

CASE REPORT

Gossypiboma—Retained Surgical Sponge

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Intra-abdominal retained surgical sponge is an uncommon surgical error. Herein, we report a 92-year-old woman who was brought to the emergency room for acute urinary retention. She had a history of vaginal hysterectomy for uterine prolapse 18 years previously, performed at our hospital. Retained surgical sponge in the pelvic cavity was suspected by abdominal computed tomography. The surgical gauze was removed by laparotomy excision and the final diagnosis was gossypiboma. [*J Chin Med Assoc* 2007;70(11):511–513]

Key Words: gossypiboma, retained surgical sponge

Introduction

Gossypiboma is derived from gossypium (“cotton” in Latin) and boma (“place of concealment” in Swahili). Also known as textiloma or cottonoid, it is a term used to describe a mass in the body that comprises retained surgical sponge and reactive tissue.^{1,2} Retained surgical foreign body is a ubiquitous medical error as long as nonabsorbable materials continue to be used. The most common surgically retained foreign body is the laparotomy sponge. The reports of this technical oversight are the tip of an iceberg. This may be due to a general reluctance to publish matters that can lead to medicolegal implications or because it may initiate widespread critical press coverage.^{3,4}

Herein, we report a case of presacral gossypiboma that was characterized by the presentation of an encapsulated pelvic mass with central radio-opaque markers 18 years after vaginal hysterectomy.

Case Report

A 92-year-old, gravida 8, para 8, woman who experienced menopause at the age of 49 years was brought to our emergency room due to dysuria and urinary retention for 1 day. A firm, round, 10-cm mass was palpated without tenderness at her lower abdomen. Surprisingly,

the mass was still felt after Foley catheterization. The patient had undergone vaginal hysterectomy due to uterine prolapse 18 years previously, when she was 74 years old. Abdominal sonography revealed bilateral hydronephrosis and a pelvic mass. Ruptured desmoid cyst was impressed after consultation with a gynecologist. Serum tumor markers including α -fetoprotein, β -human chorionic gonadotropin, CA-125 and CA-199 were within normal limits. Further, computed tomography (CT) of the abdomen (Figure 1) depicted a large



Figure 1. Axial computed tomography of the abdomen shows a large well-defined pelvic mass with a thick peripheral hyperdense rim. The radio-opaque marker strip of the surgical sponge can be seen as a thin metallic density within the mass.

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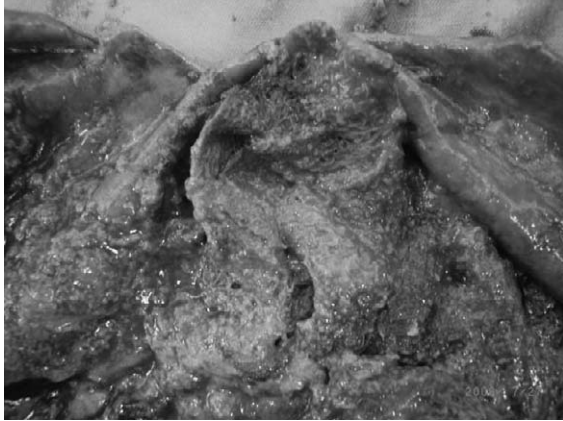


Figure 2. After cutting, the retained surgical sponge was found within the cystic mass.

well-defined pelvic mass with central linear radio-opacity. The radio-opaque marker strip of the surgical sponge was seen as a thin metallic density within the mass. A diagnosis of gossypiboma was made. At surgery, a 16 × 16 cm, well-capsulated intraperitoneal mass was excised from the severe adhesion between the tumor and the posterior wall of the urinary bladder. No bowel resection was required. The retained surgical sponge was found after cutting the cystic mass (Figure 2). On pathologic examination, the section revealed a cystic space with dense fibrous wall and the presence of foamy cells, without definite lining. The postoperative period was uneventful. The patient has been seen in follow-up and is doing well.

Discussion

Retained postoperative foreign body, of which surgical sponges are the most common, is a rare condition. In standard textbooks of radiology, *gossypiboma* or *textiloma* or *retained surgical sponge* is not even indexed. In the available literature, the imaging findings of a gossypiboma can only be found as occasional case reports. The incidence of gossypiboma is difficult to calculate. It varies between 1 in 100 and 1 in 5,000 procedures^{5,6} because some patients remain asymptomatic and are never discovered. This condition is often underestimated because case numbers are calculated only on the basis of malpractice claims and because the operations that form the denominator for their calculation include large numbers of procedures that are unlikely to result in retained sponges.

Gossypibomas most commonly occur in the abdominal or pelvic cavity, as after gynecologic and upper abdominal surgical procedures. Sponges have also been retained after thoracic or neurosurgery and joint

surgery. Retained sponges are more common in obese patients and after emergency surgery.^{3,7} Obese patients have a huge intraperitoneal space to hide sponges, and obesity may increase the technical difficulty of the operation. Gawande et al reported that retained sponges are 9 times more likely after an emergency operation and 4 times more likely when an unexpected change in the surgical procedure is undertaken.⁴

The clinical presentation of gossypiboma is variable and depends on the location of the sponge and the type of reaction. The sponges are inert in human tissue and do not undergo decomposition. There are 2 types of foreign body reaction in pathology: an exudate reaction leading to abscess formation or chronic internal or external fistula formation, and an aseptic fibrinous reaction resulting in adhesion, encapsulation, and eventual formation of granuloma of various size. The latter usually presents much later than exudate reaction sequelae. They usually remain asymptomatic or present with pseudotumor syndrome, as in this case.

Because the symptoms of gossypiboma are usually nonspecific and may appear years after surgery, the diagnosis of gossypiboma usually comes from imaging studies and a high index of suspicion. The most impressive imaging finding of gossypiboma is the curved or banded radio-opaque lines on plain radiograph. The ultrasound feature is usually a well-defined mass containing wavy internal echogenic focus with a hypoechoic rim and a strong posterior shadow. However, this is often misinterpreted due to its clinical rarity.⁸ On CT, a gossypiboma may manifest as a cystic lesion with internal spongiform appearance with mottled shadows as bubbles, hyperdense capsule, concentric layering, or mottled mural calcifications.⁹ When no radio-opaque marker is seen on X-ray or CT, the characteristic internal structure of the gauze granuloma is best visualized on magnetic resonance imaging. It may appear as a low-signal-intensity lesion on T2-weighted images with wavy, striped or spotted appearance.¹⁰

When the diagnosis of gossypiboma is made, removal of the retained sponge surgically, endoscopically or laparoscopically is recommended to prevent severe complications that may lead to death (15–22%) or morbidity.^{11–13}

The policy that prevention is far more important than cure is highly appreciated. The importance of correct sponge and instrument counts cannot be over-emphasized. If a thorough examination does not find the missing item(s), then a radiograph is necessary. Although human errors cannot be completely avoided, continuous medical training and strict adherence to

rules of the operation room should reduce the incidence of gossypiboma to a minimum.

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