

Management of Five Cases of Gossypiboma in Clinical Prospective and Review of Literature

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Abstract

Gossypiboma (retained surgical sponge), are the most common iatrogenic abdominal foreign bodies. Even though it is unintentional by the team, it is a certain reality and poses significant medico-legal implications. It goes under reported to avoid negative publicity of the doctor and hospital. Five such cases are reported here. Postsurgical left over in body-space is serious situation and need removal by a second surgery. Five such cases, four intra-abdominal and one in the scrotum is reported. Only one case passed per anus and rest all needed second surgical intervention.

Keywords: Retained Surgical Sponge; Gossypiboma; Radio-Opaque Marker; Spontaneous Expulsion

Introduction

During the surgery, infrequently there is every possibility of leaving one of the items used during Surgery, like an instrument, surgical cloth or needle etc. This is always considered as a grave wrongdoing on the part of the surgeon as the team leader. In a team, each member has their definite role. The used item count is the responsibility of the scrubbed nurse. Gossypiboma, are the most common iatrogenic abdominal foreign bodies. It is a certain reality and pose significant medico-legal implications [1]. It mostly goes unreported because of bad publicity of the surgeon and the hospital [2-4]. Five such cases are reported here. Four patients needed a second hospitalization and surgical procedure. All these cases were managed by a single surgeon at various hospitals and the potential medicolegal cases could be avoided. One was removed by the patient and her daughter; second one was removed by a minimally invasive method and all others needed a second surgery.

Cases

Case 1

45 year old lady had presented with typical history of shifting pain from epigastrium to Right iliac fossa, mild fever and vomiting of 55 hrs. duration. She was looking ill; her pulse rate was 106/min and temperature was 100.4°F the abdomen was soft, but she was having Mc Burney's tenderness. Clinically she was diagnosed as appendicitis. This was corroborated on Ultra Sonography. Her TLC count was 15800/mL with polymorph leukocyte of 84%. She had undergone tubal ligation 21 years back with a suprapubic small transverse incision.

She underwent emergency appendicectomy at night through the right iliac fossa, muscle splitting incision. But the appendix could not be located due to adhesion. A senior surgeon decided for a second lower midline incision and the inflamed appendix was removed. She

had pain at the incision sites. It was not considered unusual and thought it appropriate for two incisions. Besides pain she recovered well. Sutures were removed on the 8th post-operative day. Both the incisions healed well (Figure 1A). But she kept on coming to the outpatient with pain at the pelvis. USG was done twice and nothing unusual was reported. Plain X-ray of the abdomen KUB was also reported normal. She was managed by reassurance and gabapentin. After 3 months of the surgery, one night she developed severe pain at the lower abdomen and had an urge for passing stool. The defecation act, as described by the patient, is like delivering a baby. In fact, one umbilical cord like structure came out and got stuck. She called her 21 years old daughter, after whose delivery the tubal ligation was done. She saw the structure like a tail of the animal soiled with fecal matter looking like grey wet hairs as per her description. She gathered courage, caught hold of it and pulled, while the lady patient was straining. The lady got the relief after a large volume of stool including the sponge with tail came out and felt better. In the meantime, the daughter went and washed the tail and whole body of the stuff and to her surprise a thick piece of cloth with a tail. She kept it in polythene bag carefully (Figure 1B). Whole family of four got up at night and started planning the next strategy. Their son was the most violent and wanted to teach a lesson to the surgeon, but the patient pacified him and said that she was better. However, they all decided to meet the doctor for treatment, if any. Fortunately, their son had a prior engagement and only three, the patient, husband and the daughter came, who described last night's drama in detail. The lady was re-examined, there was only mild tenderness at right side of pelvis, an urgent X-ray of the pelvis was done and found to be alright and after which they were reassured. The operating doctor was on leave and a possible bad scene was avoided. When asked about the pelvic pain, she said in negative after the defecation of the sponge. Good post-operative care, smooth talking after the incident and betterment of the patient after elimination of the abdominal sponge avoided a medico-legal complaint.

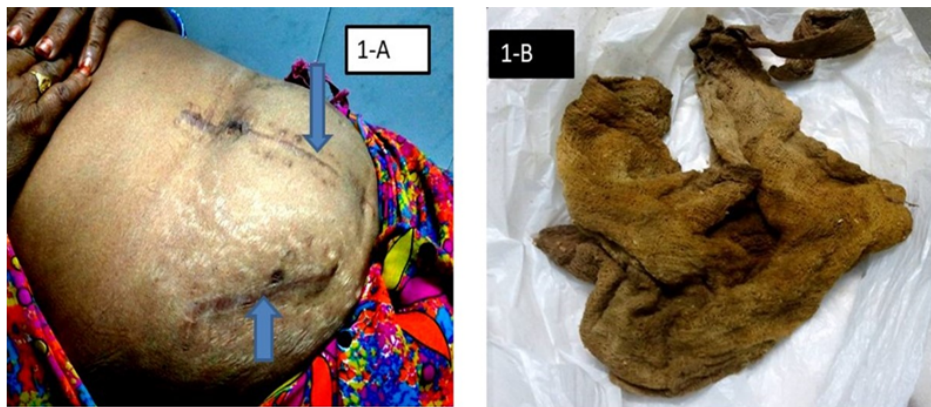


Figure 1A and 1B

Case 2

23 years old male had sudden onset, severe generalized abdomen pain with stoppage of flatus and stool of one day duration. He consulted a doctor. He got admitted and managed by nil orally, intra venous fluids and antibiotics for two weeks. As the boy was not improving, a CT scan of the abdomen was done, and he was shifted to a bigger hospital. He was looking ill, there was tachycardia, and running low grade fever. However, the blood pressure was normal. The abdomen was tender all over. The CT scan demonstrated multiple pockets of fluid collection. One representative image (Figure 2A) shows a fluid with air level at the sub-hepatic area. The total count was 11500/mL with Neutrophil of 88%. Other biochemical parameters like Urea, Creatinine were normal. The liver transaminases were elevated by 4 times of normal. The operating room was warned. A newly trained OT nurse was on duty. We observed a new batch of abdominal sponge which were too small in volume. Emergency exploration was done. There was duodenal perforation, with pus all over, bowel and omental

adhesion. Closure of perforation, peritoneal toilet was done, and skin was left open for 72 hrs. He recovered well and went home after 11 days. He came back after 21 days with features of bowel obstruction. The urgent plain X-ray abdomen had the telltale sign of the sponge with the radio-opaque marker (Figure 2B). The X-ray was kept with the operating surgeon. He was managed by IV fluid and planned for an emergency laparotomy at a lean time by evening with minimal personals in the operating room. The same surgeon operated, with three gloves on right and two gloves on the left hand. During the re-laparotomy the abdominal sponge was located after the release of dense adhesion, the sponge was caught and the surgeon removed the 3rd glove with the sponge inside without any body's knowledge and surgery was completed. He had an uneventful recovery. The patient is well during the five years follow up.

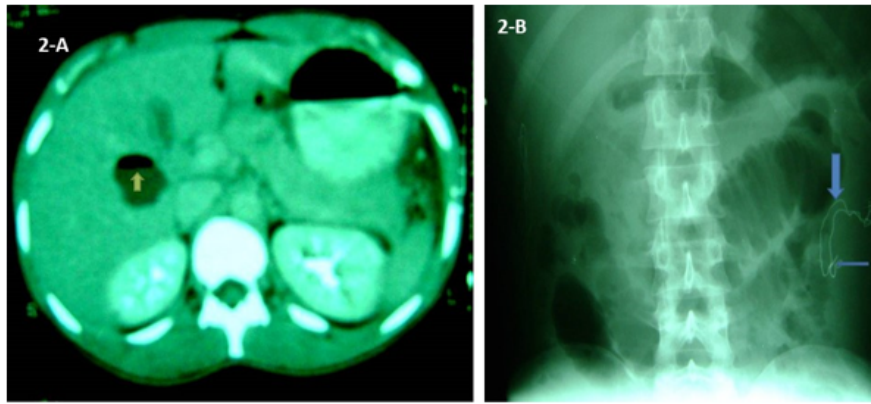


Figure 2: A- Air-fluid level below and lateral to gall bladder (arrow). B- Dilated jejunum with a shadow of radio-opaque marker of an abdominal sponge.

Case 3

39 years old lady had pain abdomen. It was located at the upper abdomen, vague type of pain aggravated after food. The doctor got a USG followed by a CT scan of abdomen and diagnosed as a pancreatic mass. She underwent an open abdominal surgery and she recovered well. However, she continued to have pain at the upper abdomen. She was on regular follow up, but nothing specific was done except symptomatic therapy. At the end of year, the USG detected few mass lesions on the liver and advised her re-laparotomy after CT scan. She came to us for a second opinion and to reduce the cost of her surgery. All the old documents were reviewed. It was found that she has undergone the surgery for a non-functioning neuro-endocrine tumor of pancreas. She was in good general condition and except the midline scar, there were no clinical finding. The CT scan was reported to be having liver secondaries. On review of the scan besides the secondaries, there was a doubt of a Gossypiboma (Figure 3A). four representative images together with arrow). All the available information was given to the patient and her kin, including the doubt of the foreign body and it was decided to do a diagnostic laparoscopy. After the adhesiolysis, the secondaries on the left lobe liver were confirmed and the doubtful mass was located. It was encapsulated and feel by the instrument was cystic. On opening, pus started coming out, which was sucked out and the gauze is visible (Figure 3B, video 1). It was removed in toto including the threads. The whole procedure was completed laparoscopically. At the end of the procedure, the author called the first operating surgeon. The father and son surgeon team came in four hours from a nearby city. It was requested to both the patient and the doctor's party to settle the issue mutually. She recovered fast after this laparoscopic removal and vanishing of pain, she remained pain free for 18 months follow up but the secondaries in the liver were increasing.

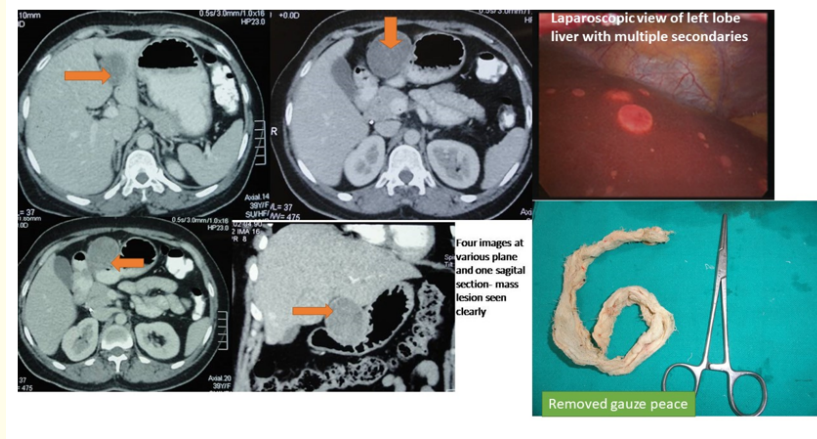


Figure 3A and 3B



video 1

Case 4

67 years old male had presented with, aorto-bifemoral block. He underwent aorto-bifemoral bypass graft. During closure, the scrub nurse noticed one missing surgical mop. The whole abdomen and whole theater were searched. The main surgeon himself came to search. It could not be located. Thereafter, a plain X-ray was done (Figure 4A). Fortunately enough a radio-opaque marker was visible, but the interpretation was wrong, so a GI surgeon was called, and the Mop was located (Figure 4B) and removed. Patient recovered well. The vigilant scrub nurse avoided a second surgery.

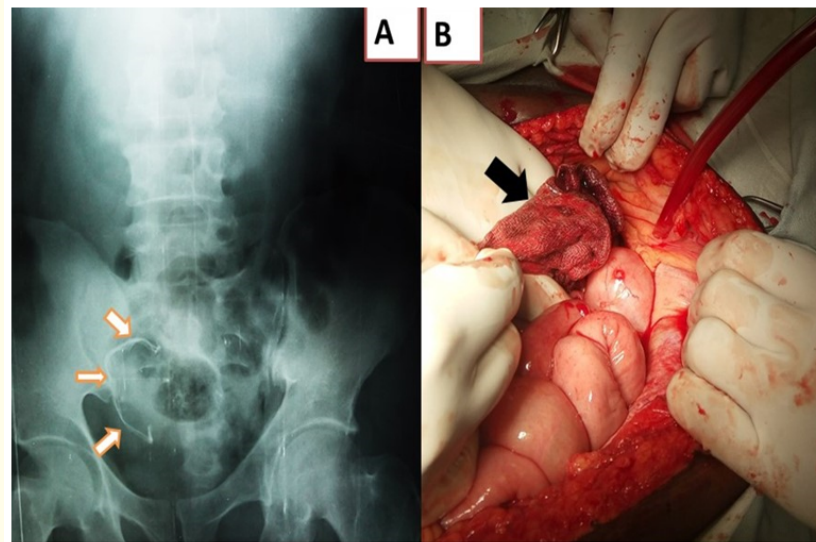


Figure 4: Three arrows showing radio-opaque markers of the surgical mop. B. Mop being taken out.

Case 5 (Scrotal FB)

37 years old male, a factory worker and father of two children, had presented with right sided scrotal swelling of 5 years duration. He went to the doctor, diagnosed as hydrocele tunica vaginalis testes. After all evaluation he underwent an elective surgery under spinal anesthesia. He underwent another procedure in the operation theater, detailed of the procedure were not known to the patient. After the second procedure he started having more pain and mild fever. After four weeks he reported back. The doctor got a CT scan of lower abdomen and scrotum (Figure 5A) and referred to a medical college. On examination, the right hemi-scrotum was observed to be bigger than the left. There was an open wound at the lowermost part of the incision with scanty pus discharge. It was looking red and very tender. Hence decided to examine and possibly explore under anesthesia. The video finding is attached as an edited video (Video 2). A long thin ribbon piece (Figure 5B). On further examination, there was a discontinuity of tunica albuginea and the testicular tissue were necrosed. Now, the whole sequence was presumed, testicular injury, scrotal haematoma, packing was done and possibly forgotten and hence the issue. Consent was taken from the patient and his wife for right sided orchidectomy (Figure 5B). After a wash with saline, the wound was closed. He had an uneventful recovery. He became pain free after eight weeks.

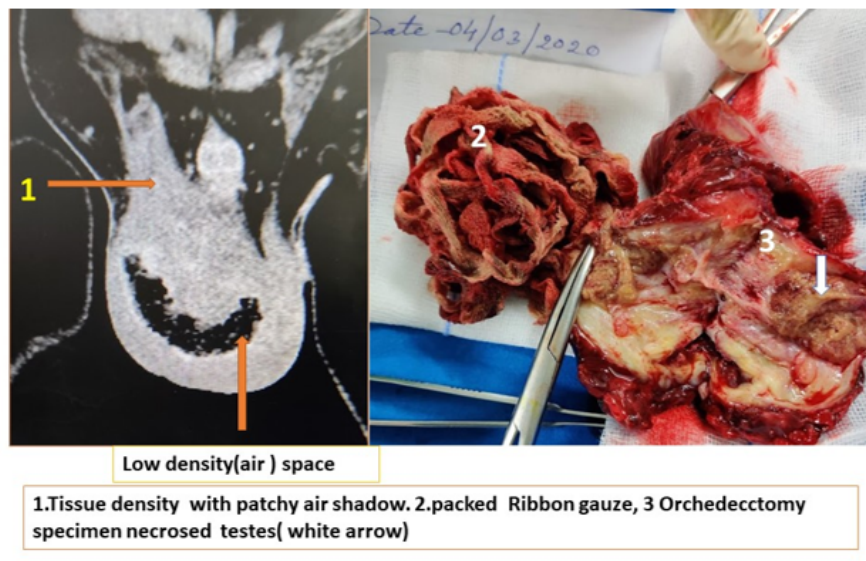


Figure 5



video 2

Discussion

Leaving a surgical sponge in a body cavity during a surgical procedure is considered a grave error by the chief surgeon of the operating team, even though the scrub nurse keeps the instruments and sponge counts. It gives suffering to the patients and a medico-legal suit is justifiable. In-fact Gossypiboma does give rise to significant medico-legal problems between the patient and the doctor [3,4]. It is under reported in medical literature, as it gives negative publicity for the surgeon and the hospital [2]. Most of the Gossypiboma react as per the physiological response of the body. Bigger is the FB, more is the symptomatology. The common symptoms are pain, fever, lump and bowel obstruction. Gossypiboma must be considered in a post operative setting with these symptomatology [5]. In-fact two of the present cases had pain as the main symptoms. A CT scan would have given the diagnosis. But we never thought of this condition. This mistake became an advantage and surgery was avoided. Whereas the last case CT scan raise the doubt and hence diagnostic laparoscopy for confirmation and removal was done at the same sitting. Till 2014 only seven cases of luminal migration into the gastrointestinal tract and bladder have been reported [6]. If it migrates to stomach, endoscopic removal is feasible, in cases of a small sponge [7]. Any large sponge may not be possible to be removed by oesophageal route. Only one case of spontaneous trans-anal passage of Gossypiboma is reported [8]. In that sense it becomes the second case. Gossypiboma is more common after emergency surgery Two of our cases were operated on emergency. This may be due inadequate and poor assistance, available personnel outside the team having more chances of human error and hence it is mostly reported as case reports, but in a series of 14 cases thirteen of them were symptomatic, nonspecific abdominal pain and intestinal obstruction. Four patients required urgent surgery because the sponges were causing intestinal obstruction or intra-abdominal sepsis [3]. In our five cases, the third case was an emergency, second was elective laparoscopic procedure was attempted and first case required only OPD procedure. In another study of 12 cases, Gossypiboma is considered a lethal condition, and the presentation were intestinal obstruction, (58.33%), discharging sinus, (41.67%), intra-abdominal abscess, (16.67%), peritonitis, (16.67%) and mass abdomen, (8.33%) with one fatality despite due care [9]. Two of five our cases had presented with bowel obstruction with vague tender mass and one with wound discharge. Although Gossypiboma is rarely seen in daily clinical practice, it should be considered in the differential diagnosis of acute mechanical intestinal obstruction in patients who underwent laparotomy previously [10]. At times it can get encapsulated to form a foreign body granuloma (gaudeamus) [11]. Transmural migration is seen when left for a long time [12] as in our first case, which came out per anum. Ultrasonography and Computed Tomography (CT) are essential for the diagnosis and management of retained abdominal foreign bodies (FB) [13]. Typical CT finding that of air density not only to the uppermost part but also seen at the lower part of the retained surgical sponge was seen (Figure 2). PET/CT gives a false positive report for cancer, which demonstrates a hypo metabolic area surrounded by increased 2-[fluorine-18] fluoro-2-deoxy-D-glucose uptake as if there is tumor necrosis [14]. Retained abdominal FB can be avoided by a thorough exploration of all quadrants of the abdomen, meticulous count of surgical materials at the termination of surgical cases and impregnation of surgical textile materials with a radio-opaque marker [10,12]. Handheld radiofrequency identification device was found 100% accurate when used correctly if available [15]. We used the available Plain X-ray with radiocontrast tag and CT images and localized before the exploration while removal of the same.

Conclusion

Gossypiboma should not be ruled out when there is prolonged unusual post-operative pain, fever and features of bowel obstruction. Plain X-ray is diagnostic in presence of radio-marker or else CT scan is essential for diagnosis and its location before attempting removal.

Bibliography

1. Târcoveanu E., *et al.* "Laparoscopic retrieval of gossypibomas--short series and review of literature". *Acta Chirurgica Belgica* 111.6 (2011): 366-369.
2. Grassi N., *et al.* "Trans-visceral migration of retained surgical gauze as a cause of intestinal obstruction: a case report". *Journal of Medical Case Reports* 2 (2008): 17.

3. Yildirim S., *et al.* "Retained surgical sponge (gossypiboma) after intraabdominal or retroperitoneal surgery: 14 cases treated at a single center". *Langenbeck's Archives of Surgery* 391.4 (2006): 390-395.
4. Ulsenheimer K. "Retained foreign bodies from the point of view of the jurist". *Chirurg* 78.1 (2007): 28-34.
5. Akbulut S., *et al.* "Gossypibomas mimicking a splenic hydatid cyst and ileal tumor: a case report and literature review". *Journal of Gastrointestinal Surgery* 15.11 (2011): 2101-2107.
6. Lv YX., *et al.* "Intractable duodenal ulcer caused by transmural migration of gossypiboma into the duodenum--a case report and literature review". *BMC Surgery* 14 (2014): 36.
7. Sozutek A., *et al.* "Transgastric migration of gossypiboma remedied with endoscopic removal: a case report". *BMC Research Notes* 6 (2013): 413.
8. Wéry O and Bihin M. "Defecation after colic transmural migration of a gauze pad left behind during abdomino-pelvic surgery". *Revue Medicale de Liege* 69.11 (2014): 590-593.
9. Ahmad G., *et al.* "Retained sponge after abdominal surgery". *Journal of College of Physicians and Surgeons Pakistan* 13.11 (2003): 640-643.
10. Gencosmanoglu R and Inceoglu R. "An unusual cause of small bowel obstruction: gossypiboma--case report". *BMC Surgery* 3 (2003): 6-8.
11. Kato K., *et al.* "[A case of paravesical foreign body granuloma due to surgical sponge retained for 40 years]". *Hinyokika Kyo* 46.7 (2000): 491-494.
12. Dhillon JS and Park A. "Transmural migration of a retained laparotomy sponge". *American Surgeon* 68.7 (2002): 603-605.
13. Hammoud D., *et al.* "[Imaging features of retained surgical foreign bodies]". *Journal of Radiology* 82.8 (2002): 913-916.
14. Ghersin E., *et al.* "A new pitfall on abdominal PET/CT: a retained surgical sponge". *Journal of Computer Assisted Tomography* 28.6 (2004): 839-841.
15. Macario A., *et al.* "Initial clinical evaluation of a handheld device for detecting retained surgical gauze sponges using radiofrequency identification technology". *Archives of Surgery* 141.7 (2006): 659-62.

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