

Segmental liver incarceration through a recurrent incisional lumbar hernia

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BACKGROUND: Lumbar hernia is a rare congenital or acquired defect of the posterior abdominal wall. The acquired type is more common and occurs mainly as an incisional defect after flank surgery. Incarceration or strangulation of hernia contents is uncommon.

METHOD: Segmental liver incarceration through a recurrent incisional lumbar defect was diagnosed in a 58 years old woman by magnetic resonance imaging.

RESULTS: The patient underwent an open repair of the complicated hernia. An expanded polytetrafluoroethylene (e-PTFE) mesh was fashioned as a sublay prosthesis. She had an uncomplicated postoperative course. Follow-up examinations revealed no evidence of recurrence.

CONCLUSIONS: Although lumbar hernia rarely results in incarceration or strangulation, early repair is necessary because of the risks of complications and the increasing difficulty in repairment as it enlarges. Surgical repair is often difficult and challenging.

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KEY WORDS: lumbar hernia;
incisional;
liver incarceration

Introduction

Lumbar hernias are rare defects of the posterior abdominal wall. They occur frequently in the lumbar region which is bounded superiorly by

the 12th rib, inferiorly by the iliac crest, medially by the erector spinae and laterally by the external oblique muscle.^[1] The two main areas of lumbar herniation are the superior lumbar triangle (Grynfeltt-Lesshaft) and the inferior lumbar triangle (Petit). The superior lumbar triangle is larger and more constant than the inferior triangle, possibly accounting for the greater frequency of hernias in this area.^[2] Lumbar hernias can be classified as congenital or acquired. The acquired type may be secondary to trauma or surgical operations. Most incisional lumbar hernias occur after flank surgery (nephrectomy, aortic aneurysm repair, iliac bone graft harvest or latissimus dorsi myocutaneous flap).^[3]

Case report

A 58-year-old woman was admitted to the hospital for a 7-day history of a right lumbar swelling associated with dull abdominal pain. The pain had gradually increased to the point where lying on the affected side was extremely difficult. She had undergone a right nephrectomy via a retroperitoneal approach through a flank incision 2 years before presentation. Seven months after the initial surgery, she was found to have a right incisional lumbar hernia that was repaired at another institution with an onlay polypropylene mesh. Two months after the repair, she noticed a recurrent bulge in the same area which was initially reducible but became irreducible 7 days prior to this admission.

Physical examination revealed an irreducible tender right lumbar swelling measuring about 10 cm in diameter. A right transverse flank incisional scar was also apparent. There were no clinical manifestations of bowel obstruction, while laboratory values were normal. A magnetic resonance imaging scan had been performed at the institution few hours prior to the present admission demonstrated a right lumbar hernia with a segment of the right liver lobe herniating

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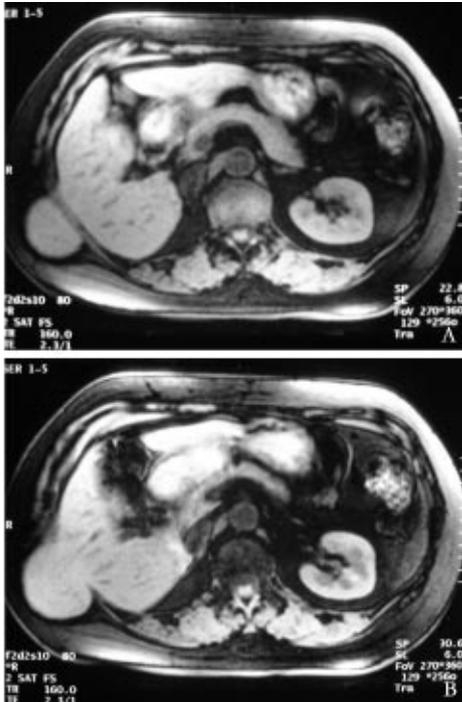


Fig. 1. Magnetic resonance imaging scans demonstrating incarceration of the segmental right liver lobe through a lumbar defect.



Fig. 2. Intraoperative photo showing a deep circumferential imprint on the liver surface caused by the constricting hernia ring.

through the defect (Fig. 1). At surgery, the swelling was explored via the previous incision. A peritoneal sac was found herniating through a lumbar defect. When opened, the sac was found to contain a segment of the right liver lobe which was easily reduced. A deep circumferential imprint on the liver surface, caused by the constricting hernia ring, was also apparent (Fig. 2). After the sac was excised, a 20×20 cm piece of expanded polytetrafluoroethylene mesh (Gore-Tex, W.L Gore and Associates, Flagstaff, Arizona, USA) was used for the repair. The mesh was fashioned as a sublay prosthesis, overlapping the margins of the defect by at least 3 cm in all directions. Full thickness

nonabsorbable interrupted transabdominal stitches were used for the mesh fixation. The patient had an uncomplicated postoperative course and was discharged on the fifth postoperative day.

Discussion

Herniation of abdominal contents through the lumbar quadrangle is relatively rare.^[4] The most common contents of a lumbar hernia are retroperitoneal fat, small and large bowel, kidney, omentum, cecum, appendix, stomach, ovary, spleen and rarely kidney.^[1] Our case appears to be the first description of a segmental liver incarceration through a recurrent incisional lumbar defect which was diagnosed by magnetic resonance imaging. However, herniation of the liver into the thoracic cavity either through congenital diaphragmatic defects or secondary to trauma is not uncommon.^[5] Intercostal liver herniation has also been reported.^[6] Regarding liver herniation through the anterior abdominal wall, we were able to find only two cases in which the liver was protruding through an incisional hernia,^[5, 7] and one case of hepatic herniation into the rectus muscle.^[8]

The clinical presentation of a lumbar hernia varies significantly from an asymptomatic manner to manifestations of intestinal obstruction and strangulation. Most commonly, however, patients present with a reducible flank bulge associated with vague pain or discomfort.^[4] Lumbar hernias are associated with a 25% risk of incarceration and 8% chance of strangulation.^[4]

Computed tomography (CT) scan is the diagnostic modality of choice.^[3, 9] It can provide detailed information about the anatomy of the lumbar area, the extent of the defect and the presence of herniated intraabdominal viscera. CT scan can also differentiate a hernia from muscle atrophy with no fascial defect for which no surgical intervention is required.^[3] The predominant cause for the postoperative bulge is intercostal nerve injury which results in subsequent paralysis of abdominal wall musculature. This injury can be reduced by avoiding to some extent the incision extending into the 11th intercostal space.^[10] The implementation of CT is also of great importance in hemodynamically stable patients with traumatic lumbar hernia as it allows differentiation of a hernia from hematoma or abscess and can also detect various coexisting injuries.^[11, 12]

Surgical repair is a treatment of choice for lumbar hernias and should be considered in all cases if medically feasible. Various surgical approaches

have been described including primary repair, tissue flaps and mesh repair including laparoscopic transabdominal and retroperitoneoscopic approaches.^[13] Regarding open approaches, no procedure has been shown to have certain advantages over the others especially in view of the relatively rarity of these cases.^[3] Surgical repair is sometimes difficult and challenging for the surgeon. The difficulty in defining the margins of the fascial defect, the weakness of the involved structures, the participation of a bone element, and a lack of sufficient experience are all elements taken into consideration during surgical planning.^[14] As comparative studies have shown certain advantages of the laparoscopic approach over the conventional open repair,^[14] the former may become the repair of choice for lumbar hernias.^[3]

In conclusion, the present case of segmental liver incarceration through a recurrent incisional lumbar defect is exceptional. Although lumbar hernias rarely result in incarceration or strangulation, they should be repaired at an early stage, because of the risks of complications and the increasing difficulty to repair as they enlarge.

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