
Gauze Pad in the Abdomen: Can you give the diagnosis without knowing the history?

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A gauze piece forgotten in the abdominal cavity during surgery can be very hazardous and may give rise to varied clinical presentations. Because of medico legal implications these cases are seldom reported,¹ and the true magnitude of this problem is difficult to appreciate. A high index of suspicion coupled with imaging features is essential to make a timely diagnosis. We report a case of intra abdominal gossypiboma with a cutaneous fistula.

KEY WORDS: Gossypiboma, Peritoneal cavity, Computed Tomography (CT)

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The retained surgical sponge following surgeries is a highly underestimated problem.² Despite precautions, this entity occurs and presents with highly variable clinical and radiological features. Such cases are seldom reported in medical literature mainly due to the legal implications it carries. This entity poses a diagnostic dilemma and may remain asymptomatic for many years.

CASE HISTORY

A 30 year old man with ischemic bowel disease underwent resection of the small bowel with a proximal jejunostomy and a distal ileostomy. Three months after the surgery he presented with vomiting and abdominal discomfort associated with a discharging sinus from the operative site. A plain radiograph of the abdomen showed a well-defined radiolucency in the left hypochondrium with a sieve like pattern within.



Figure 1: Plain radiograph of the abdomen shows a well-defined circular radiolucent mass in the left hypochondrium with multiple radio-opaque densities within it.

This lesion was suspected to be a gauze sponge and barium examination was performed to look for possible communication with the bowel loops. The examination revealed accumulation of barium within the dependent portion of the lesion. The pattern of air and contrast in this area of collection suggested that this could be related to the presence of the iatrogenic opaque foreign body.

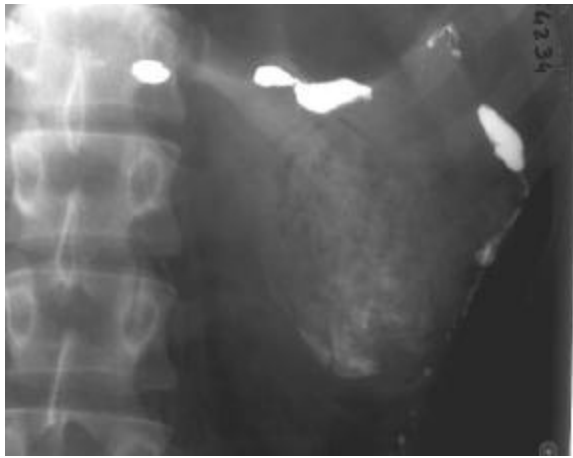


Figure 2: Barium examination reveals multiple hyperdense foci within the lower pole of the lesion, which are not seen on plain film.

Further evaluation with CT scan, revealed a well defined mixed density lesion, which on contrast showed a peripheral enhancement and a thin rim of hypodensity with air pockets in the center.

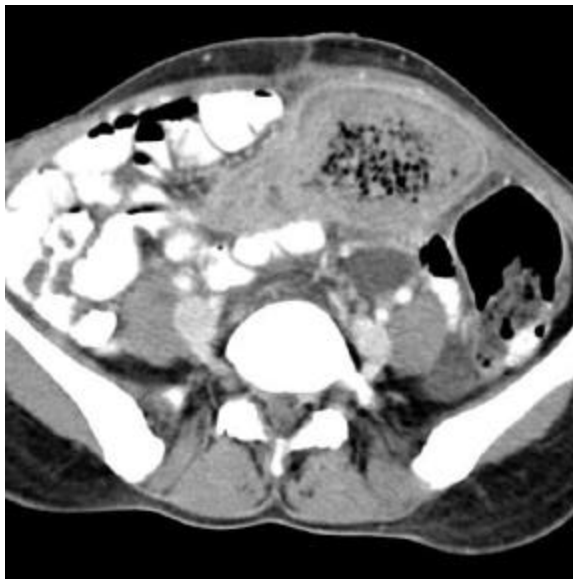


Figure 3: Post contrast axial CT scan of the abdomen demonstrating a well defined thick walled collection with multiple pockets of air within.

Considering the history of surgery and imaging features, the diagnosis of gossypiboma was made. The patient was operated subsequently and one surgical gauze piece was removed.

DISCUSSION

The foreign bodies retained in the abdomen following surgery are sponges, towels and gauze pieces.³ The magnitude of this problem is highly underestimated and the clinical presentation is highly variable.⁴ The exact incidence of surgical gauze left behind in operated patients is unknown.²

The patients usually present with a mass and / or abdominal pain.⁴ The pain is most commonly due to ileus and adhesions. Textile foreign bodies provoke a fibrotic foreign body reaction with granuloma formation that involves the gauze, the neighboring organs or invades the hollow viscus in the vicinity of the foreign body.² The common sites of accidentally retained gauze piece are intra or extra-abdominal, pelvic cavity and the lumbar spine.⁵

Depending on its location and evolution, gauze left in the abdomen can cause pseudotumoral syndrome, intestinal obstruction (if it is taken up by the bowel), adhesions or may remain completely asymptomatic.² In addition, other complications like abscess formation, fistulas, intestinal hemorrhage,⁶ are known. Erosion into the adjacent bowel loops with resultant intestinal obstruction and fistula formation has also been reported.⁷ Aseptic encapsulation of the retained gauze can occur and the patient may remain asymptomatic for many years.³

Around 50% of retained gauze pieces are discovered after at least 5 years of the surgery.⁸ One third of all patients remain asymptomatic and another third are discovered incidentally.

The imaging features of retained intra abdominal gauze piece are variable. Plain radiographs can diagnose such accidental retention of surgical sponges provided a radio opaque marker has been incorporated into the gauze.³ However a whirl like appearance may be seen even without radioopaque markers.⁹ They may present as heterogenous ill-defined masses with gas bubbles within a fibrotic capsule² as seen in our case. If the gauze is in contact with urinary or the gastrointestinal tract a peripheral calcification may be seen.² Tract studies with iodinated contrast delineates the communication with the intra-abdominal structures and reveals the network of the gauze.²

Ultrasound done on these patients revealed that the surgical sponges are echogenic and create

an intense and sharply delineated acoustic shadow. This acoustic shadow can be present even in the absence of air and calcification.¹⁰ Sometimes, a surgical sponge may appear like a cystic mass with highly irregular internal echoes, however a hypoechoic mass with complex echogenic foci can also be seen.¹⁰

On CT scans the lesions are fairly well circumscribed with a densely enhancing wall. The center of the lesion shows a whirl-like pattern. This is due to the gas trapped in the fiber meshwork of the gauze. Air fluid levels and/or gas may be seen in cases of abscess formation.⁴ The gauze piece shows a strong rim enhancement after intravenous contrast administration. This CT appearance is suggestive of retained surgical sponge in asymptomatic patients. The differential diagnosis to this appearance is a hematoma or an abdominal abscess.¹⁰ With time, CT features do not change with the exception of calcification in the retained surgical sponge.¹⁰ On magnetic resonance imaging (MRI), retained surgical gauze pieces are of low signal intensity on T1 weighted images and very high signal intensity on T2 weighted images. The gauze pieces have a wavy, striped and/or spotted appearance.¹¹

Hence to avoid complications, double counting of the gauze pieces before and after the closure of the abdominal wall is recommended. With the use of surgical gauze with radio-opaque markers, early detection and removal of the gauze is possible which helps to prevent further complications.¹² When the above imaging findings are noted in

patients with previous history of surgery, the diagnosis of a retained surgical sponge should be considered.⁴

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