

# Gossypiboma: a rare abdominal lesion of women after cesarean section, usually misdiagnosed as a neoplasm

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## Summary

The case of a 20-year-old pregnant woman with a history of one previous cesarean section (CS) who developed a tumorous mass in the area of the CS scar is presented. The clinical diagnosis of endometriosis or fibromatosis was made but the histologic findings were confusing and the pathological diagnosis of an inflammatory type of liposarcoma was made. The case was referred to our Laboratory for re-evaluation and the diagnosis of gossypiboma was made based on histopathological features, the patient's age, her medical history and the exact location of the lesion. Gossypiboma is a foreign body-related inflammatory pseudotumor caused by retained non-resorbable or even resorbable substances, such as glue, surgical gauze or sutures [1, 2]. It is an obscure lesion ignored by doctors of all specialties studying the differential diagnosis of a postoperative mass.

**Key words:** Gossypiboma; Abdominal wall; Postoperative tumor.

## Case Report

The patient was a healthy 20-year-old woman in her 38<sup>th</sup> week of pregnancy with a medical history of a previous cesarean section (CS) two years earlier. During the second CS, the attending gynecologist observed at the abdominal wall and protruding into the abdominal cavity a large "leiomyoma-like" tumorous mass. The tumor seemed to originate at the area of the first CS scar; it was excised and sent to the hospital pathology department. Grossly the lesion was well circumscribed, solid, measured 5.7 x 4.5 x 3 cm and on cut section presented "myxoid areas" and was whitish in color.

The diagnosis of an inflammatory-type liposarcoma was made but in view of the unusual morphology the case was referred to our department for re-evaluation.

Microscopic examination revealed a circumscribed fibroblastic inflammatory reaction, focally granulomatous, growing at the periphery of a foreign body, and consisting of mainly amorphous material. Multiple benign foreign body-type giant cells were also found in contact with this material (Figures 1 and 2).

No signs of endometriosis or fibromatosis were found. There was no evidence of cellular or nuclear atypia, mitotic activity, lipoblasts, or infiltrative margins and the final diagnosis of a gossypiboma was made.

No other therapeutic procedure was undertaken and the young patient is well without any evidence of recurrence of the lesion two years later.

## Discussion

Gossypiboma is an iatrogenic tumorous lesion caused by a foreign body reaction due to retained postoperative substances, with surgical gauze being the most frequently forgotten surgical material (80%) [1, 3].

The first to report retained surgical gauze after abdominal surgery was Wilson (1884) [3].

The word gossypiboma is derived from the latin *Gossypium* which means "cotton" and *boma* (Swahili), which "means place of concealment" [1]. An interesting alternative explanation of the origin of the word provided by Bani-Hani *et al.* is that the word has to do with the fact that retained materials give rise to gossip about surgeons [1, 4].

Gossypiboma is also called textiloma ("textile"), gauzoma ("gauze") or muslinoma ("muslin", a finely-woven cotton fabric). Etymologically speaking these terms should be used for masses produced by retained cotton or woven fabrics, but today they are also used for lesions caused by newer synthetic resorbable hemostatic agents (i.e., surgicel/gelfoam) [1, 2].

Bani-Hani *et al.* and Gawante *et al.* [4] report emergency surgery, unplanned changes during operation and high body mass index as the main risk factors for this lesion. A recent article [5] confirmed these factors as the most statistically significant ones and added as minor risk factors the involvement of more than one surgical team, changes in nursing staff during the surgical procedure, volume of blood loss, female sex and the surgical counts.

Preventive measures include the use of radio-opaque surgical materials, as recommended by Crossen and Crossen in 1940 [3], and repetitive and correct counting of the gauze pieces. Care has also been taken concerning continuous education of the operating personnel.

Despite these precautions, cases of forgotten surgical material causing inflammatory reactions are still reported in the literature [1, 5, 6].

Gossypibomas are reported to occur as a complication of almost any surgical procedure: abdominal surgery accounts for 52% of cases, gynecological for 22%, urological and vascular for 10%, and about 6% of cases occur in orthopedic and spinal surgery procedures [3].

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Fig. 1

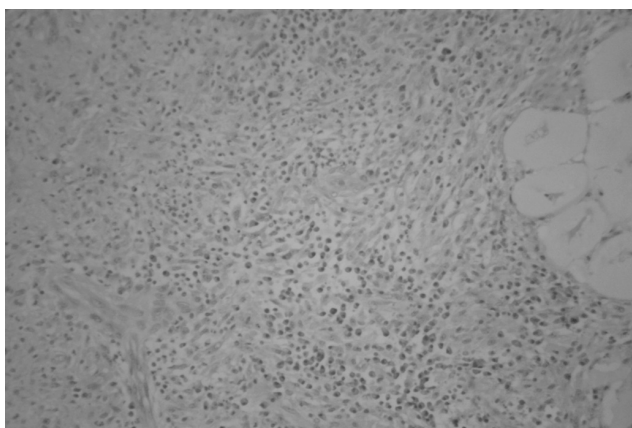


Fig. 2

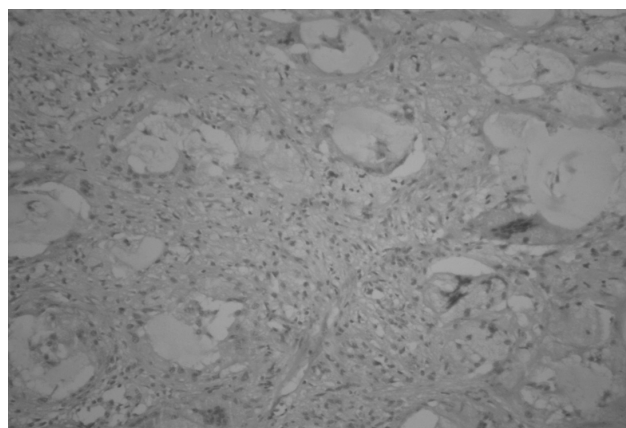


Figure 1. — Fibroblastic inflammatory reaction growing at the periphery of an amorphous material (hematoxylin-eosin x 100).

Figure 2. — Multiple benign foreign body type giant cells phagocytosing the amorphous material (hematoxylin-eosin x 250).

They have also been reported after thoracic and neurosurgical [2] procedures.

The real incidence is difficult to estimate because some patients remain asymptomatic and never discovered, and because of the lack of documentation of some diagnosed cases, especially since gossypiboma may carry legal implications. Generally, it has been reported as about 1/1000-1500 laparotomies [7].

Clinical signs depend on the location and the evolution of the foreign body reaction.

Abdominal gossypibomas, which are the most common, may cause abdominal pain, nausea, vomiting, anemia, malnutrition, weight loss, mass-related obstruction, erosion into the bowel, a septic condition or continuous discharge from the surgical wound surface [4, 6].

Thoracic textilomas may present with cough, expectoration and hemoptysis [4, 6].

In the extremities a gradually enlarging mass may be found [4, 6].

Symptoms may also be either acute or relatively delayed, depending on the type of pathological reaction, as classified by Olnick *et al.* [6].

Early cases present an exudative inflammatory reaction leading to an abscess, fistula or a discharging sinus [1, 3-5].

Delayed presentations may follow months, years or decades after the original operation and are related to an aseptic fibrinous inflammatory response with foreign body granuloma, often surrounded by a fibrous capsule and/or adhesions [1, 3-5]. One-third of all patients remain asymptomatic and in another third the lesion is found incidentally [8], as in our case.

The diagnosis of gossypiboma is difficult. It is a lesion that surgeons often omit in the differential diagnosis, especially when the lesion that was originally excised was a malignancy. Postoperative collection, hematoma, non-foreign body abscess, tumors, recurrent tumors and radiation necrosis are more likely to be considered.

The variability of the symptoms and of the time of presentation make diagnosis even harder.

Ultrasound, computed tomography and magnetic resonance imaging may be useful but their findings are variable or even absent in up to 50% of cases [3]. Plain X-rays are useful only if the surgical material contains a radio-opaque marker, although the thread marker, when small gauze is retained, may be visible in only 35% of the cases [3, 5].

The microscopic examination of the lesion by an informed pathologist is the key to the definite diagnosis although gossypibomas are lesions unknown to pathologists as well.

Diagnostic clues include age of the patient, his/her surgical history, findings of clinical examination, the location of the mass (at a previous operative scar), the presence of a foreign material birefracton under polarized light, the absence of nuclear atypia/mitoses, and the absence of invasion.

After the diagnosis of gossypiboma has been made, follow-up of the patient is recommended because rarely an angiosarcoma may develop in association with foreign materials [6, 9-11].

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