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## Case Report

# Incidental gossypiboma on contrast enema study<sup>☆</sup>

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### ABSTRACT

This is a case report of a 50-year-old woman with HIV/HCV coinfection who was diagnosed with an HPV-related well-differentiated squamous cell carcinoma of the vulva. After undergoing modified radical vulvectomy and bilateral inguofemoral lymphadenectomy, the patient developed a rectovaginal fistula and a diverting colostomy was placed. During a postoperative contrast enema study, a curvilinear hyperdense stripe was noted, representing the radiodense marker thread of a retained surgical sponge. This case report highlights the importance of awareness of this retained surgical item and its associated possible complications, as well as the importance of imaging modalities for diagnosis.

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## Introduction

Wilson first introduced the term gossypiboma in 1884 to refer to a surgical complication in which a gauze or sponge is unintentionally left in a body cavity after a surgery [1]. This term is derived from the Latin word for cotton *gossypium* and the Swahili *boma* meaning place of concealment. Other names for these retained surgical items include textiloma, gauzoma, or cottonoid. The presence of a retained surgical item usually elicits one of 2 responses. The first type is an inflammatory response with abscess formation, usually leading to early detection in a septic patient [2]. The second type is aseptic, with the formation of adhesions and an encapsulated mass [2]. In both cases, imaging can provide the diagnosis, even when unsuspected.

## Case report

A 50-year-old woman with HIV/HCV coinfection presented with a 5 cm vulvar tumor near the midline, with no invasion of adjacent perineal structures and without palpable inguinal lymph nodes bilaterally. An incisional biopsy was performed and the patient was diagnosed with an HPV-related well-differentiated squamous cell carcinoma. The tumor was staged as IB according to the 2009 FIGO vulvar cancer staging system.

The patient was treated with modified radical vulvectomy and bilateral inguofemoral lymphadenectomy. The procedure was complicated by wound dehiscence and infection, needing surgical debridement and skin grafting. During recovery, she presented passage of stool through

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**Fig. 1 – Anteroposterior fluoroscopic image obtained by using water-soluble contrast material shows the normal appearance of the bowel with no signs of fistula. A fine curvilinear hyperdense thread (arrow) is noted near the intestinal stoma.**



**Fig. 2 – Lateral fluoroscopic image confirms the intra-abdominal location of the hyperdense thread (arrow), which corresponds to the radiodense marker of a surgical sponge.**

the vagina, suggesting a rectovaginal fistula, and, consequently, underwent diverting colostomy.

After clinical resolution of the rectovaginal fistula, a contrast enema study was ordered before bowel transit reconstruction. The study showed no evidence of leaks or fistulas; however, a fine curvilinear hyperdense stripe was noted, representing the radiodense marker thread of a surgical sponge (shown in Figs. 1 and 2).

The patient underwent elective surgery for bowel transit reconstruction and the retained item was retrieved at the same time. Even though some adhesions were found, no abscesses or other complications were associated with the gauze. The surgery and the postoperative period were uneventful and, fortunately, the patient had no consequences related to the retained surgical item.

## Discussion

Surgical sponges are the most common retained surgical items but several instruments such as clamps have also been reported. Even though this represents a potentially serious but avoidable surgical complication, few cases are reported on the subject probably due to medico-legal implications. The incidence of this complication is unknown but is estimated to range from 1/500 to 1/5000 procedures [3]. Risk factors include emergency surgery, prolonged operative duration, hemorrhagic interventions, unexpected change in procedure, involvement of more than one surgical team and incorrect or lack of surgical count [4].

The clinical presentation lacks specificity and is variable according to the location of the retained surgical item. In the case of intra-abdominal gossypiboma, it can range from asymptomatic, as in our case, to abdominal pain, anorexia, nausea, vomiting, fever, or sepsis [3]. The symptoms are mainly due to the inflammatory reaction elicited by the presence of the foreign body, with or without associated infection. Patients can also present with complications such as bowel obstruction, perforation, gastrointestinal bleeding, and peritonitis [5].

An abdominal radiograph may be sufficient to establish the diagnosis if the sponge contains a radiodense marker. However, the marker thread can get distorted or disintegrate over time, so plain abdominal radiographs have a false negative rate of 25% for its detection [6]. Gossypiboma can also present as a mass with associated mottled air, especially if there is an intra-abdominal abscess associated [7]. An abdominal and pelvic computed tomography scan is the best imaging modality to make this diagnosis as it can indicate the exact location of the retained surgical item and rule out complications [7].

Treatment should include removal of the retained material, possible antibiotics and further imaging to confirm complete removal. Ultimately, prevention of gossypiboma is of paramount importance, and is best achieved through implementation of safe surgical practices, including accurate preoperative count of all instruments, use of radiopaque strings to aid in localization of retained material, and careful postoperative imaging.

In our case, the patient was asymptomatic and the diagnosis was made incidentally on a routine postoperative exam, proving that awareness of this characteristic imaging appearance is of utmost importance.

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**Patient consent**

The authors declare that the patients gave their explicit written and fully informed consent.

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