

Case Reports

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Herniation and incarceration of the gallbladder through the abdominal drain site: A case report

Dmitry V. Garbuzenko, Dmitry V. Belov¹

Abstract:

A rare case of herniation and incarceration of the gallbladder through the abdominal drain site in an 86-year-old woman with degenerative aortic valve disease, a severe aortic stenosis, and an aortic insufficiency grade 2 hospitalized for transcatheter aortic valve implantation is described. An incarcerated incisional hernia through the abdominal drain site was confirmed by contrast-enhanced multislice computed tomography (MSCT) scan of the abdomen. Given the short duration of incarceration and the absence of MSCT findings of the gallbladder wall necrosis, the patient was dynamically monitored. There were no indications for emergency surgery. The presented case recalls the possibility of the formation of incisional hernias containing the gallbladder through the abdominal drain site. Literature data indicate that the diagnostic errors when they are incarcerated can lead to fatal consequences.

Keywords:

Gallbladder herniation, gallbladder incarceration, rare type of incisional hernia through the abdominal drain site

Key Messages:

The clinical manifestations of gallbladder herniation through the abdominal drain site may be erased. Ultrasonography is a good diagnostic modality to detect them, but MSCT is the most informative method. Literature data indicate that the diagnostic errors when they are incarcerated can lead to fatal consequences.

Introduction

The routine use of drains for abdominal surgical interventions has become less common because of variety of postdrainage complications.^[1] Gallbladder herniation through the abdominal drain site is a very rare complication. In general, gallbladder herniation is an uncommon event. Most of the cases reported in the literature are internal hernias through the foramen of Winslow.^[2] Exceptional cases have been published where the gallbladder was the content of an inguinal hernia, a Spigelian hernia, a lumbar hernia, an incisional hernia, and a parastomal hernia.^[3-7] We report a

case of herniation and incarceration of the gallbladder through the abdominal drain site.

Case History

An 86-year-old woman with degenerative aortic valve disease, a severe aortic stenosis, and an aortic insufficiency grade 2 was hospitalized for transcatheter aortic valve implantation. About 20 years ago, she underwent a surgery for perforated diverticular disease (Hartmann procedure, abdominal drainage, and subsequent colostomy reversal).

During the preoperative preparation, the patient felt an acute right upper quadrant

Departments of Faculty
Surgery and
¹Hospital Surgery, South
Ural State Medical
University, Chelyabinsk,
Russia

**Address for
correspondence:** Prof.
Dmitry V. Garbuzenko,
Department of Faculty
Surgery, South
Ural State Medical
University, PO Box
12317, Chelyabinsk
454080, Russia.
E-mail: garb@inbox.ru

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pain. On physical examination, she had a painful rounded irreducible formation up to 4 cm in diameter, of a soft-elastic consistency protruding from the right upper quadrant next to the abdominal drain site. Physical signs of disease did not allow to exclude the presence of an incarcerated hernia through the abdominal drain site in the right upper quadrant.

The patient had no acute abnormality in laboratory blood work. For further workup, the patient underwent a contrast-enhanced multislice computed tomography (MSCT) scan of the abdomen. According to MSCT, a hole in the anterior abdominal wall up to 28 mm was found. The hernia sac contained a bottom and body of the gallbladder, as well as a large arterial vessel 2 mm in diameter. The gallbladder wall was thickened, accumulating a lot of contrast agent [Figures 1 and 2].

During examination of the patient, the hernia was adjusted on its own, and the pain was gone.

Given the short duration of incarceration and the absence of MSCT findings of the gallbladder wall necrosis, the patient was dynamically monitored. There were no indications for emergency surgery. She underwent transcatheter aortic valve implantation and was discharged in satisfactory condition after 8 days of admission. Elective hernia repair was recommended.

Discussion

It is known that mobile segments of the small or large bowel, as well as a greater omentum, are usually the contents of abdominal hernias, but various other viscera or pelvic organs are occasionally involved. The literature describes cases in which the liver, spleen, pancreas, stomach, ureter, ovary, and fallopian tube were contents of abdominal hernias.^[2]

Gallbladder herniation is very rare, and its incarceration is considered casuistry. In most cases, gallbladder herniation is observed in elderly patients, usually in women. Among the risk factors, weakness of the anterior abdominal wall, a decrease in the subcutaneous fat layer, increased mobility of the gallbladder in the presence of mesentery, liver atrophy, and visceroptosis were considered. In addition, the likelihood of gallbladder herniation is increased with long-term chronic inflammation in the distended gallbladder and its close contact with the anterior abdominal wall.^[8] On the contrary, cholelithiasis is not an aggravating event, but it can contribute to incarceration.^[7]

The rarity of the described case is the herniation and incarceration of the gallbladder through the abdominal drain site. Abdominal drain site hernias are classified as

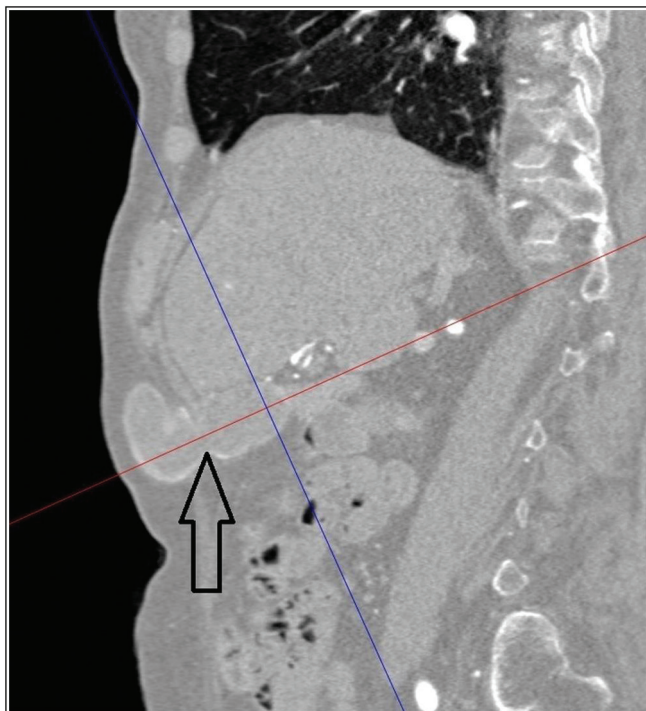


Figure 1: MSCT. Herniation and incarceration of the gallbladder (arrow)



Figure 2: MSCT. The incarcerated gallbladder in the hole of the anterior abdominal wall (arrow)

incisional hernias and are quite rare. Cases have been published, in which the small bowel, greater omentum, appendix, fallopian tube, gallbladder, and bladder were the contents of the abdominal drain site hernias. Gallbladder herniation through the abdominal drain site occurs in about 2% of cases. Due to a narrow hernia sac neck, the risk of strangulation and incarceration increases.^[9]

Predisposing factors for herniation through the abdominal drain site as reported include poor nutritional status and general debility, increased intra-abdominal pressure, obesity, and steroid administration.^[9] In addition, the diameter of the drain tube has an important role. There is a real threat if it is more than 10 mm. At the same time, cases have been described, in which hernias were formed when using drain tubes of smaller diameter. Besides, a direct puncture, rather than pushing the abdominal wall apart with the clamp, the use of trocars having cutting tip, intensive and prolonged manipulation of it with subsequent drain tube placement during laparoscopic interventions also matters.^[10]

There are many recommendations on how abdominal drain site hernias could be prevented:

- the use of drain should be justified;
- the use of "Z" insertion method, and making a purse string from the closure of the defect after removal of the drain tube;
- the use of a small stab incision through the skin and aponeurosis and inserting the drain tube obliquely;
- obliteration of the tract with nonabsorbable suture after removal of the drain tube;
- shortening of the drain tube progressively before it is finally removed;
- the use of drain tubes measuring less than 10 mm in external diameter should be encouraged.^[9]

The symptoms of the gallbladder herniation through the abdominal drain site may have blurred character. This leads to late diagnosis and, in the presence of incarceration, increases the risk of mortality. Patients are usually concerned about moderate pain in the hernia area, whereas nausea and vomiting are often absent. Ultrasonography is a good diagnostic modality to detect the gallbladder herniation, but MSCT is the most informative method.^[2]

Conclusion

The presented case recalls the possibility of the formation of incisional hernias containing the gallbladder through the abdominal drain site. Literature data indicate that the diagnostic errors when they are incarcerated can lead to fatal consequences.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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