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Original Research Paper

General Surgery

LUMBAR HERNIA -POST TRAUMATIC SEQUALAE-TWO LAYER MESHPLASTY– A CASE REPORT

Dr.Sundar Prakash Sivalingam*	Associate Professor in Surgery, Department of General Surgery, Rajah Muthiah Medical College, Annamalai University, Tamilnadu, India. *Corresponding Author
Prof. Dr. J. Kabalimurthy	Professor in Surgery, Department of General Surgery, Rajah Muthiah Medical College, Annamalai University, Tamilnadu, India.
Dr. K. Kamal Kumar	Post-graduate in Surgery, Department of General Surgery, Rajah Muthiah Medical College, Annamalai University, Tamilnadu, India.

ABSTRACT Lumbar hernia arises through posterolateral abdominal wall defects either through superior lumbar triangle [Grynfeltt-Lesshaft] or inferior lumbar triangle [Petit]. Most of the lumbar hernias are secondary to trauma or previous surgery. Few cases have been reported in literature. We report a case of post traumatic right Inferior triangle hernia of Petit in a 29-year-old healthy male. The hernial defect was closed with 2 layered procedure - sublay and onlay with polypropylene mesh, owing to a big defect and thin abdominal wall muscles. Patient recovered well. Our two layered open meshplasty have been effective, safe and presents with good post-operative recovery. The patient was followed up regularly and there was no recurrence even after 1 year.

KEYWORDS : Lumbar hernia, Inferior triangle of Petit, Denervation, Two-layer meshplasty

INTRODUCTION:

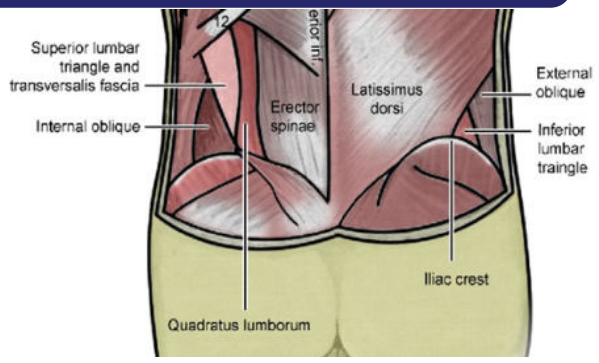
A lumbar hernia is defined as a protrusion of either extraperitoneal or intraperitoneal contents through a defect situated in the posterolateral abdominal wall. Barbette described this entity in 1672 itself. Later Petit and Grynfeltt described the inferior and superior lumbar triangles, respectively. As this type of hernia is rare, diagnosis and management of this hernia is always a challenge to the surgeon. The common misdiagnosis is lipoma[1].

Lumbar hernia is located in the thoracolumbar region and is classified as either congenital[2] or acquired, may be traumatic [3], or iatrogenic in origin. It accounts for <1.5% of all abdominal hernias most of these hernias are the acquired form and are categorized into two groups: congenital (20%) and acquired (80%). About 25% of acquired lumbar hernias have a traumatic or post-surgical etiology[4].

Primary lumbar hernias are very rare and commonly occur through the inferior lumbar triangle of Petit. Secondary lumbar hernias commonly occur through superior lumbar triangle of Grynfeltt–Lesshaft, mainly following renal operations, direct trauma to the lumbar region or due to denervation[5].

Traumatic lumbar hernia due to denervation causing weakness of abdominal wall muscle is a rare entity with only fewer cases reported so far in the world especially in the inferior triangle of Petit[6][7].

The lumbar hernia can occur through two triangles of weakness, superior (Grynfelt-Lesshaft) or inferior (Petit) as shown in Fig 1[8]. Inferior lumbar triangle is bordered by the iliac crest inferiorly, external oblique muscle laterally, latismus dorsi muscle medially. Superior lumbar triangle is an inverted triangle and the base is formed by 12th rib and the lower edge of the serrratus posterior inferior muscle, anterior boundary is formed by the internal oblique muscle and the roof is formed by external oblique and latissimus dorsi. Initially, it was believed that inferior lumbar hernias are more common but later studies have shown that superior triangle hernias are much more common.



CASE REPORT:

This paper details a case of secondary lumbar hernia that occurred after blunt abdominal injury and spinal injury.

The patient is a 29-year-old healthy male with no previous surgeries or co- morbidities after a history of road traffic accident, run over by a four-wheeler on the right side of abdomen 6 months back. He had bilateral rib fracture, hemo-pneumothorax, pneumo mediastinum, lung contusion, right kidney laceration and L1 – L5 transverse process fracture with blunt abdominal injury. He was treated and apparently became alright.

After 3 months of trauma, he presented with abdominal discomfort, back pain and swelling about 15x14x15 cms arising on right lumbar region of abdomen (Fig.1) on straining. Expansile cough impulse was positive in this patient. No history of chronic cough or similar swelling at the site earlier to trauma.

Fig.1 Pre-operative period

Clinically diagnosed as lumbar hernia, confirmed by Computerized Tomographic scan of Abdomen [9](Fig.2).

Fig.2 CT scan showing the right lumbar hernia

Under epi-spinal anesthesia, patient was put in left lateral position exposing the right lumbar region. A transverse lumbar incision was made about 2 cms from iliac crest. The hernia was identified as inferior lumbar triangle hernia without proper sac and pre peritoneal fat as content (Fig 3 and 4).

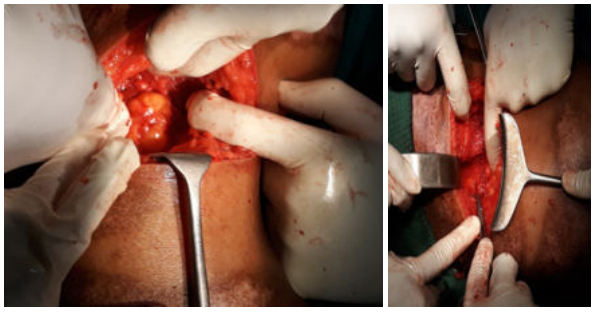


Fig 3 and 4: Showing inferior lumbar triangle hernia with preperitoneum as content

The pre-peritoneal fat was reduced and the defect was closed with absorbable suture material. A 6x 11 polypropylene mesh secured with transversalis fascia on the lateral aspect (Sub-lay) as shown in Fig 5, with under surface of internal oblique muscle on the medial aspect. It was fixed to the iliac crest inferiorly. As the defect was big and external oblique was very weak and thin, a reassurance second 15x15 cms polypropylene mesh was placed over the external oblique (Over-lay) as shown in Fig 6 and fixed [10]. The abdomen was closed in layers with a suction drain (Fig 7).

FIG 5: Sub-lay mesh

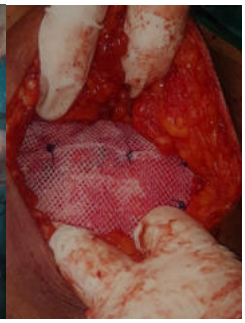


FIG 6: On-lay mesh

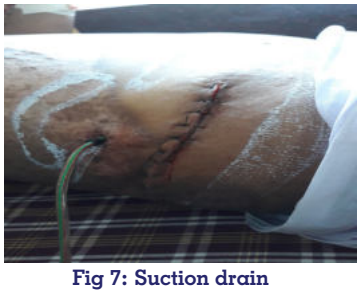


Fig 7: Suction drain

The immediate and later post-operative period was uneventful. He was treated with IV fluids, Antibiotics, Analgesics, Anti-inflammatories and supportive care. The drain was removed on post-operative day 8. He was discharged on post-operative day 9 (Fig 8).

Fig 8: On the day of discharge

The patient was followed up for 1 year at regular intervals and there was no recurrence of the hernia.

Ethical statement:
Not applicable for this article.

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Conflict of interest:
Two-layered polypropylene meshplasty will be ideal if the abdominal muscles are very weak especially to denervation with a big lumbar hernial defect.

CONCLUSION:

Although a rare pathology, knowledge of lumbar hernia is important to avoid misdiagnosis. In particular, a lumbar or flank mass should always raise suspicion of a lumbar hernia. Ultrasound and CT may confirm the diagnosis.

Appropriate surgical treatment should be planned on the basis of etiology and hernia size. Post traumatic lumbar hernia with lax musculature with a 2 layered meshplasty, as in our case, could be a better and safe technique.

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