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Bilateral Fat Containing Lumbar Hernia: A Case Report and Literature Review

Authors' Contribution:
Study Design A
Data Collection B
Statistical Analysis C
Data Interpretation D
Manuscript Preparation E
Literature Search F
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Conflict of interest: None declared

Patient: Female, 84
Final Diagnosis: Bilateral fat containing lumbar hernia
Symptoms: Abdominal pain
Medication: —
Clinical Procedure: —
Specialty: Surgery

Objective: Rare disease
Background: Lumbar hernias continue to be rare and challenging regarding optimal treatment protocols. While computed tomography scan is considered the best imaging modality for assessment, we think there is a role for ultrasound in establishing a diagnosis seeking proper management and avoiding complications.
Case Report: We present the case of an 84-year-old Saudi female who was known to have multiple chronic illnesses with bilateral flank swellings that were diagnosed as bilateral noncomplicated lumbar hernias which was treated conservatively with no complications.
Conclusions: Since the reported case is rarely encountered by surgeons, a low threshold to diagnosis is required. Finally, there is no consensus on management, and further studies to further investigate lumbar hernias are needed.

MeSH Keywords: Hernia • Hernia, Abdominal • Hernia, Ventral

Full-text PDF: <https://www.amjcaserep.com/abstract/index/idArt/917273>

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Background

A hernia is a general term derived from the Greek word “hernios”, which means “budding” which is a protrusion of a tissue through the wall of the cavity in which it is normally contained. Hernia contents can be a tissue or an organ, such as bowel, fat, or other. Hernias come in several types including lumbar hernia which are rarely encountered. Around 300 lumbar hernia cases have been reported in the literature. This accounts for less than 1.5% of all abdominal hernias. While most reports describe unilateral lumbar hernia, very few reports discuss bilateral lumbar hernia. Traumatic lumbar hernia is the least encountered, with less than 100 cases being reported. Since lumbar hernia cases are uncommon, general surgeons rarely encounter and manage them. Thus, in order to establish the diagnosis and formulate proper management, a high suspicion index is needed. This is essential to avoid the significant risk of complications, since 25% will become incarcerated and 8% strangulated [1–4].

Acquired lumbar hernia is the most common type which accounts for 80% of cases, while the congenital type accounts for 20%. The acquired type is further divided into primary (55%) and secondary (25%) that follows surgery, trauma, or inflammation. The most susceptible sites for lumbar hernia are the superior (which is the most common) and inferior lumbar triangles (posterolateral abdominal wall). Lumbar hernias usually present with low back pain significantly away from the palpable hernia. Small hernias may be asymptomatic. Mostly lumbar hernias are misdiagnosed with subcutaneous lipoma. To date, still, there is no consensus on the best way for managing lumbar hernias [2,3,5,6].

We report a case of bilateral primary acquired superior lumbar hernias in a senior Saudi female patient which was treated conservatively since the patient was not interested in surgical repair. A literature review was included since this type of hernia is rarely encountered.

Case Report

We present an 84-year-old Saudi female patient with a body mass index of 27.06 kg/m². She was known to have type II diabetes mellitus, hypertension, coronary artery disease (18-year status of post coronary angioplasty), osteoporosis, osteoarthritis, dyslipidemia, peptic ulcer disease, chronic obstructive pulmonary disease (centrilobular emphysema), left ventricular failure, stage III chronic kidney disease, and cervical disc disease. She had a laparoscopic cholecystectomy 20 years ago.

She presented to the Emergency Department with a 2-day history of gradual, progressive, left upper quadrant abdominal pain radiating to the left lower quadrant. No aggravating or



Figure 1. A swelling arises from the left lumbar region just below the last rib, more prominent while in the sitting position.

relieving factors were detected. There was no change of bowel habits, passing gasses with no other associated symptoms. Further history revealed a longstanding swelling on the left flank that has been slowly increasing in size over the last 40 years. She had lifted a heavy object directly before the swelling developed, but she denied any history of trauma. Initially she had some local discomfort and tightness for which she applied warm compressors. Five years ago, surgery was suggested but she refused. Upon physical examination, she looked well, with low functional status. Abdominal examination showed mild abdominal discomfort over the left side of the abdomen, with no signs of peritoneal irritation. There was a soft, round, movable, nontender swelling with a diameter of around 5 cm in the left lumbar area (the left superior lumbar triangle) directly below the rib number 12, with no changes in the skin. It was reducible and nonpulsatile with audible bowel sounds on auscultation of the lump that was more obvious and prominent while the patient was sitting (Figure 1). Routine laboratory tests showed a normal range. A computed tomographic scan of the abdomen revealed bilateral lateral wall (lumbar) defects (larger on the left side) corresponding to the level of L2, both containing retroperitoneal fat but no bowel loops. The left hernia neck measured 22 mm and the right hernia neck measured 6 mm. There was no bowel dilatation with partially constipated large bowel (Figure 2). There was fat stranding in the left hernia suggestive of early strangulation but none on the right side. There was a debate between radiological and clinical findings since the hernia contained bowel based on the clinical examination, but the radiological examination showed fat contents. Based on the radiological findings, a diagnosis of bilateral lumbar hernias was made.

Based on the clinical presentation, we recommended surgical repair. However, the patient elected to avoid surgery.

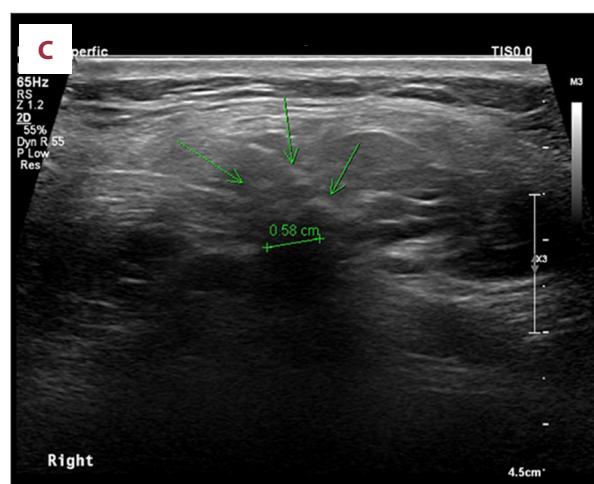
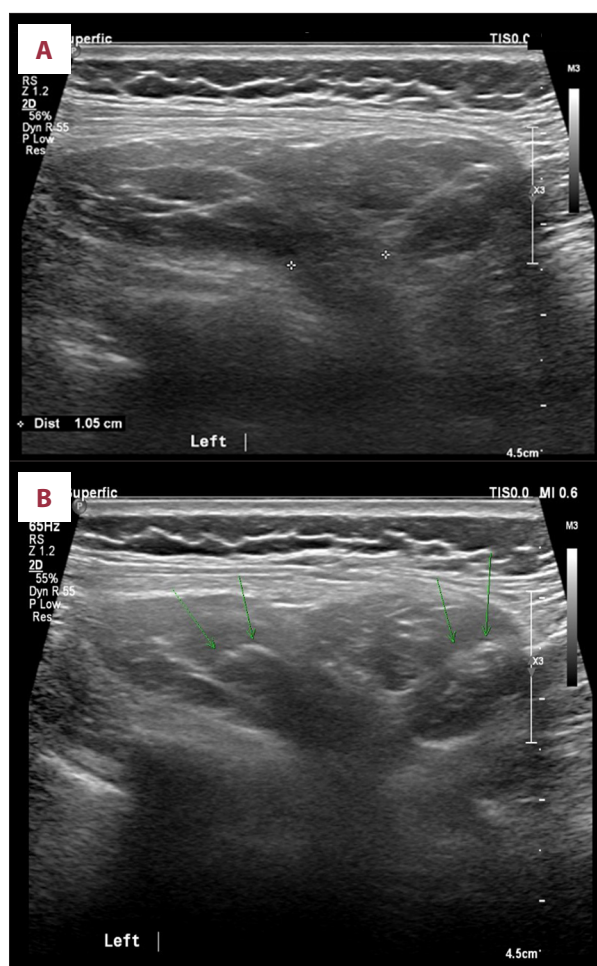


Figure 2. Lumbar ultrasound at rest (A) and during sitting position (B, C) showing separation of the muscle with herniation of fat and the bowel loops seen during the sitting position (arrows indicate the bowel).

The patient was then observed closely. Pain and swelling on the left side disappeared spontaneously. She was discharged after 48 hours. She was reevaluated after 2 weeks and was doing well. Ultrasound of the swelling in the supine position with straining as well as in the sitting position proved the presence of bowel in the hernia (Figure 3). However, during regular follow-up (1 month and 2 months after discharge), the patient was doing well, tolerating oral intake of food with no active complaint.

Discussion

It is known that surgery is the leading cause of secondary lumbar hernias. This is evident through latissimus dorsi muscle transplantation, iliac bone graft harvesting drainage of abscesses, lumbar incision, and nephrectomy. This is usually seen in middle age and elderly patients. While increased intra-abdominal pressure is considered a high-risk factor for all hernias, our patient reported heavy object lifting and had chronic obstructive pulmonary disease. A lumbar hernia may contain different intraperitoneal organs or extra peritoneal fat [3,7,9].

A painless lumbar swelling is the most common complaint. Less commonly, patients will be presented with backache, intercostal neuralgia, bowel obstruction, hydronephrosis, and hydroureter [3,10,11]. Our patient presented with left upper abdominal pain.

A good orientation about the anatomy of the lumbar region is the cornerstone in lumbar hernia diagnosis as it consists mainly of 2 lumbar triangles, the superior inverted (SI) and inferior upright (IU). The SI (Grynfeltt) triangle (the most common site) is bordered by rib number 12 and the serratus posteroinferior muscle superiorly, the erector spinae muscles medially, and the quadratus lumborum laterally. The floor of the triangle is composed of the transversalis fascia (more susceptible to herniation), and the roof is the external oblique muscle. The IU (Petit's) triangle is bordered medially by the latissimus dorsi muscle, laterally by the external oblique, and inferiorly by the iliac crest. The lumbodorsal fascia forms the floor of IU as it extends from the aponeuroses related to the transversus abdominis and the internal oblique (Figure 4) [2,7].

Differential diagnosis of a lumbar swelling includes lumbar hernia, fibroma, lipoma, hematoma, retroperitoneal tumor, and abscess. Lumbar hernia is characterized by being reducible and more prominent with increased intra-abdominal pressure such as changing the position to sitting or standing. A contrast-enhanced computed tomography (CT) scan is the gold standard and essential examination for confirming the diagnosis of lumbar hernia as it shows protrusion and hernia sac through the musculature [1,3].

Generally, it is recommended to repair the lumbar hernia immediately because over time it has high tendency to increase in

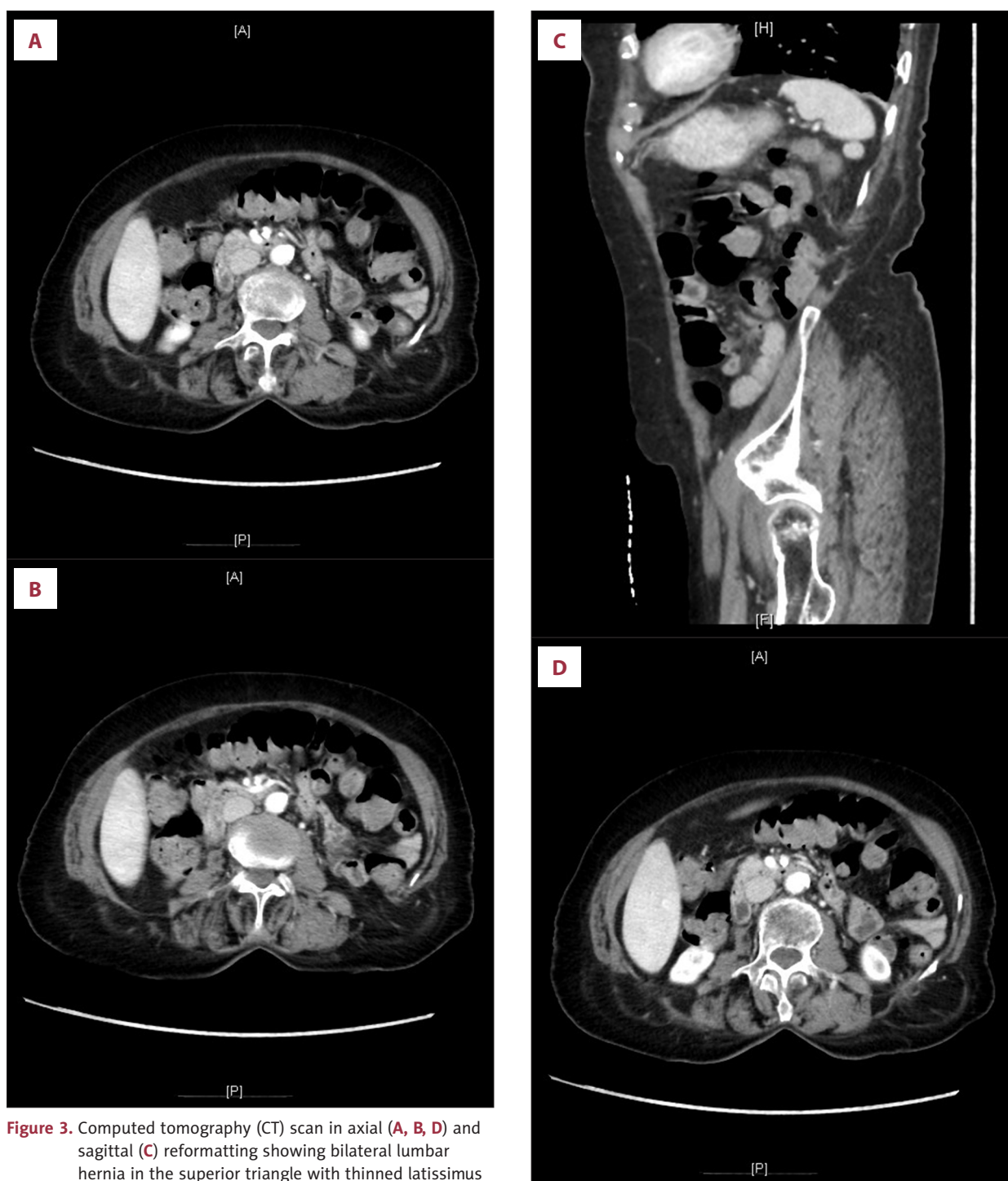


Figure 3. Computed tomography (CT) scan in axial (A, B, D) and sagittal (C) reformatting showing bilateral lumbar hernia in the superior triangle with thinned latissimus dorsi muscle and disrupted thoracolumbar fascia. Hernia sac contains extraperitoneal fat, with no bowel content in CT scan.

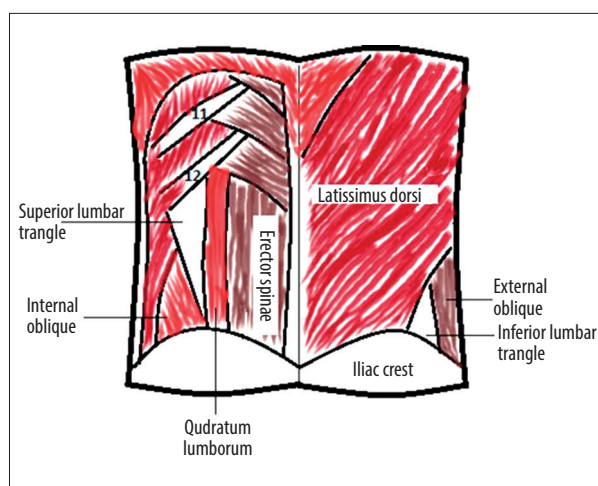


Figure 4. Illustration showing the anatomy of the lumbar triangles.

size and to become more symptomatic. Incarceration and rarely strangulation are other indications of surgical repair [12,13].

Currently, surgical repair is the mainstay of treatment and individualization of management is required since there is no consensus on repair among surgeons. As in our case, there is a window for conservative management. Moreover, there are many surgical approaches including open repairs and laparoscopic repairs. They are considered safe and have high effectiveness, and they can be done with or without the need for a mesh. The laparoscopic approach is further divided into transabdominal preperitoneal (TAPP) and totally extraperitoneal (TEP) approaches. Compared to TEP, TAPP is more commonly described as it is easier to perform and yields good results [3]. Despite the best of surgical repair, failures have been reported. Multiple factors should be considered while choosing the type of surgery including the weight of the patient, the size of hernia, bilateral versus unilateral, defect etiology, location, and contents [3,7,14].

Since 1888, when Owen reported the first case of lumbar hernia, the management of lumbar hernias has been constantly evolving. Dowd described in 1907 the LH repair using gluteus major and medius muscles as musculoaponeurotic flap. Thorek et al. in 1950 reported the first mesh repair of lumbar hernias using Tantalum mesh that was followed by various reported techniques combining mesh and muscle flaps. In 1996, a transabdominal laparoscopic approach was reported for the first time. From 1997 till 2018, only unilateral laparoscopic repair of spontaneous lumbar hernia using TEP and TAPP was reported till bilateral repair was first reported in 2018 by Huang et al. [3]. Huang et al. reported that, using the same technique of unilateral repair, there was success in performing the bilateral laparoscopic repair in three patients, where the postoperative pain

was mild, the length of stay was shorter, and complications were fewer when compared to open surgery [2,3].

Primary lumbar hernias having a defect measuring less than 2.5 cm in diameter (small hernias with no internal organs involvement or history of recurrence) can be repaired primarily without the use of mesh. A great tension will be created when primary repair is used in larger defects, which increases the risk of recurrence. Seeking a tension-free repair, a flap method was used that involves a flap from transversalis muscle and fascia, but it is known to be a complicated and technically challenging procedure [14,15]. Thus, the need for a foreign body was introduced which was a good advancement as tension-free open herniorrhaphy with a synthetic mesh lumbar hernia that is currently considered the most widely accepted surgery [3,16,17].

The most common indications to consider mesh repair are hernias of traumatic etiologies, larger size, and visceral involvement. Like hernias of the abdominal wall, the same principles regarding the type of mesh, mesh application, and fixation are applied to LH repair. In order to prevent post-surgery chronic pain, there should be more consideration to protect the nerves (e.g., the ilioinguinal nerve, genitofemoral nerve, lateral femoral cutaneous nerve) which are found close to the superior lumbar triangle [3,18]. To date, most cases of LH were treated by the open technique since tension-free closure or repair of parietal surface defects is not achievable using the laparoscopic technique [3,8].

Conclusions

Since lumbar swellings are rare and challenging, a low threshold is required to diagnose LH and management should be individualized. While CT scan is considered the gold standard imaging technique to establish diagnosis, we believe that it might be misleading with regard to the contents of the lumbar hernias. We recommend obtaining an ultrasound as an adjunct. Ultrasonography can be a dynamic imaging modality if performed while the patient is coughing or in the sitting position to establish the nature of the contents of lumbar hernia. There is no consensus on the management of lumbar hernias as there are multiple methods and options including primary repair, local tissue flaps, open mesh repair, or laparoscopic mesh repair. Although simple edge-to-edge herniorrhaphy is considered enough for small hernias repair, the use of mesh in most cases is recommended.

Conflict of interests

None.

References:

1. Huda F, Kumar A: Incisional hernia: Preliminary observations at a new institute. *Int Surg J*, 2017; 4: 2762–65
2. Day SJ, Myers PL, Bell DE: A rare case of a superior lumbar hernia secondary to penetrating injury. *Trauma Case Rep*, 2018; 14: 5–7
3. Huang DY, Pan L, Chen MY, Fang J: Laparoscopic repair via the transabdominal preperitoneal procedure for bilateral lumbar hernia: Three cases report and review of literature. *World J Clin Cases*, 2018; 6(10): 398–405
4. Mingolla GP, Amelio G: Lumbar hernia misdiagnosed as a subcutaneous lipoma: A case report. *J Med Case Rep*, 2009; 3: 9322
5. Bigolin AV, Rodrigues AP, Trevisan CG et al: Petit lumbar hernia – a double-layer technique for tension-free repair. *Int Surg*, 2014; 99(5): 556–59
6. Ahmed ST, Ranjan R, Saha SB, Singh B: Lumbar hernia: A diagnostic dilemma. *BMJ Case Rep*, 2014; 2014: bcr2013202085
7. Vagholkar K, Vagholkar S: Open approach to primary lumbar hernia repair: A lucid option. *Case Rep Surg*, 2017; 2017: 5839491
8. Reggio E, Sette MJ, Lemos R et al: Lumbar hernia following percutaneous nephrolithotomy. *Clinics (Sao Paulo)*, 2010; 65: 1061–62
9. Xu T, Zhang S, Wang H, Yu W: Lumbar hernia associated with chronic obstructive pulmonary disease (COPD). *Pak J Med Sci*, 2013; 29: 874–76
10. Hide IG, Pike EE, Uberoi R: Lumbar hernia: A rare cause of large bowel obstruction. *Postgrad Med J*, 1999; 75: 231–32
11. Willcox MJ: Lumbar herniation of kidney following iliac crest bone harvest. *Case Rep Surg*, 2016; 2016: 5365647
12. Cavallaro G, Sadighi A, Paparelli C et al: Anatomical and surgical considerations on lumbar hernias. *Am Surg*, 2009; 75: 1238–41
13. Burick AJ, Parascandola SA: Laparoscopic repair of a traumatic lumbar hernia: A case report. *J Laparoendosc Surg*, 1996; 6: 259–62
14. Teo KA, Burns E, Garcea G et al: Incarcerated small bowel within a spontaneous lumbar hernia. *Hernia*, 2010; 14: 539–41
15. Dowd CN: Congenital lumbar hernia, at the triangle of Petit. *Ann Surg*, 1907; 45: 245–48
16. Kim J, Oh MM, Kim JJ, Moon DG: Delayed repair of a traumatic lumbar hernia with renal rupture. *Am Surg*, 2012; 78: E295–96
17. Cavallaro G, Sadighi A, Miceli M et al: Primary lumbar hernia repair: The open approach. *Eur Surg Res*, 2007; 39: 88–92
18. Suarez S, Hernandez JD: Laparoscopic repair of a lumbar hernia: Report of a case and extensive review of the literature. *Surg Endosc*, 2013; 27: 3421–29