Original Research Paper

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Radio-Diagnosis

TRANSMURAL MIGRATION OF RETAINED SURGICAL SPONGES: A REPORT OF TWO CASES WITH OBSTRUCTIVE SYMPTOMS

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ABSTRACT **Background:** Gossypiboma refers to a mass of cotton matrix left behind in the body after surgery. It is an avoidable surgical complication and can lead to sepsis or even death. Due to medicolegal concerns gossypiboma remains underreported. Transmural intraluminal migration of gossypiboma is extremely rare but has been reported in the intestines, urinary bladder, and thorax with the intestine being the most common site. We report two cases of transmural migration of gossypiboma into the duodenum and ileal loop identified months after the initial surgeries and presented with symptoms of obstruction.

KEYWORDS : Gossypiboma, Surgical Sponge, Intestinal Obstruction, Intraluminal Migration.

INTRODUCTION

Post operative retained surgical sponge also known as gossypiboma or textilloma is a rare but avoidable complication during surgical practice. It increases both post operative morbidity and mortality. Gossypiboma, a term derived from the Latin "gossypium" meaning cotton and the Swahilli "boma" meaning place of concealment refers to a mass of cotton matrix retained in the body part after an operation, usually caused by abdominal surgeries [1]. It is generally underreported due to associated medicolegal implications. In majority of cases patient remains asymptomatic for months to years. There are generally two types of reactive changes to gossypiboma : exudative inflammatory reaction forming abscess and fibrotic reaction which leads to mass formation 2. Transmural intraluminal migration of gossypiboma is an extremely rare process which is reported into intestinal lumen, urinary bladder or thorax [2]. Intestinal migration result from inflammation of intestinal wall followed by necrosis and migration of sponge. After complete migration intestinal loop closes spontaneously. Total of 93 cases of intraluminal gossypibomas has been reported in literature[3]. In another review of transmural migration of gossypiboma 64 cases were reported with intestine being the most common site of impaction (75%) followed by bladder (n= 7) and stomach (n= 2). Spontaneous expulsion was reported in 4 cases [4]. In most cases diagnosis is confirmed on USG and CT scan.

We report 2 such cases of transmural migration of surgical sponge into duodenum and ileal loop post cholecystectomy and hysterectomy respectively presented months after the surgery with symptom of intestinal obstruction.

Fig 1: Abdominal radiograph showing dilated bowel loops and mottled appearance in right lumber region.

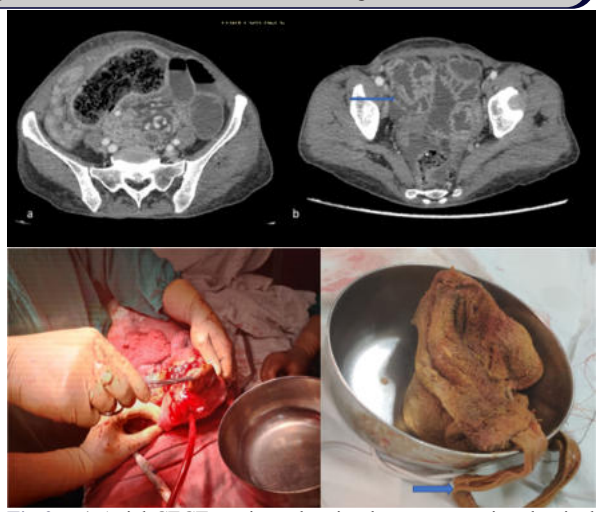

Fig 2: a) Axial CECT sections showing heterogenous intraluminal lesion with multiple entrapped air foci giving spongiform appearance and dilated proximal bowel loops b) linear hyperdense (arrow) intraluminal content seen in continuation with spongiform lesion. Intraoperative pictures showing reterivel of intraluminal gossypiboma with its tail (arrow)

Case 1

37 year old female presented in emergency with chief complaint of pain, nausea, vomiting, abdominal distension and constipation. She had underwent hysterectomy in private centre 6 months back. On examination there was healed transverse incisional scar and on palpation tenderness was noted. Preliminary evaluation showed dilated bowel loops with multiple air fluid levels on abdominal Xray (Fig 1). Further evaluation with CECT was done which showed mechanical obstruction with transition point in mid ileal loops (Fig2). There was presence of large hyperdense intraluminal lesion with mottled appearance and surrounding mural thickening with proximal dilated bowel loops indicating possibility of intraluminal Gossypiboma. Surgical exploration was done with extraction of the surgical sponge and resection anastomosis of the ileal loops and (Fig 2).

Case 2

32 year old female with history of open cholecystectomy 5 months back presented with complain of nausea and bilious vomiting after meal. Evaluation with CECT was done outside (Film not available) in view of suspected bile duct injury which showed round hyperdense

mass with mottled appearance with both intraluminal extraluminal component involving D1 part of duodenum suggesting Gossypiboma with partial intraluminal migration. Endoscopy was done which showed foreign body at duodenal bulb. Endoscopic retrieval with FB forceps was attempted however could not be retrieved because it was embedded in the wall. On open surgical exploration there was 5 x 5 cm mass at D1 level which was densely adherent and wrapped up with omentum. On dissection the gauze was retrieved along with sloughing of duodenal wall creating a rent of size 4x4 cm which was repaired (Fig 3).

Fig 3: a) Upper GI endoscopy images showing impacted surgical gauze in D1 part of duodenum b) Intraoperative pictures showing retrieval of intraluminal migrated gauze with small exophytic component (arrows) c) Retrieved gauze piece specimen.

DISCUSSION

Gossypiboma is an avoidable complication and has serious medicolegal implications. First case of gossypiboma was reported by Wilson in 1884 [5]. Gossypiboma is the most common foreign material retained in the abdomen accounting for 70% [6]. Risk factors which have been identified includes emergency operations, prolonged procedures, unplanned change in the course of a surgical procedure, involvement of more than one surgical team and patients with higher body mass index [7].

Transmural migration is rare process which occurs secondary to inflammatory response leading to necrosis and migration of sponge followed by spontaneous closure of the loop. Patil et al stated that the Fistulous tract is not usually seen, thus it is difficult to explain the course of the migration[8].

The present case report and review of literature suggests that possibility of a retained foreign body should be in the differential diagnosis of any postoperative patient who presents with pain, anorexia, nausea, vomiting ,infection, or palpable mass [9]. Imaging, particularly computed tomography (CT), plays an important role in diagnosis. Besides confirming a diagnosis of intestinal obstruction, CT allows a rather confident diagnosis of intraluminal sponge. The CT findings of a sponge include a rounded mass with whorl-like appearance with trapped air bubbles8. A hyperdense capsule and spotted calcification may also be seen. On ultrasonography, the sponge appears as an echogenic mass with dense shadowing.

Various techniques to decrease the incidence of gossypiboma are by using electronic article surveillance system which uses a tagged surgical sponge that can be identified electronically has been examined[10]. Bar codes can be applied to all sponges, and with the use of a bar code scanner the sponges can be counted on the back table[11].The small sponges should not be used during laparotomy and compresses should only be used intraperitoneally, one at a time, mounted on forceps [12]. The most importantly is “Prevention of three “never events” in the operating room: Fires, Gossypiboma, and wrong-site surgery”[13]. Irrespective of the rarity of reports, operating teams should take care to count swabs used in all procedures. Surgeons should develop a habit of performing a brief but thorough routine postoperative wound and cavity exploration prior to wound closure[14].

Management of this condition in our case was done by surgical exploration and extraction of the impacted sponge. Laparoscopic retrieval of the sponge can also be done by experienced surgeons.

CONCLUSION

Gossypiboma should be kept as a differential in patients presenting with features of intestinal obstruction with past history of surgery. Simple measures like keeping a pack count to always tagging the mop can help avoid this complication.

Differential Diagnosis Includes (depends on location)

a)Abscesses
b) Purposely placed surgical hemostatic material.
c) Hydatid cysts
d) Mycetoma

TEACHING POINTS

1. Gossypiboma are most often diagnosed in the intraabdominal cavity.
2. Possibility of Gossypiboma should be in the differential diagnosis of any postoperative patient who presents with pain, anorexia, nausea, vomiting ,infection, or palpable mass.
3. On USG retained surgical sponge are usually echogenic. CT findings of a sponge include a rounded mass with whorl-like appearance with trapped air bubbles.

MCQ

1) Gossypibomas most frequently involve?
A. Abdomen.
B. Extremities.
C. CNS.
D. Chest.

2) Ultrasonographic features of gossypiboma include all of the following EXCEPT?
A. An echogenic area with a strong posterior acoustic shadow.
B. A cystic mass with highly irregular internal echoes.
C. A solid mass with multiple dilated vessels.
D. A hypoechoic mass.

3) Patients with abdominal gossypibomas may present with all of the following symptoms EXCEPT:
A. Abdominal pain.
B. Dysphagia.
C. Abdominal distension.
D. Nausea.

Answer Key :-
1) A
2) C
3) B

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