



Journal Homepage: - www.journalijar.com
**INTERNATIONAL JOURNAL OF
 ADVANCED RESEARCH (IJAR)**

Article DOI: 10.21474/IJAR01/7717
 DOI URL: <http://dx.doi.org/10.21474/IJAR01/7717>



RESEARCH ARTICLE

A CASE SERIES ON GOSSYPIBOMA - VARIED CLINICAL PRESENTATIONS.

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Manuscript Info

Manuscript History

Received: 21 July 2018

Final Accepted: 27 August 2018

Published: September 2018

Abstract

Gossypiboma may present with various presentations. Cases are found rarely and are under-reported. We encountered 3 cases who presented to the emergency department with three various presentations- enterocutaneous fistula, parietal abscess, intraluminal retained surgical sponge presenting as abdominal lump. Incidentally all of them underwent gynaecological surgery previously.

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Introduction:-

Case Report

Case 1

Enterocutaneous fistula

A 42-year-old multiparous lady, presented to the OPD with history of discharge from abdominal in the infraumbilical part for 10 days(Fig. 1). The woman underwent abdominal hysterectomy one year back. She was apparently well during the post operative period. She was hemodynamically stable, she had no fever, no complain of pain abdomen. On examination she had discharge from abdomen similar to the small intestinal content. Ultrasonography and CT scan report(Fig. 2)revealed it to be a case of Gossypiboma.

Exploratory laparotomy was done with midline incision and elliptical incision around the fistulous tract(Fig. 3). Abdomen was entered through a virgin plane. Retained surgical sponge was found to have eroded the wall of small intestine-ileum over a segment of 10 cm. Sponge was removed(Fig.4), fistulous tract along with the diseased intestine was removed. Patient was discharged with stoma.



Fig. 1

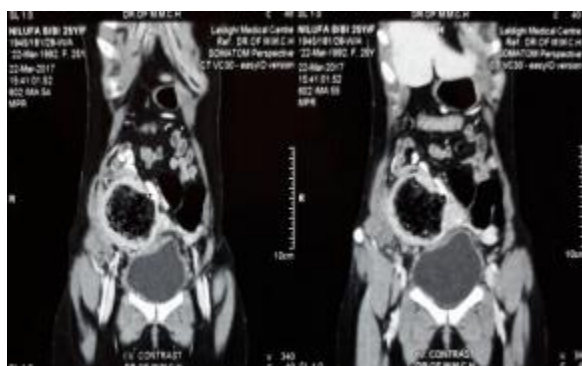


Fig. 2

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Fig. 3



Fig. 4

Case 2

Parietal Abscess

A 48 year old female presented to the emergency with parietal abscess with features of septicemia. Parietal abscess extended from hypogastrium to the level of umbilicus above and flanks laterally on both sides. She underwent abdominal hysterectomy one year back. She had an Ultrasonography of whole abdomen already done before presenting to the emergency department. Abscess was drained under anesthesia, no breach in the rectus sheath found. On abdominal exploration retained surgical sponge (Fig. 5A and B) was found. Wall of the small intestine was partly eroded. Resection of the intestine with guarding stoma done. She was discharged in good condition allowing for secondary healing of wound.



Fig. 5A



Fig. 5B

Case 3

Abdominal Lump

A 62 year old lady with past history of two abdominal surgeries and no significant personal or family history presented with swelling in the lower abdomen. She underwent abdominal hysterectomy 10 years back. On examination patient was found to have a intraperitoneal lump in the lower umbilical and upper hypogastric region of 8x5 cm in size which was having ellipsoid shape with irregular surface and margins, firm in consistency, with free mobility side to side and up and down and can get below the swelling

USG revealed it to be an abdominal mass without any definite origin. Uterus was absent, ovaries were not seen. CT scan of whole abdomen revealed a lower abdominal mass of 8.5 x 5 cm mass with distended large gut loops with ascites. (Fig 6A and 6B). Exploratory laparotomy revealed an intraluminal mass (Fig. 7) in the distal small gut 20 cm proximal to IC junction. Enterotomy was made to take out the intraluminal foreign body, a retained surgical sponge (Fig. 8). Limited ileo-colic resection (distal 30 cm ileum and caecum) with ileo-ascending anastomosis was done.

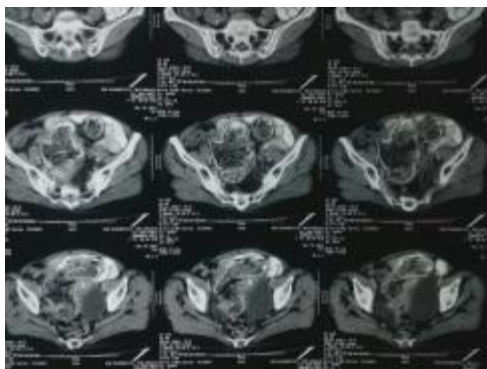


Fig 6A

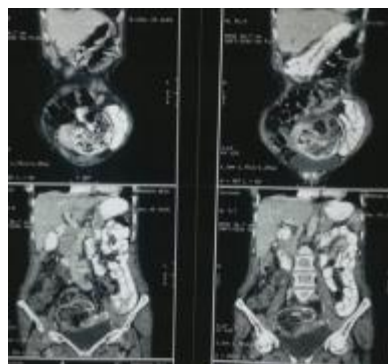


Fig. 6B



Fig.7



Fig.8

Discussion:-

The word 'Gossypiboma' is derived from Latin word, "Gossypium" means "cotton" and 'boma' means "a place of concealment". [1,2]. When found in the peritoneal cavity, these are infrequent, avoidable operative complication [3]. These retained foreign bodies after surgical procedures, which may be left behind inadvertently are a matter of concern because of medico-legal issues [1,4].

The first case of gossypiboma was reported by Wilson in 1884. The actual number of cases of gossypiboma are under-reported for their medico-legal implications.[5]. Though it can be found at any operative site but intra-peritoneal cavity is the most frequent site reported in literature as was seen in our patients. It occurs once in 100-5000 of all surgical interventions and one per 1000-1500 for all intra-abdominal operations [6], although this is only the tip of the iceberg. Other uncommon sites reported include chest, extremities, CNS and breast [7,8]. The retained surgical sponge presents differently and can mimic various pathologies, which lead to unnecessary diagnostic and therapeutic interventions. This further increases the morbidity. Gossypiboma retained in the body causes foreign body reactions which may vary from infection or abscess formation to a latent period of many months to years before being discovered without any specific clinical manifestations [9–11]. As cotton fibers are biochemically inert surgical sponge usually does not cause any specific reaction in the body. But they lead to adhesions and granuloma formation around them and become encapsulated – the aseptic fibrous reaction [12]. If secondary bacterial infection occurs in the post operative period, it can cause fistula formation [13], the risk increases with the duration of sponge being retained in the abdominal cavity, as was seen in case no.1 where sponge was retained for one year approximately. Secondary bacterial infection may lead to parietal abscess formation without any breach in rectus sheath as in case no. 2.

The presentation may be acute or sub acute. In acute manifestations of gossypiboma, there may be non-specific abdominal pain, vague abdominal lump, nausea/vomiting and abdominal distension suggesting intestinal obstruction in the immediate post-op period [14]. The palpable mass in the abdomen may be confused with soft tissue tumour

according to its location, as in case 3 the gossypiboma was misdiagnosed as adnexal mass, which may further lead to unnecessary interventions in the form of biopsy and imaging studies, as was also reported as dermoid cyst of ovary in a post caesarean patient [5].

Rarely gossypiboma occurs in intrathoracic cavity after breast surgery and even endonasal surgery. They present with symptoms and signs related to their location like cough and nasal discharge respectively [12].

In a few cases, once the gauze goes into the gut lumen, the peristalsis of gut may lead to spontaneous expulsion per rectum [14]. The intestinal loop closes after complete migration of sponge [15]. In case 3 we found a similar case, intraluminal retained sponge.

In a study by Jaffary et al., mass abdomen was the most common presentation (50%) followed by features of intestinal obstruction (43%) [16]. Another study by Moyle describes pain (42%), mass abdomen (27%) and fever (12%) as the presenting symptoms [17]. In the present study, 1/3 (33%) presented with mass abdomen and sepsis each while pain was the presenting complaint in three of them along with other features.

Gynecological surgery is responsible for retained sponge in more than half of surgical cases (53%) [18]. In the present study all of them underwent gynecological surgery. The risk factors reported are emergency surgery, unexpected change in surgical procedure, change of operating surgeon, uncontrolled haemorrhage, obesity [15,19]. In our study, all the 3 reported cases experienced excessive intraoperative haemorrhage. The preoperative diagnosis needs a high index of suspicion, to be confirmed with imaging studies [14–17]. Abdominal radiograph is first line investigation which may show a whorl-like pattern of impregnated thread. It may also present as encapsulated heterogeneous mass with air bubbles in it [3], or calcified mass in contact with gut loops or bladder. Although plain X-ray abdomen is useful in diagnosis, use of ultrasound, MRI and CECT is also well documented for diagnosis of gossypiboma. CECT was the confirmatory diagnostic modality in our study in almost all cases even when clinical index of suspicion was high. In case of fistula formation and intrusion into the gut, contrast studies may help site and extent of the complication, but are usually not required as re-laparotomy is always warranted for its management. Ultrasound features suggesting gossypiboma are, a wavy internal echoes inside a well defined cystic mass surrounded by a hypoechoic ring and posterior acoustic shadowing because of the sponge. In the solid type, it is the complex mixed echogenicity mass. CECT is the investigation of choice. Spongiform appearance is typical finding on CT scan and marked enhancement with contrast [20]. On MRI, whole internal configuration on T2-weighted and hypo intense on T1-weighted [21] according to fluid filled (abscess) or fibrotic encapsulation of the retained sponge. PET CT [22] is also reported as a tool for diagnosis. The fibrotic inflammatory capsule shows high uptake of FDG and low central uptake because of gauze itself.

Sometimes, the surgical sponge with a radio opaque marker, can be picked up on X-ray or CT scan [1] but may be fragmented if retained for longer duration and therefore undetectable [1,2]. New technologies in the form of electronic article surveillance system can identify tagged surgical sponge electronically are being developed to reduce incidence of gossypiboma [8].

Management

Surgical management is the optimal management after diagnosis. If superficial, it can be retrieved from the skin wound or excision of sinus tract [3]. Most of the patients require surgical exploration under anaesthesia for retrieval of the sponge, as was done in all patients in our study.

The interval between primary surgery and re-exploration varies from weeks to years and longest report is 40 years [16] according to host tissue reaction. In our patients it varied from one year to 10 years. Laparoscopic removal is also documented. Rarely, as was reported in one case [2], a gossypiboma after transabdominal surgery for renal cell carcinoma was left untreated because it was not causing any intestinal symptoms.

With the advancement in field of endoscopic surgeries, the incidence of retained sponges may decrease. Still, human errors tend to occur in spite of all prevention. Accurate sponge count, is universally recommended once before the surgical procedure and twice after the surgery [3]. If the count is incomplete intraoperative, a thorough search should be done and if still not found, a radiograph is mandatory. Early recognition of this entity will ensure prompt institution of appropriate treatment, reducing morbidity and mortality in such patients.

Medicolegal issues

There are no set guidelines or laws which directly address this issue in India. All efforts are made to prevent this complication and if it happens, it should be managed with audit of the system and of the operating team with the best possible management of the patients [3]. Gossypiboma is considered to be the classic example of medical negligence as the operating surgeon has failed to achieve the standard of care, defined as 'a care needed for a medical doctor who has same situations and same conditions in consideration of scientific and technique developing level of medicine science, labor conditions, and educational level of medical doctor [23]. It is difficult to decide whether gauze left in the abdomen is always due to a real lack of quality on the part of the surgeon or of the theater nurse. In some places as per law, legal responsibilities of retained foreign body lies with the operating surgeon even for the errors committed by the members of his surgical team [24].

Conclusion:-

Gossypiboma is reported rarely as clinical manifestations of retained sponges takes a long latent period and hence has a low index of suspicion. The actual management is usually delayed as correct diagnosis is difficult. Manifestations are mainly due to foreign body reaction and secondary infection. Secondary infection may present with entero-cutaneous fistula or parietal wall abscess without breach in rectus sheath. Intraluminal sponge may present without features of intestinal obstruction. Re-exploration and removal of retained sponge remained the goal of treatment.

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