

## ORIGINAL ARTICLE

## Gossypiboma Mimicking Intra-abdominal Tumour

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## DISCLOSURE

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**ABSTRACT**

Gossypiboma is a rare, preventable and under-reported pseudo-tumour complication following surgery. It has serious medicolegal consequences. It poses a diagnostic dilemma due to non-specific clinical and radiologic features. We therefore report a case of gossypiboma in a 31-year old woman following a midnight emergency caesarean operation, to highlight the risk in our environment, the implications and the need for a high index of suspicion in postsurgical patients.

**Key words:** Avoidable Surgical Complication, Intra-Abdominal Tumour, Medicolegal, Foreign-body, Under-reported

## INTRODUCTION

Although preventable, surgical materials can be left unintentionally in the patient at the end of surgery. Any surgical material including forceps, sponge, cotton wool, gauze, etc. can be forgotten. The most commonly retained surgical item is a woven cotton surgical sponge, which includes both laparotomy packs and smaller sponges.<sup>1</sup>

Gossypiboma is a pseudo-tumour, and an avoidable complication of surgery resulting from technical oversight.<sup>2</sup> The term is derived from Latin and Swahili words gossypium for "cotton" and boma for "a place of concealment" respectively.<sup>3</sup> Other terms used to describe gossypiboma include gauzeoma, cottonballoma, textilloma or cottonoid. This is rarely reported probably

due to the medico-legal implications, hence difficulty in estimating its incidence.<sup>24</sup> An attempted estimate put the incidence to be at 1 out of 300-1000 of all surgical interventions and 1 out of 1000-1500 of intra-abdominal operations.<sup>5</sup> We hereby report a case of forgotten gauze and cotton materials after caesarean section that mimicked an intra-abdominal tumour.

#### CASE REPORT

A 31 year old woman presented with a year history of slow growing non-reducible left lumbar swelling associated with recurrent low grade fever. She had worsening non-radiating colicky abdominal pain. Pain was relieved by analgesics and belching, but no aggravating factors. History of change in bowel habits, haematochezia, melaena stool, easy satiety, anorexia, nausea or vomiting, lower urinary tract symptoms and weight loss were negative. No similar mass elsewhere on the body. She had an emergency caesarean section for placenta praevia by a general practitioner in a private facility a year prior to presentation. The surgery was said to have lasted about three hours at night, with periods of intractable bleeding.

Abdominal examination revealed a mobile non-tender left lumbar mass with no differential warmth and no ascities. Rectal examination was unremarkable. A diagnosis of intra-abdominal tumour was made, with an abdomino-pelvic ultrasound findings suggestive of a transverse colonic tumour.

Exploratory laparotomy revealed a 15cmx20cm firm mass involving the proximal ileum, with multiple adhesions binding it with segments of the terminal ileum, jejunum and greater omentum but no lymphadenopathies. The adherent intestinal segments were freed, the mass resected and an ileo-ileal anastomosis done. Patient had

uneventful recovery, was discharged 8 days after surgery and has remained stable.

Histopathologic examination of resected specimen (figures 1a and b) revealed a 13.0x10.0x8.0cm extra-intestinal firm mass weighing 500g adherent to the omentum and intestinal segment with multiple points of perforation. Cut section into the fibrous mass shows lump of cotton wool and gauze enveloped by fibrotic wall. Microscopy shows refractile meshy foreign materials surrounded by sclerotic omental tissue with mixed inflammatory cells including giant cells (see figure 2). The attached intestinal tissue exhibits foci of ulceration and granulation tissue formation. A diagnosis of Textiloma (Gossypiboma) was made.

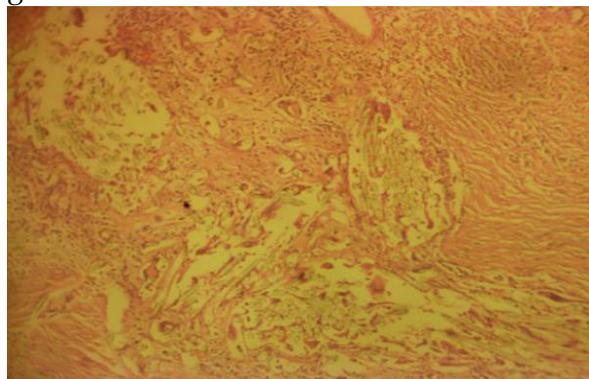
**Figure 1a.** Shows extra-intestinal firm mass adherent to the omentum and intestinal segment



**Figure 1b.** Cut section into the fibrous mass shows lump of cotton wool and gauze enveloped by fibrotic wall



**Figure 2.** Microscopy shows refractile meshy foreign materials surrounded by sclerotic omental tissue with mixed inflammatory cells including giant cells



#### DISCUSSION

Gossypiboma is an under-reported and avoidable iatrogenic complication of surgery with significant medico-legal implications both on the clinician and the patient. The medical and legal consequences for the clinician include mental agony, humiliation, monetary compensation and imprisonment, while for the patient include financial loss, morbidity and mortality.<sup>6</sup> Besides medico-legal reasons, stigmatization and “scapegoats” are other factors that hinder reporting of this medical error.<sup>4</sup> However, the incidence has been estimated to be between 1 in 1000 and 1500 operations on average.<sup>5</sup>

The risk is high in developing countries where power supply is epileptic to support emergency surgeries at night hours, as is the case with the index patient. Factors associated with increased risk of retained surgical gauze include emergency surgeries, disorganization, obese patients; unstable patient condition, a sudden change in surgical procedure, long operating hours, hurried sponge count, inadequate staffing and inexperienced staff.<sup>7</sup> The presentation may follow an acute course with granuloma or abscess formation, or a chronic course with fibrotic reaction and development of a mass.<sup>8</sup>

The clinical features of Gossypiboma are non-specific, however pain/irritation, fever and mass were found to be more common.<sup>9</sup> Also, investigative procedures including imaging are non-specific, as gossypiboma can mimic haematoma, abscess, cystic lesions or neoplasm.<sup>10,11</sup> Because it is not anticipated, misdiagnosis is frequent, leading often to unnecessary surgical interventions. Gossypiboma should therefore be considered in a post-surgical patient presenting with pain. However, effort should be focussed on the prevention, which can be achieved via proper surgical skills, routine and accurate gauze count, avoiding usage of free gauze during surgeries, use of gauze with radio-opaque X-ray markers, and radiofrequency tagged gauze.<sup>12</sup>

In order to reduce surgical complications, The World Health Organization (WHO) in 2009 designed a set of modifiable checklist for use by clinicians, and encouraged a coordinated teamwork with one person in the team charged with the responsibility of ensuring the completion of every stage on the checklist before proceeding to another. This checklist includes proper counting and recording of instrument usage before and after surgery.<sup>13</sup> A review article by Haugen et al, showed that introduction of the WHO Surgical Safety Check-list reduced complications from 11.0 to 7.0% ( $p < 0.001$ ), with a mortality drop from 1.5 to 0.8% ( $p = 0.003$ ).<sup>14</sup> Similarly, Haynes et al, reported a reduction of about 36% in post-surgical morbidity and mortality following usage of the WHO surgical checklist.<sup>15</sup>

Although most cases of gossypiboma are amenable to surgery, the health and cost implications on both patients and the surgeon is enormous. Again, as is the case with the index case, gossypiboma may be misdiagnosed as a malignant tumour leading to unnecessary invasive investigations and extirpative surgery which may be disabling.<sup>16</sup>

Legal claims for gossypiboma are therefore liable to succeed, leaving a serious dent on the image of the doctor, the medical profession and the hospital where the original surgery was performed.<sup>17</sup>

## CONCLUSION

Gossypiboma is associated with dire medico-legal implications; hence great emphasis must be placed on prevention. It poses a great deal of diagnostic challenge even after investigations. We recommend a high index of suspicion in any post-surgery patient presenting with pain, wound breakdown or mass close to site of previous surgery.

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