



ORIGINAL RESEARCH PAPER

General Surgery

HERNIA OF THE FORGOTTEN TRIANGLE: A CASE REPORT ON THE DIAGNOSIS AND MANAGEMENT OF PRIMARY LUMBAR HERNIA

KEY WORDS: Lumbar hernia, Superior lumbar triangle, Laparoscopic repair, Transabdominal preperitoneal (TAPP), Minimally invasive surgery, Abdominal wall hernia.

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ABSTRACT	Primary lumbar hernia is an exceptionally rare entity, accounting for less than 2% of all abdominal wall hernias. Owing to its rarity and vague presentation, it is often misdiagnosed as a benign flank swelling. We report the case of a 70 year-old male presenting with a gradually enlarging, reducible swelling in the left lumbar region. Contrast-enhanced CT scan revealed a defect in the superior lumbar triangle with herniation of fat. The patient underwent laparoscopic transperitoneal mesh repair, achieving complete reduction and reinforcement of the defect. Postoperative recovery was uneventful, and the patient remains recurrence-free at 12-month follow-up. This case emphasizes the importance of considering lumbar hernia in the differential diagnosis of flank swellings and highlights laparoscopic mesh repair as a safe and durable treatment option.
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INTRODUCTION

Lumbar hernia is among the rarest abdominal wall hernias, constituting less than 2% of cases, with only about 350 reported worldwide to date. The first description was provided by Barbette of Amsterdam in 1672, followed by Garangeot in 1731, with the anatomical weak points later defined as Petit's triangle (inferior lumbar triangle) and Grynfeltt-Lesshaft's triangle (superior lumbar triangle), often referred to as the "forgotten triangles" of the posterior abdominal wall.

Lumbar hernias may be classified as primary (spontaneous, congenital, or acquired) or secondary (post-traumatic or post-surgical), with primary forms being exceedingly uncommon. Clinically, they may masquerade as lipomas, abscesses, or soft tissue tumors, leading to diagnostic delays. With the widespread use of computed tomography (CT), diagnosis has become more reliable, permitting accurate delineation of the defect and its contents.

Surgical repair is mandatory due to the risk of complications and recurrence. Historically, open repair with primary closure or mesh reinforcement was the standard approach. The advent of minimally invasive surgery transformed management: the first laparoscopic repair of a lumbar hernia was published by Heniford et al. in 1997, and since then laparoscopic techniques—both transperitoneal and extraperitoneal—have gained acceptance for their advantages of reduced pain, shorter hospitalization, and superior cosmesis.

We present a case of primary lumbar hernia through the superior lumbar triangle, managed successfully by laparoscopic mesh repair, underscoring the importance of cross-sectional imaging and minimally invasive techniques in the management of this rare entity.

Case Report

A 70-year-old male presented with a gradually enlarging, asymptomatic swelling in the left flank for the past 6 months. There was no history of trauma, prior surgery, or any comorbid illness. Examination revealed a nontender 4 × 4 cm, soft, reducible swelling in the superior lumbar region with an expansile cough impulse. No skin changes were noted. A contrast-enhanced CT (CECT) abdomen was obtained to confirm the diagnosis and delineate the defect. The CECT revealed a defect of size 2 cm in the left lumbar

region with herniation of fat as content.



Figure 1: Preoperative image showing the swelling in the left lumbar region with the patient in the left lateral (as seen from above).

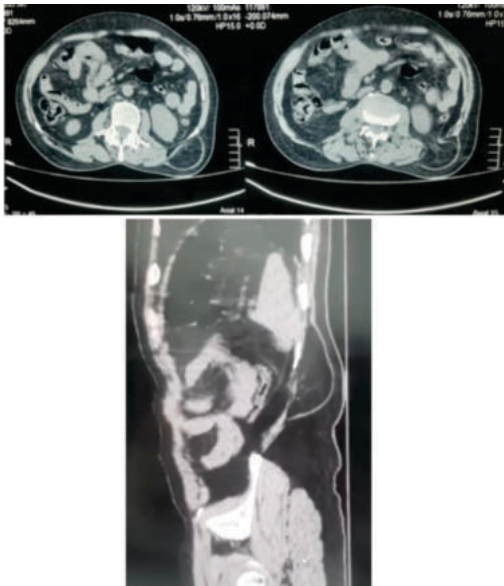


Figure 2: CT images showing the defect in the left lumbar region (Axial and sagittal sections).

Operative Technique

With the patient in endotracheal general anaesthesia, after antibiotic prophylaxis, under strict aseptic precautions, and patient in right lateral position, a 10 mm camera port and two 5 mm working ports were created by open technique as shown in the following schema.



Figure 3: Schema of port placement.

Dissection initiated by creating a peritoneal flap along the white line of Toldt. Hernial defect of size 2 x 2 cm noted in the Grynfeltt-Lesshaft's triangle (bounded by the lower border of the 12th rib, internal oblique muscle and quadratus lumborum) with fat as its content. Contents were reduced, with measures taken throughout the dissection to preserve the iliohypogastric and ilioinguinal nerves throughout the dissection. Defect closed with 2-0 barbed PDS suture. A 15 x 15 mm prolene mesh placed and fixed with 2-0 vicryl sutures. Peritoneal flaps closed with 2-0 barbed PDS sutures. Pneumoperitoneum released and port sites closed.

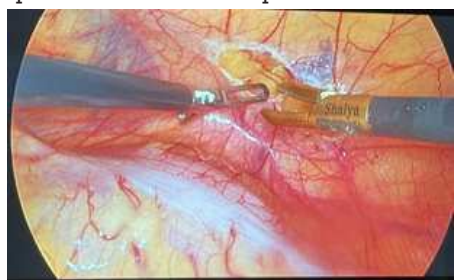


Figure 4: Initiation of dissection along the white line of Toldt.

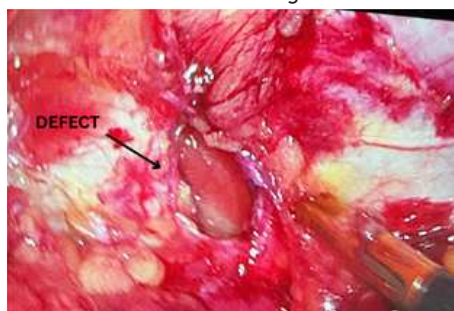


Figure 5: Defect in the superior lumbar triangle after complete dissection of the flap.

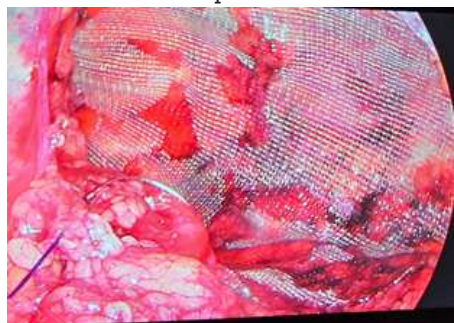


Figure 6: A 15 x 15 cm prolene mesh placed and fixed.



Figure 7: Final picture after closure of the defect.

Postoperative Course And Outcome

The patient had an uneventful post-operative recovery, resumed oral feeds on the first post-operative day, and was discharged on day 3. No immediate or delayed complications were noted. The patient was followed up clinically at regular intervals for a period of 12 months, with no evidence of recurrence. The patient remains asymptomatic and has returned to normal daily activities.

DISCUSSION

Primary lumbar hernias are among the rarest abdominal wall hernias, with fewer than 350 cases reported to date in the literature. They most commonly occur in the superior lumbar triangle of Grynfeltt, while the inferior triangle of Petit is less frequently involved. Because of their rarity and the atypical location, diagnosis is often delayed or missed. Cross-sectional imaging, particularly contrast-enhanced CT, is now considered the gold standard for confirmation, as it delineates the anatomical defect, hernia contents, and surrounding musculature. This imaging-based diagnosis has greatly improved preoperative planning and reduced intraoperative surprises.

Traditionally, lumbar hernias were managed by open repair, often with direct closure or reinforcement using synthetic mesh. However, the open approach is associated with large incisions, significant postoperative pain, and prolonged recovery. Since Heniford et al. first reported laparoscopic lumbar hernia repair in 1997, minimally invasive techniques have been increasingly adopted. Laparoscopy offers superior visualization of the anatomical planes, ability to dissect in confined spaces, and secure placement of large prosthetic meshes with wide overlap. In addition, patients experience reduced wound morbidity and faster return to normal activities compared with open repair.

Among laparoscopic techniques, both the transabdominal preperitoneal (TAPP) and totally extraperitoneal (TEP) approaches have been described. TEP avoids breaching the peritoneal cavity but is technically more demanding due to limited working space, especially in large or recurrent hernias. TAPP, on the other hand, provides excellent exposure of the hernia orifice and surrounding landmarks, with the additional advantage of inspecting intra-abdominal contents. Several authors have reported low recurrence rates and favorable outcomes with TAPP repair, provided that a sufficiently large mesh is used and fixed securely to cover potential weak zones.

Our case highlights the feasibility and safety of the TAPP approach in primary lumbar hernia repair. The patient, with no antecedent trauma or surgery, presented with a classic reducible flank swelling. CT confirmed the diagnosis, and laparoscopic TAPP repair was undertaken with adequate mesh reinforcement. The patient had an uneventful recovery, consistent with published reports emphasizing the advantages of minimally invasive repair. Going forward, larger multicenter series and long-term follow-up data are needed to establish standardized guidelines for the laparoscopic management of this uncommon hernia.

CONCLUSION

Laparoscopic TAPP repair offers a safe, effective, and minimally invasive option for the management of lumbar hernias, providing the benefits of reduced pain, shorter recovery, and precise mesh placement. This case represents one of the first TAPP lumbar hernia repairs performed at Rajiv Gandhi Government General Hospital, Madras Medical College—one of the largest tertiary centers in South India. Reporting such early institutional experiences is important in strengthening the existing literature on this rare entity and may contribute to the formulation of standardized treatment guidelines in the future.

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