

# Retained Sponge After Open Cholecystectomy Causing Gastric Outlet Obstruction: Case Report And Literature Review

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## Abstract

Gastric outlet obstruction (GOO) is not considered a single entity; rather it is the clinical consequence of any disease process that produces blockade to gastric emptying. A study shows that only 37% of patients with GOO have benign disease and the remaining patients have obstructions due to malignancy. Gossypibomas most commonly occur following abdominal and gynecological surgery and generally require re-operation as soon as they are diagnosed as complications and morbidity are high. We report a case of retained surgical sponge after open cholecystectomy causing gastric outlet obstruction.

## INTRODUCTION

Gastric outlet obstruction (GOO) is not considered a single entity; rather it is the clinical consequence of any disease process that produces blockade to gastric emptying. A study shows that only 37% of patients with GOO have benign disease and the remaining patients have obstructions due to malignancy.

Gossypibomas most commonly occur following abdominal and gynecological surgery and generally require re-operation as soon as they are diagnosed as complications and morbidity are high. We report a case of retained surgical sponge after open cholecystectomy causing gastric outlet obstruction. We report a case of a patient with a retained sponge.

## CASE REPORT

A 42-year-old woman presented to our university hospital with intractable repeated vomiting for 5 months. It was progressive and not responding to any medications. There were intermittent attacks of fever at the start of the complaint. Loss of weight was noted by the patient but there was no anorexia, hematemesis, dyspepsia or melena. Open cholecystectomy had been done 6 months ago and the patient remained unwell even after the operation, with vomiting from 2 weeks postoperatively until now. Physical examination revealed a thin build and an emaciated look. There was no fever, tachycardia or jaundice. Abdominal examination revealed a scar of the right Kocher

incision of the cholecystectomy operation, but there were no palpable organs or masses in the epigastrium or right hypochondrium.

Laboratory investigations showed a hemoglobin of 9.5 gm/dl, leucocytes of 7500/ml, normal blood sugar, urea, creatinine and liver functions. Imaging investigation by ultrasonography of the abdomen was unremarkable. Upper GIT endoscopy was planned to verify the cause of vomiting. Surprisingly, we found a big foreign body in the form of towels protruding from the pyloric canal towards the body of the stomach causing complete obstruction of the gastric outlet. Attempts at removal through the endoscope failed. Laparoscopy was decided to evaluate the abdominal cavity and to see any evidence of peritonitis. We found only marked adhesions at the site of the previous cholecystectomy operation, with the stomach and duodenum adherent to the abdominal wall.

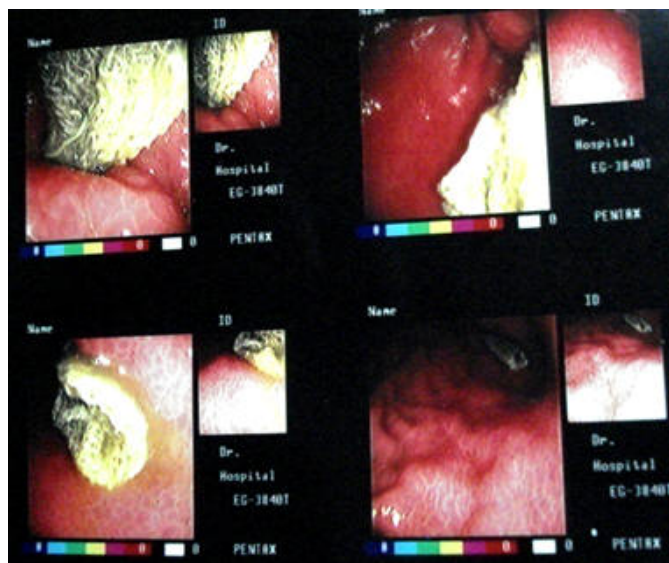
Laparotomy was performed for better assessment and management. It consisted of freeing the adhesions between the stomach, duodenum, and abdominal wall using sharp dissection. The scissor encroached upon the abdominal wall to avoid injury to the stomach and duodenum. Importantly, there was no evidence of perforation, fistula, hemorrhage or peritonitis on examining the gastroduodenal wall during laparotomy. A gastrotomy incision made on the anterior wall of the stomach revealed a large surgical towel emerging from the pyloric opening, obstructing the gastric outlet completely. Gentle removal of this towel was successfully

achieved, followed by closure of the gastrotomy incision with Vicryl® 2/0 sutured in two layers. A nasogastric tube was left in the stomach for 3 days postoperatively. Closure of the laparotomy wound was performed, leaving a drain in the peritoneal cavity.

The patient showed a smooth and uneventful postoperative course with marked and dramatic improvement in her condition. Vomiting ceased completely after one week, followed by normal enteral feeding.

**Figure 1**

Endoscopic pictures of a retained sponge obstructing the pyloric canal completely



**Figure 2**

Additional endoscopic pictures of a retained sponge obstructing the pyloric canal completely



**DISCUSSION**

Retained surgical sponge or gossypiboma is a relatively common occurrence; however, surgeons may not report these events for fear of litigation and adverse publicity(1). Intra-gastric foreign bodies are an unusual cause of gastric outlet obstruction, most cases are due to bezoar formation (accumulation of either organic or nonorganic material into masses or concretions that are not cleared from the stomach)(2).

In Egypt, we believe ours is the first report of acute gastric outlet obstruction caused by transmural migration of a retained sponge after open cholecystectomy. Even after extensive search of medical literature, we are able to find only a few cases of this rare cause of gastric outlet obstruction.

Gastric outlet obstruction is usually caused by malignancy or pyloric stenosis due to peptic ulcer. Other causes include extrinsic compression from neoplastic or inflammatory swellings from adjoining structures. Rare causes of gastric outlet obstruction include foreign body impaction after oral intake in conditions like trichobezoar, phytobezoar, lactobezoar etc. But transmural migration of an intraperitoneal retained foreign body through the duodenal wall causing gastric outlet obstruction is very rare(3). Among the reported cases of foreign bodies retained postoperatively, the laparotomy sponge is the most common(4) and is reported mostly after open

cholecystectomy(5). Although the real incidence is unknown, it has been reported to be one in 100 to 3,000 for all surgical interventions, and one in 1,000 to 1,500 for intraabdominal surgeries(3).

Pathological responses may be aseptic fibrinous reaction leading to encapsulation, adhesion and granuloma formation or exudative reaction leading to abscess formation(6). More complications are observed in the exudative type, the common ones being bowel obstruction, perforation, pseudotumor, granulomatous peritonitis, bleeding(7). Gastric outlet obstruction (GOO) is not considered a single entity; rather it is the clinical consequence of any disease process that produces blockade to gastric emptying. A study shows that only 37% of patients with GOO have benign disease and the remaining patients have obstructions due to malignancy(5).

Gossypibomas most commonly occur following abdominal and gynecological surgery and generally require re-operation as soon as they are diagnosed as complications and morbidity are high(3,7). The stomach is an even more unusual site for such a migration because of its relatively small surface area, higher location in the abdomen and thick wall(8).

Retained surgical sponges are an under-reported occurrence. Clinical presentation may be acute, or subacute, and may follow months or even years after surgery. Inadvertently leaving some surgical instruments or sponges inside patients continues to occur despite manual counting by operating room personnel.

The risk of retaining a surgical instrument is enhanced by certain factors. Obesity, emergency surgery and an unplanned change in an operation greatly increase the risk of surgical instrument retention(9). The incidence of retained foreign bodies after operation is unknown. Egorova et al. found that the rate of retained instruments was 1 in 7000 surgeries or 1 per 70 count discrepancy cases(5).

Sarda et al. report 3 cases with retained surgical sponges. One of them was a 26-year-old woman presented with GOO due to the sponge obstructing the pyloric canal 3 months following cholecystectomy, which was completely relieved following endoscopical removal of the sponge(1).

Despite preventive measures, many times instruments remain within the patient, leading to postoperative symptoms that may persist for weeks, months or years after incision closure. During the years following surgery, patients often are misdiagnosed or remain undiagnosed(10). The low

index of suspicion due to the rarity of the condition and long latency in the manifestation of the symptoms frequently leads to delay in diagnosis or missed diagnosis till laparotomy.

Although surgery is the recommended mode of treatment, prevention is the best course and should be emphasized. In the operating room, there should always be a clear record of all foreign materials used during surgery, without exception. Textile materials used should be impregnated with radio-opaque markers(8). At the end of the procedure, the surgical site should be thoroughly checked for any retained foreign bodies.

A handheld scanning device has been invented to aid in the detection of retained surgical gauze and sponges. Surgical gauze and sponges can be equipped with a radiofrequency identification chip that is sensed by the wand upon scanning a patient's body, alerting the surgical team. Studies were performed during actual surgical procedures and retained sponges were detected correctly within 3 seconds to 1 minute. This new technology was found to be 100% accurate; however, it was determined that the possibility remains for leaving surgical tools behind because handheld scanning can be performed incorrectly(11).

## CONCLUSION

Retained surgical sponge can lead to significant medical and legal problems between the patient and the doctor. Strict measures must be taken to prevent this complication. General awareness of retained foreign bodies should be in mind if there is postoperative persistent complaint. Strict adherence to swab counts, and avoidance of change of staff during procedures is important in decreasing the incidence of retained foreign bodies.

## References

- 1- Sarda AK, Pandey D, Neogi S, et al.: Postoperative complications due to a retained sponge. *Singapore Med J*; 2007; 48: e160-4.
- 2- Tadros G, Draganescu J, Clarke L, et al.: Intra-gastric gallstone-induced bezoar: an unusual cause of GOO. *Southern Med J*; 2002; 95: 261-4.
- 3- Manikyam SR, Gupta V, Gupta R, Gupta NM: Retained surgical sponge presenting as a gastric outlet obstruction and duodeno-ileo-colic fistula: report of a case. *Surg Today*; 2002; 32: 426-8.
- 4- Suwatanapongched T, Boonkasem S, Sathianpitayakul E, Leelachaikul P: Intrathoracic gossypiboma: Radiographic and CT findings. *Br J Radiol*; 2005; 78: 851-853.
- 5- Egorova N, Moskowitz A, Gelijns A, et al.: Managing the prevention of retained surgical instruments: what is the value of counting? *Ann Surg*; 2008; 247: 13-18.
- 6- Dux M, Ganten M, Lubienski A, et al.: Retained surgical sponge with migration into the duodenum and persistent duodenal fistula. *Eur Radiol*; 2002; 12(Suppl 3): S74-7.

7- Gencosmanoglu R, Inceoglu R: An unusual cause of small bowel obstruction: gossypiboma — case report. *BMC Surg*; 2003; 3: 6.

8- Dhillon JS, Park A: Transmural migration of a retained laparotomy sponge. *Am Surg*; 2002; 68: 603-5.

9- Gawande A, Studdert D, Orav E, Brennan T, Zinner M: Risk factors for retained instruments and sponges after surgery. *N Engl J Med*; 2003; 348: 229-235.

10- Bani-Hani KE, Gharaibeh KA, Yaghan RJ: Retained surgical sponges (gossypiboma). *Asian J Surg*; 2005; 28: 109-15.

11- Macario A, Morris D, Morris S: Initial clinical evaluation of a handheld device for detecting retained surgical gauze sponges using radiofrequency identification technology. *Arch Surg*; 2006; 141: 659-662.

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