

## CASE REPORT

## Laparoscopic transabdominal extraperitoneal mesh repair of lumbar hernia

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Lumbar hernias are rare posterolateral abdominal wall defects that may be congenital or acquired. There are two types of lumbar hernia, the superior lumbar hernia through Grynfeltt triangle, and the inferior lumbar hernia through Petit triangle. Many techniques have been described for the surgical repair of lumbar hernias including primary repair, local tissue flaps, and conventional mesh repair. But these open techniques require a large skin incision. We report a case of superior lumbar hernia, which was successfully repaired using a laparoscopic approach.

**Key Words:** Lumbar, Hernia, Laparoscopic surgery

### INTRODUCTION

Since de Garengoet described the first incarcerated hernia in 1731, lumbar hernia is a relatively rare defect, with fewer than 300 cases reported in the literature. It occurs through the defect of the posterolateral abdominal wall defect [1,2]. Surgical correction is the standard treatment of the lumbar hernia. There are several treatments. If the fascial defect is small, direct approximation of the muscle is sufficient. But fascial flap or mesh fixation is essential in cases of large defects [1-3]. After Heniford et al. [4] reported a laparoscopic approach for a primary lumbar hernia in 1997, several cases of surgery using laparoscopic or retroperitoneoscopic techniques have been successful [5,6]. We present a case of a primary lumbar hernia treated successfully by laparoscopic technique.

### CASE REPORT

A 70-year-old woman came to our clinic for a lump in her upper left posterior back, which suddenly developed 3 days prior. The patient complained of mild, dull pain on the lump. The patient's previous medical history stated type II diabetes mellitus and hypertension under medical treatment, but there was no associated history of surgery or trauma. On physical examination, she had a 5 × 3 cm sized, soft, movable and nontender mass just below the left 12th rib. A computed tomographic scan was performed and revealed the presence of a 1.5 cm sized superior lumbar hernia containing retroperitoneal fat (Fig. 1). After discussing the options, the patient requested a laparoscopic approach to repair her lumbar defect. Under general anesthesia, the patient was placed in a lateral position, left side up. We marked out the defect and the skin for incision. A

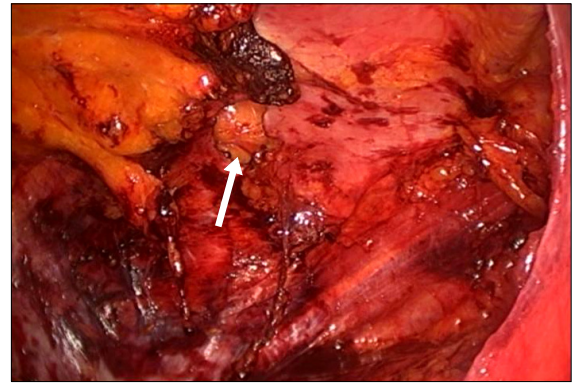
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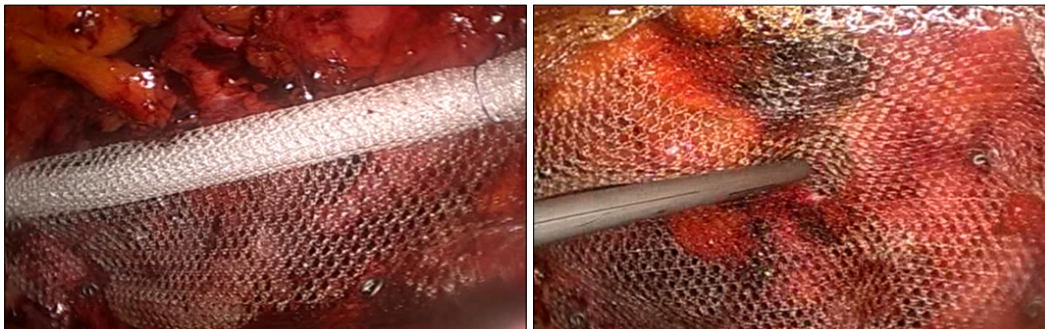
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**Fig. 1.** Abdominal computed tomography shows herniated retroperitoneal fat through left superior lumbar triangle.



**Fig. 2.** After completion of dissection, this picture shows a round abdominal wall defect.



**Fig. 3.** Anchoring of mesh begins at psoas muscle, then divide sutures, unroll mesh. Finally, mesh is entirely fixed by using spiral tackers.

10-mm trocar for camera was placed in the left upper abdomen and two operating 5-mm trocars were placed on either side under direct vision. The dissection was begun by incising the peritoneum, indicated by applying pressure from the outside. After dissecting the peritoneum and retroperitoneal fat, we defined the 1.5 cm sized hernial defect (Fig. 2). Care was given throughout the procedure to preserve nerves or vessels. The dissected area was larger than 15 × 15 cm in width with central defect. A 15 × 15 cm sized prolene mesh (Parietene, Tyco Healthcare, Mansfield, MA, USA) was used to reconstruct the defect. Leaving a 4 cm width from the one end, it was rolled and then sutured with 2 stitches to anchor it in place. It was introduced into the abdominal cavity via the 10-mm optical port. The mesh was then positioned in place. We began by tacking the inferior border of the mesh to the psoas muscle with spiral tacker (Protack, Tyco Healthcare). Once the mesh was anchored at this level, we divided the sutures holding the mesh and unrolled it. The mesh was fixed all around by spiral tackers (Fig. 3). Counterpressure on the abdominal

wall made for easy tacking during the procedure. The peritoneum was covered over the defect by using the spiral tacker. Finally, all trocars were removed and all wounds were closed. There were no perioperative complications. The patient did well after surgery, ambulating and eating a regular diet on postoperative day 1. The patient was discharged on postoperative day 5. Four months postoperatively, she had no evidence of recurrence.

## DISCUSSION

Lumbar hernias occur in two weak areas of the posterolateral abdominal wall: the superior lumbar triangle of Grynfeltt, which is a more common site, and the inferior lumbar triangle of Petit. The superior lumbar triangle is an inverted triangle bounded at the base by the 12th rib and lower edge of the serratus muscle; the posterior side by the sacrospinal muscle; the anterior by the internal oblique muscle; the roof by external oblique and latissimus dorsi;

and the floor is transversalis fascia. The inferior lumbar triangle is bordered by the crest of the iliac bone at the base, the external oblique muscle laterally, and the latissimus dorsi muscle medially; the floor is formed by the internal oblique muscle [7].

Lumbar hernias may be acquired or congenital. Acquired lumbar hernias are primary or spontaneous and secondary. Congenital lumbar hernias represent 20%, are usually seen in infants. Acquired lumbar hernias have a predilection for the left side, are more common in men, and are most common in patients between ages 50 and 70 [8-10].

Spontaneous herniation is usually the result of raised intraabdominal pressure and an acquired predisposition such as muscle atrophy due to polio, obesity, old age or debilitating disease, and it represents 55%. Twenty-five percentage of all lumbar hernias are secondary and caused by trauma, surgery or inflammation [9].

The most common symptom of lumbar hernia is a protruding lump in the flank, its size increases with activity, and it disappears when lying down. The patient may complain of a vague sense of discomfort, abdominal pain, and local tenderness. Bowel obstruction occurs in 25% and there is about a 10% chance of strangulation. In these cases, the patient manifests with nausea, vomiting, abdominal pain and distension. The hernia may contain retroperitoneal fat, kidney, colon or, less commonly, other intra-abdominal organs [9].

Lumbar hernias can be diagnosed by clinical symptomatology and physical examination. In many cases, the differential diagnosis of lumbar hernias include a lipoma, sarcoma, abscess, hematoma or renal tumor. Computed tomography is especially helpful in assessing the anatomical relationships of the lumbar area, identifying the contents, and ruling out tumors or other pathologies [7,8].

Early surgical correction is recommended of lumbar hernias in medically feasible patients because of the occurrence of complications such as incarceration or strangulation and the difficulty in surgery in advanced cases. In cases with small fascial defect, direct approximation of the muscle can be done. If there is a relatively large defect, fascial flap or mesh fixation is needed [1-3]. But these open approaches are quite traumatic and require long skin

incision. Recently, laparoscopic techniques have been adopted in various abdominal wall hernias including inguinal hernia. Burick and Parascandola [6] introduced the transabdominal laparoscopic approach in 1996 for a traumatic lumbar hernia. And Heniford et al. [4] reported laparoscopic lumbar hernia repair in 1997 for a primary lumbar hernia. Thereafter, several technical reports including laparoscopic or retroperitoneoscopic tension-free repair are found in the literature with promising results. But there are none yet published in our country. In addition to the usual advantages of a laparoscopic approach, like less pain, small wound and shorter hospital stay, it gives us excellent operative view. Thus, we can avoid the injury of vessels, nerves, or organs.

Although it is a rare disease, clinicians must be on alert for the lumbar hernia to avoid complications and misdiagnosis. We report a case of a primary lumbar hernia treated successfully by laparoscopic technique.

## CONFLICTS OF INTEREST

No potential conflict of interest relevant to this article was reported.

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