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Case Report

Inferior lumbar triangle hernia with incarceration

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ABSTRACT

Lumbar hernia is a rare condition in which intra or extraperitoneal tissue protrudes through a defect in the posterolateral region of the flank. Incarceration is uncommon but represents a surgical emergency when present. A 54-year-old-male presented to the ED after sudden onset left flank pain after coughing. He was in significant distress secondary to pain and vomiting, and his physical exam revealed a tender mass in his left lateral lumbar region near the site of a previous stab wound. Bedside ultrasound revealed a fluid-filled structure, and CT scan demonstrated herniation of small bowel though the inferior lumbar triangle with associated small bowel obstruction. The patient underwent emergent surgical reduction with mesh repair and recovered uneventfully. Incarcerated lumbar hernia represents a rare diagnosis that may not be at the forefront of most practitioners' differential diagnoses. CT scan is useful to distinguish hernia from solid mass, abscess, or other pathology, while bedside ultrasound may prompt an attempt at immediate reduction. The presence of incarcerated bowel or obstruction warrants immediate surgical consultation.

1. Introduction

Lumbar hernia is the protrusion of intraperitoneal or extraperitoneal tissue through a posterolateral abdominal wall defect [1]. First suggested by Barbette in 1672, lumbar hernias are rare with only 300 cases reported in the literature, and surgical repair can be difficult given their location and surrounding bony structures [1-4].

2. Case

A 54-year-old man presented to the emergency department 2 h after developing sudden onset left flank pain and swelling after forceful coughing. He had nausea and vomiting but no hematemesis, bowel changes, or urinary symptoms. He denied recent trauma but reported a stab wound to the left inferolateral back 20 years prior. His past medical history included hypertension, chronic low back pain, and gastroesophageal reflux, and he underwent radiofrequency ablation of a lumbar facet nerve the previous year.

The patient presented with a blood pressure of 136/65, pulse 76 beats/min, respiratory rate 18 breaths/min, temperature 36.4 °C (97.5 °F), and spO2 95% on room air. He was in distress secondary to pain with intermittent emesis. His physical exam was notable for a protruding mass in the left lower back measuring approximately 12x10cm without surrounding erythema or ecchymosis, and there was a small horizontal keloid scar on the lateral aspect of the bulge. The affected area was tender to palpation and not reducible. His abdomen was soft and non-tender with hypoactive bowel sounds, and his cardiovascular, pulmonary, and neurologic exams were unremarkable.

Basic metabolic panel, complete blood count, and urinalysis were within normal range apart from mild hypokalemia (potassium 3.3 mmol/L). Bedside ultrasound performed in prone position showed a well-circumscribed fluid-filled structure (Fig. 1). CT scan of the abdomen and pelvis with IV contrast revealed a posterior left abdominal wall hernia through the inferior lumbar triangle at the L3-L4 level measuring 2.6 cm containing a single loop of fluid-filled nondistended small bowel (Figs. 2 and 3). Fluid-filled mildly distended small bowel loops consistent with partial small bowel obstruction were seen in the left upper quadrant.

The patient's pain and nausea were treated pharmacologically. The general surgeon evaluated the patient at bedside and recommended urgent reduction and repair of his inferior lumbar triangle hernia in the operating room. In surgery, a hernia sac containing incarcerated retroperitoneal fat was reduced, and the defect was closed using mesh utilizing a posterior open approach. The patient recovered uneventfully and was discharged on post-op day 1.

3. Discussion

Lumbar hernias are classified based on location and etiology. While they are more commonly located within the superior lumbar triangle, this patient had herniation through the inferior triangle, which is bordered by the iliac crest, external oblique muscle, and latissimus dorsi muscle [1-3]. About 20% of lumbar hernias are congenital, present

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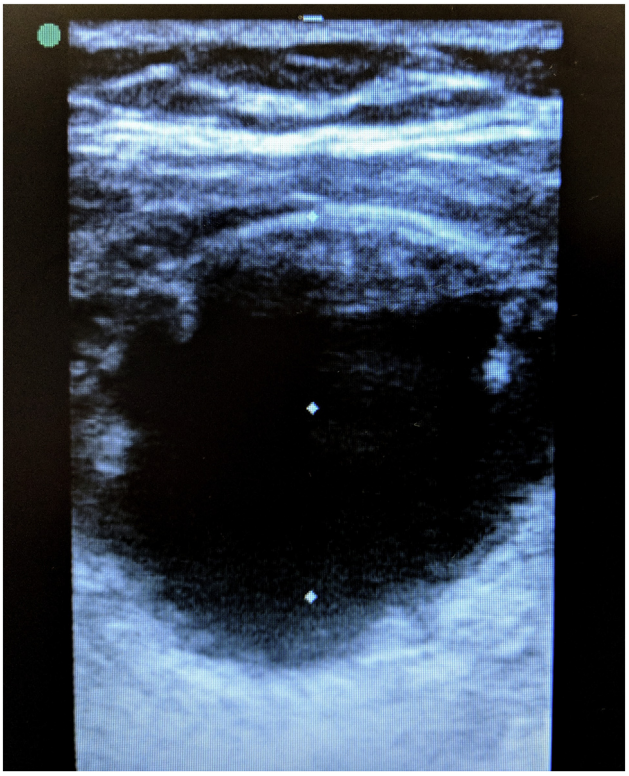

Fig. 1. Bedside ultrasound showing fluid-filled structure.

early in life, and may be associated with other birth defects [1,3]. The remaining 80% are acquired and further classified as either primary or secondary. Primary (spontaneous) hernias are often precipitated by increased intra-abdominal pressure and are associated with aging, extreme thinness, chronic disease, or denervation, all of which can lead to muscle atrophy in the flank. Secondary lumbar hernias are often associated with surgical incisions, trauma, or abscess [1-3]. Hernias may contain small bowel, colon, retroperitoneal fat, kidney, or spleen [1,5].

Clinical presentation for lumbar hernias is variable, but the most common symptoms are heaviness and flank pain [5]. Many develop gradually and present with a palpable mass that may increase in size

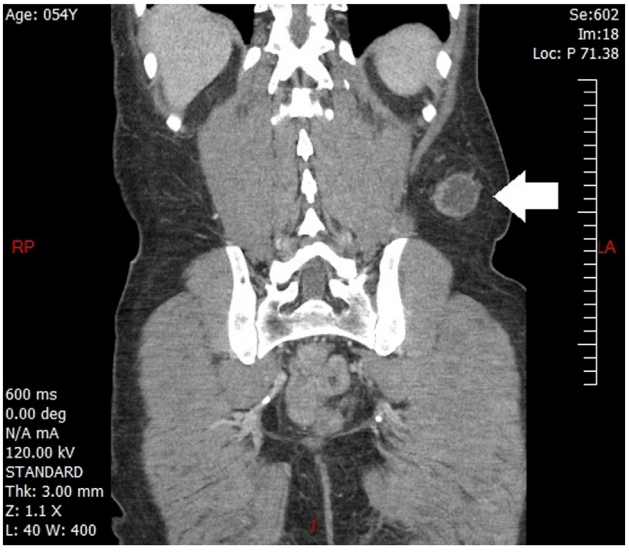

Fig. 3. CT scan of the abdomen coronal image.

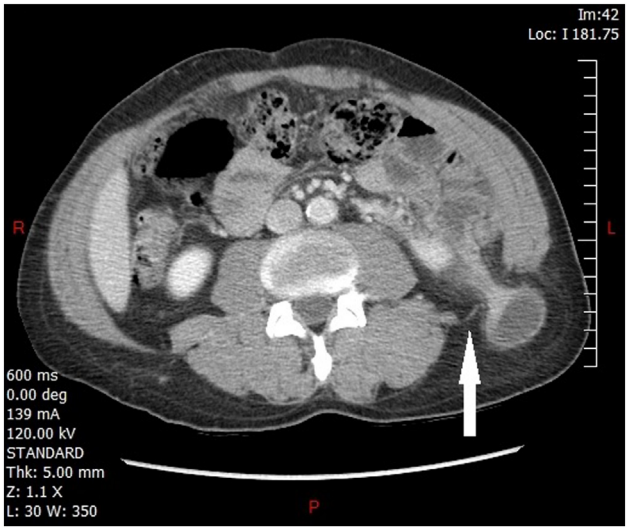

Fig. 2. CT scan of the abdomen axial image showing defect and small bowel herniation.

with coughing and Valsalva maneuver. Reduction, when possible, is best accomplished in the decubitus position with manual compression [2]. There is a predilection for left-sided hernias, and the reported risk of bowel incarceration from lumbar hernias is about 25% [1].

When history and physical exam raise concern for lumbar hernia, CT scan is the preferred modality for confirming the diagnoses as well as delineating the muscular and fascial layers and the contents within the hernia sac [5]. CT is also helpful in eliminating other differential diagnoses such as lipomas, fibromas, abscesses, hematomas, and muscle strains, none of which should cause bowel obstruction [2,3,5]. A chronic or reducible hernia may be referred for elective repair while emergent repair is indicated if there is evidence of bowel obstruction or incarceration.

4. Conclusion

Roughly 91% of lumbar hernias are non-emergent and represent a slowly enlarging mass caused by acquired weakness in the lumbar musculature [2]. The remaining 9% of hernias may develop rapidly and lead to incarceration, as in the case of this patient. In these instances, bedside ultrasound may prove a useful way of distinguishing a fluid-filled structure such as bowel from a solid mass, abscess, or hematoma, and may prompt an attempt at bedside reduction. Plain radiographs are of little use in narrowing the differential and only delay CT scan and surgical management. This patient's presentation underscored the importance of a thorough physical examination, bedside testing, appropriate expedited imaging, and prompt surgical consultation.

Competing interest

The authors have no competing interests to disclose.

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