Case Report

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Incisional Hernia with Rare finding of Liver as Content: A Case Report

Surgery Section

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ABSTRACT

Lumbar incisional hernia is an uncommon complication that affects the abdominal wall integrity, accounting for approximately 3.5% of all cases. It typically occurs following open nephrectomy or aortic aneurysm repair surgeries. Although rare, lumbar hernias can lead to discomfort, aesthetic issues, or even intestinal obstruction. In extremely rare cases, lumbar herniation of the liver can occur. Here, the authors present a case of a 60-year-old female patient with liver herniation through a lumbar incisional hernia and a history of pyelolithotomy for renal calculi. The authors performed an open hernia repair with meshplasty. Lumbar incisional hernias are rare and still difficult to manage. Computed tomography is the diagnostic method of choice in the evaluation of the parietal wall defect to choose the appropriate therapeutic management. Surgical management modalities are still poorly codified, with no precise recommendations, and this is probably due to the relative rarity of the cases.

Keywords: Abdominal wall, Lumbar hernia, Meshplasty, Pyelolithotomy, Surgical repair

CASE REPORT

A 60-year-old female patient presented with complaints of swelling in the right lumbar region for eight months. There was no history of vomiting, abdominal pain, or distension. The swelling was initially small and had increased to its present size over the past three months, not associated with pain. She gave a history of surgery for right Staghorn renal calculi two years back. No history of wound dehiscence or infection postoperatively. She is a known case of diabetes mellitus and ischaemic heart disease, who has undergone Angioplasty in 2019.

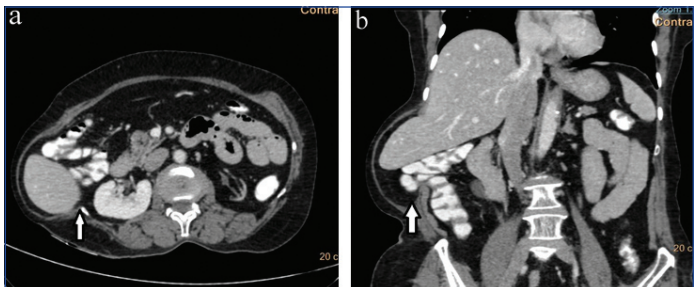
On general examination, the patient was vitally stable. On per abdominal examination, there was a huge swelling in the right lumbar region extending to the right hypochondrium and right iliac fossa. A scar of 10 cm was present in the right lumbar region. The cough impulse was positive [Table/Fig-1]. On palpation, the swelling was firm in consistency, with no local rise of temperature, and was reducible. The slip sign was negative. After reducing the hernia, the defect was felt, and the liver was palpable on deep inspiration.

[Table/Fig-1]: Swelling in the right lumbar region extending to the right hypochondrium.

Routine blood investigations were performed [Table/Fig-2]. Ultrasonography of the abdomen and pelvis revealed a large defect in the right lumbar region with herniation of the inferior part of the liver and perinephric fat with evidence of bilateral renal calculi. Contrast-enhanced computed tomography of the abdomen showed a mal-rotated right kidney with an extrarenal pelvis with calculi along with a defect in the right lateral abdominal wall at the pyelolithotomy site with the herniation of segments 5/6 of the liver, hepatic flexure of the transverse colon, and omental fat. The left kidney was atrophied [Table/Fig-3a,b].

Haemoglobin	13 gm/dL
TLC	7000/uL
Platelet count	311000/uL
Total bilirubin	0.37 mg/dL
Conjugated bilirubin	0.16 mg/dL
Unconjugated bilirubin	0.21 mg/dL
SGOT	21 U/lit
SGPT	21 U/lit
ALP	124 U/lit
Total protein	6.7 gm/dL
Serum Albumin	3.8 gm/dL
Urea	36 mg/dL
Creatinine	1.26 mg/dL
Sodium	137 mmol/lit
Potassium	4.81 mmol/lit
PT	12.9 secs
INR	1.02 ISI
HbA1c	9.8

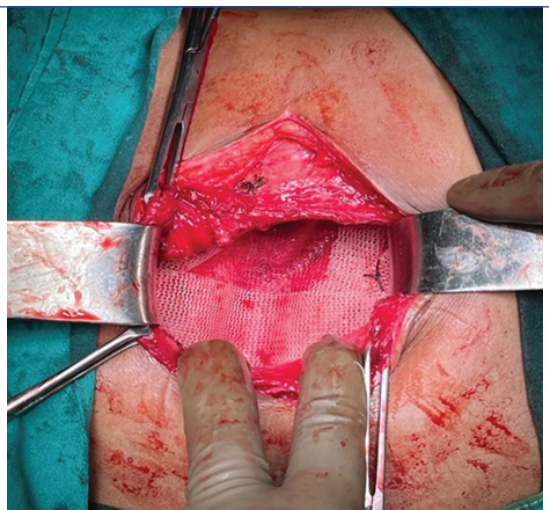
[Table/Fig-2]: Blood investigations performed on the patient.
TLC: Total leucocyte count; SGOT: Serum glutamic oxaloacetic transaminase; SGPT: Serum glutamate pyruvate transaminase; ALP: Alkaline phosphatase; PT: Prothrombin time; INR: International normalised ratio; HbA1c: Glycated haemoglobin



[Table/Fig-3]: a) Contrast Enhanced Computed Tomography (CECT) abdomen: arrow showing the site of defect of incisional hernia. b) Coronal section: Arrow represents herniation of the liver and hepatic flexure of the colon.

The patient was optimised for diabetes mellitus and ischaemic heart disease and was scheduled for open hernia repair with meshplasty. The right subcostal incision was made, and skin flaps were raised. A hernial defect of 10 cm was defined, and contents (liver segments 5 and 6, hepatic flexure) were reduced. The pre-peritoneal space was created upto the retroperitoneum [Table/Fig-4]. A polypropylene mesh was placed and fixed in the pre-peritoneal space, and a Romo vac drain was kept. An anatomical repair of the defect was performed [Table/Fig-5].

[Table/Fig-4]: A plane created to fix a mesh.



[Table/Fig-5]: Intraoperative fixation of mesh in the pre-peritoneal space.

The Romo vac drain was removed on postoperative day 4. The patient was discharged on day 15 after suture removal and was advised to follow-up. The patient was followed-up after two months, and the scar was healthy without any recurrence of hernia [Table/Fig-6].

[Table/Fig-6]: Postoperative image of the scar.

DISCUSSION

Liver herniation is a very rare clinical condition. Most cases of liver herniation occur as a result of congenital diaphragmatic hernias [1]. Acquired liver herniation is most commonly associated with blunt trauma and incisional herniation [2]. According to the literature, abdominal defects with liver herniation have been described in 13 reported cases, but out of these, herniation of the right lobe of the liver is reported in only one case [1]. There is also a single report of lumbar herniation containing segments of the right lobe of the liver [3]. Lumbar incisional hernias are postero-lateral body wall hernias where the bowel, omentum, or pre-peritoneal fat and liver protrude through the lumbar triangles. These hernias are often misdiagnosed and can lead to delayed treatment due to a lack of familiarity among surgeons. Lumbar incisional hernias have been mistaken for lipomas, muscle strains, fibromas, abscesses, and kidney tumours, resulting in increased morbidity due to incorrect diagnosis [4,5]. Given their rarity in the literature, radiologists rarely consider hernias as the cause of low back pain. Lumbar hernias are more prevalent in males aged 50-70 years and are more commonly found on the left side of the abdomen [6], possibly due to differences in the bilateral Costo-iliac spaces.

Lumbar hernias are rare hernias affecting the postero-lateral abdominal wall. They can be classified as congenital or acquired, with acquired hernias often occurring due to trauma or previous surgeries. Most cases of incisional lumbar hernias develop after flank surgeries such as nephrectomy or aortic aneurysm repairs [6]. Lumbar incisional hernias are delayed complications of abdominal surgery characterised by acquired herniation of abdominal contents through disrupted lumbar abdominal walls, which often have diffuse defects that are difficult to identify [7]. Among all acquired lumbar hernias, lumbar incisional hernias account for 31% of cases [8]. The prevalence of lumbar incisional hernias after lumbotomy ranges from 10 to 35.3%, but it decreases to 7% when an elective retroperitoneal approach is chosen [6].

The herniation of the liver or any part of it through the abdominal wall usually occurs very rarely. Cases reported were in association with other conditions such as abdominal incisional hernias, non-alcoholic steatohepatitis, after undergoing a Coronary Artery By-pass Graft (CABG) surgery procedure, or due to any direct trauma to the abdomen [9]. The development of liver herniation is also associated with risk factors such as obesity, old age, increased abdominal pressure, and weak abdominal wall [9].

In the present patient, a history of abdominal surgery leading to weakness of the abdominal wall was suspected to be the main cause of liver herniation. Herniation of the right lobe is associated with a previous surgery history and sometimes it is also associated with Budd-Chiari syndrome, whereas left lobe herniation, in contrast, is associated with the incarceration of the liver. Due to their relative rarity, the surgical management of lumbar incisional hernias poses a challenge [9].

The preferred diagnostic modality for liver herniation is CT scan as it provides detailed information about the extent of the lumbar defect and the presence of herniated abdominal organs [10]. It can differentiate between a hernia and muscle atrophy, which does not typically require surgical intervention [11].

Various repair techniques have been proposed, including simple suturing of the defect with or without muscle plasty or plication of the normal fascia, as well as laparoscopic approaches with different repair procedures [12]. However, no procedure has demonstrated a clear advantage over others due to the scarcity of these cases [13].

CONCLUSION(S)

Lumbar incisional hernias are rare and challenging to manage. Computed tomography is the preferred diagnostic method and should be performed in cases of flank swelling following lumbotomy

to differentiate between a hernia and muscle atrophy without a fascial defect. The surgical management of these hernias remains poorly standardised, with no specific recommendations. Herniation of the liver through the abdominal wall occurs very rarely and is usually associated with risk factors. Reducing the content of the hernia and proper placement of a prolene mesh will be appropriate management of incisional hernia.

REFERENCES

[1] Lakshmi HN, Saini D, Om P, Bagree R. A ventral incisional hernia with herniation of the left hepatic lobe and review of the literature. BMJ Case Rep. 2015;2015:bcr2014207162.
[2] Desir A, Ghaye B. CT of blunt diaphragmatic rupture. Radiographics. 2012;32(2):477-98.
[3] Salemis NS, Nisotakis K, Gourgiotis S, Tsohataridis E. Segmental liver incarceration through a recurrent incisional lumbar hernia. Hepatobiliary Pancreat Dis Int. 2007;6(4):442-44.
[4] Ahmed ST, Ranjan R, Saha SB, Singh B. Lumbar hernia: A diagnostic dilemma. BMJ Case Rep. 2014;2014:bcr2013202085.
[5] Mingolla GP, Amelio G. Lumbar hernia misdiagnosed as a subcutaneous lipoma: A case report. J Med Case Rep. 2009;3:9322. Doi: 10.1186/1752-1947-3-9322.
[6] Sharma P. Lumbar hernia. Med J Armed Forces India. 2009;65(2):178-79. Doi: 10.1016/S0377-1237(09)80140-8. Epub 2011 Jul 21. PMID: 27408232; PMCID: PMC4921421.
[7] Abrahamson J. Mechanisms of hernia formation. In: Bendavid R, et al, eds. Abdominal Wall Hernias. New York: Springer. 2001;133-38.
[8] Soto Delgado M, García Ureña MA, Velasco García M, Pedrero Márquez G. Lumbar eventration as complication of the lumbotomy in the flank: Review of our series. Actas Urol Esp. 2002;26(5):345-50.
[9] Moreno-Egea A, Baena EG, Calle MC, Martínez JAT, Albasini JLA. Controversies in the current management of lumbar hernias. Arch Surg. 2007;142(1):82-88.
[10] Renard Y, De Mestier L, Cagniet A, Demichel N, Marchand C, Meffert JL, et al. Open retromuscular large mesh reconstruction of lumbar incisional hernias including the atrophic muscular area. Hernia. 2017;21(3):341-49.
[11] Biswas S, Keddington J. Soft right chest wall swelling simulating lipoma following motor vehicle accident: Transdiaphragmatic intercostal hernia. A case report and review of literature. Hernia. 2008;12(5):539-43.
[12] Lichenstein IL. Repair of large diffuse lumbar hernias by an extraperitoneal binder technique. Am J Surg. 1986;151(4):501-04.
[13] Salameh JR, Salloum EJ. Lumbar incisional hernias: Diagnostic and management dilemma. JSLS. 2004;8(4):391-94.

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