differential diagnosis of patients with an intra-abdominal mass who have a previous history of surgery. Ultrasound (US) and CT are useful imaging modalities in the diagnosis of gossypibomas. We report here US and CT findings of gossypiboma.

CASE PRESENTATION

A 31-year-old woman was referred to our general surgery clinic with the provisional diagnosis of intra-abdominal tumour. The patient had symptoms of abdominal pain, distension, nausea and constipation for 4 years following a caesarean section and left oophorectomy. Transabdominal US examinations were obtained several times at different hospitals over the past 2 years, and either normal findings or excessive gas-filled bowel were reported.

Physical examination revealed tenderness in the left lower quadrant and an immobile palpable abdominal mass. Laboratory tests were within normal limits. The patient had no abnormal transvaginal US findings. Transabdominal US performed in our radiology department demonstrated a hyperechoic mass with strong posterior acoustic shadowing mimicking a gas-filled bowel (figure 1). Contrast-enhanced abdominal CT showed a well-encapsulated, contrast-enhanced thick-walled mass with internally infolded hyperdensity in the left lower quadrant (figure 2). With these findings the provisional diagnosis of gossypiboma was established. Exploratory laparotomy revealed an encapsulated sponge surrounded by omentum measuring 12×10×6 cm in size (figure 3).

DISCUSSION

Gossypibomas have a wide clinical spectrum. They are usually asymptomatic. However, as in our case, they may present with non-specific clinical symptoms such as nausea, vomiting, abdominal

distension and pain.^{4 5} Gossypibomas are rarely seen in daily clinical practice. Their actual incidence is unknown because they can be a medicolegal problem for surgeons. Their prevalence has been reported to be 1 in 100–3000 for all surgical interventions and 1 in 1000 to 1500 for intra-abdominal operations.^{1 6 7}

The initial presentation of symptoms depends on the type of inflammatory reactions. Exudative inflammation occurs in the early period and causes abscess or fistula whereas aseptic fibrinous inflammation is responsible for the encapsulation and granuloma formation resulting in a palpable mass, which may occur long after the surgery.^{1 5} Thus, the diagnosis is difficult and may be overlooked when past surgeries are not kept in mind, as was in the present case.

Radiography, US, CT, MRI and gastrointestinal contrast series may be used to diagnose gossypiboma. Radiographs are the most commonly used method to detect retained gauze. If forgotten gauze contains a radio-opaque substance, it can be seen on the X-ray. Radiographs can also suggest the diagnosis when a characteristic whorl-like pattern is seen. The US feature is usually a well-defined mass containing wavy internal echogenic focus with a hypoechoic rim and a strong posterior acoustic shadowing.⁷ On the other hand, it has been reported that gossypibomas can mimic haematomas, abscesses, cysts or tumours on transabdominal US.² Recently reported are some rare cases of retained surgical sponges in the retroperitoneum,⁸ in the thorax,⁹ as a supravescical mass simulating a bladder wall after 35 years of an appendectomy¹⁰ and even in the neck.¹¹

In the present case, posterior acoustic shadowing of the lesion was misinterpreted as a non-

Figure 1 Transabdominal ultrasound demonstrating a hyperechoic mass with strong, sharply demarcated posterior acoustic shadowing (arrows).

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Figure 2 Abdominal CT scan showing a well-encapsulated mass with internal infolded hyperdensity (arrowheads) and peripheral contrast enhancement in the left lower quadrant (arrow).

peristaltic, gas-filled bowel segment on previous US examinations. However, the strong posterior acoustic shadowing was sharply demarcated and there was no connection with bowel loops on the US obtained at our clinic. Hence, it was considered as a gossypiboma rather than a bowel segment. We think that the rarity of gossypibomas along with inexperience and not

being aware of the surgical history caused the delay in diagnosis in this case.

CT is the most useful modality in the diagnosis of retained foreign bodies. CT may show a low-density lesion containing an internal infolded hyperdensity and contrast-enhancing thin or thick wall. A whorl-like appearance or spongiform pattern with gas bubbles is a rare but most characteristic CT sign of a gossypiboma.⁵ In our case, CT showed a well-encapsulated peripherally enhancing mass with internal infolded hyperdensity suggesting a retained sponge.

Learning points

- ▶ The rarity of gossypibomas, and lack of knowledge of patient surgical history can cause delay in diagnosis.
- ▶ If an intra-abdominal lesion has an acoustic shadowing without connection with bowel loops on ultrasound, a gossypiboma should be kept in mind in the differential diagnosis.
- ▶ Awareness of imaging findings such as internally infolded hyperdensity and a whorl-like pattern on CT is very important for the diagnosis of a gossypiboma.

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Competing interests None.

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Figure 3 Specimen showing a large sponge.

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