CASE REPORT

Primary Grynfeltt's lumbar hernia- An uncommon occurrence

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Abstract

Lumbar hernia is an uncommon occurrence. It may occur through superior or inferior lumbar triangle. Hernia through superior lumbar triangle is more common. Treatment of lumbar hernia is essentially surgical with mesh repair, which may be done by open or laparoscopic techniques. Surgical management requires skill and expertise. We report a case of lumbar hernia through superior triangle (Grynfeltt's). A 57 years old lean and thin patient presented with swelling in left loin on coughing. Diagnosis was confirmed by ultrasonography. Hernia was repaired by on-lay application of polypropylene mesh. Patient was asymptomatic at follow-up visits.

Keywords: lumbar hernia, Grynfeltt's hernia, superior lumbar triangle, inferior lumbar triangle, mesh repair

Introduction

Lumbar hernia is an uncommon occurrence. A surgeon may come across with these hernias on very few occasions in his life time. For diagnosis, now newer Artificial Intelligence (AI) driven tools are being used. AI powered diagnostic tools are revolutionizing the way medical decisions are made [1]. AI tools provide fast and accurate results at lower costs and reduce/eliminate human errors [2]. Lumbar hernias account for approximately 2% of all abdominal wall hernias. A lumbar hernia is defined as a protrusion of intraperitoneal or extraperitoneal contents through a defect in the posterolateral abdominal wall. Two weak triangular-shaped abdominal wall areas have been described in the lumbar region: the inferior and the superior lumbar triangles [3]. Lumbar herniation may occur through superior lumbar triangle (Grynfeltt's hernia) or inferior lumbar triangle (Petit's hernia). Lumbar hernia may be congenital or acquired. A greater number of congenital lumbar hernias are found to occur in the superior triangle compared to the inferior triangle (42% versus 33%), and 25% of these hernias were further categorized as the 'diffuse' subtype that is not limited to either triangle due to congenital muscular defects or aplasia of the 12th rib [4]. Acquired hernias may be primary or secondary. We present a case of primary lumbar hernia through superior lumbar triangle.

Case Report

A 57-year-old lean and thin male patient was presented to surgical outdoor with history of swelling on left side of his back for last 1 year. Swelling appeared while coughing or straining only and disappeared after coughing. Swelling was small and asymptomatic initially. It gradually increased in size. He had no history of trauma or any surgical intervention at and around the local area.

On physical local examination, patient had slight retraction over left loin and a globular swelling appeared just below twelfth rib while coughing. On

deep respiration, there was further retraction at loin and then a swelling measuring approximately 6 × 8 cm appeared on coughing. Swelling disappeared a few moments after coughing (Figure 1). Vital parameters and general physical examination were within normal limits except that patient was lean and thin with poor built and muscle mass. On ultrasonography, a defect of approximately 2 × 4 cm was observed in the muscular planes of left lumbar region below the twelfth rib. Rest of the examination was within normal limits. All routine investigations were within normal limits. Hence patient was posted for open hernioplasty.

Figure 1: Lumbar hernia showing impulse on coughing on lying down position

After taking written informed consent, patient was given general anaesthesia and placed in right lateral position. Transverse incision was given below twelfth rib over the defect. After dissection of subcutaneous tissue, a defect of size approximately 2 × 4 cm was found in the muscular planes of superior lumbar triangle (Figure 2). On exploration of the defect, a hernial sac was found. Hernial sac was reduced and defect in the muscular planes was closed with silk suture. A large on-lay polypropylene mesh was placed over muscles and was fixed on to the periosteum of twelfth rib superiorly, iliac crest inferiorly and to the muscles medially and laterally, and thus tension free mesh repair was done (Figure 3). Post-operative period was uneventful. Suture removal was done on eighth post-operative day. Patient was asymptomatic at follow-up visits.

Figure 2: Defect in muscular planes

Figure 3: Tension free mesh repair

Discussion

The superior triangle is more consistently found in cadavers and is a more common site of herniation; however, the inferior lumbar triangle is often simply called the lumbar triangle, perhaps owing to its more superficial location and ease in demonstration (Figure 4) [5].

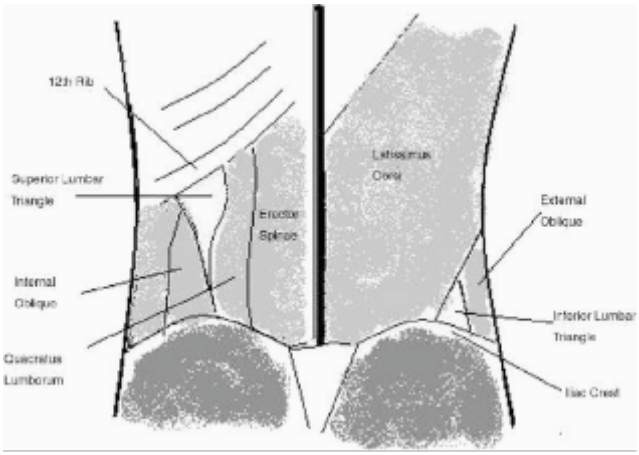

Figure 4: Superior and inferior lumbar triangles

Lumbar hernias are very uncommon entity, constituting less than 1.5% of all the abdominal wall hernias. It can be either congenital (20%) or acquired (80%) and occur in lumbar region of the posterior abdominal wall. About 25% of lumbar hernias have a traumatic or post-surgical aetiology, presenting a challenge for surgical management. De Garangeot reported the first known case of lumbar hernia in 1731, the hernia being reduced at autopsy [6]. Over the last four centuries, about 300 cases of primary lumbar hernias have been reported making it the rarest form of abdominal wall hernias [7]. A surgeon may come across with these hernias on very few occasions in his life time. Classification of lumbar hernia is not very consistent. Classifications proposed in the literature have a unifactorial, epidemiological nature, not a therapeutic orientation [8].

According to location

1. Superior lumbar (Grynfeltt-Lesshaft triangle, lumbocostal or costoiliac of Larrey);
2. Inferior lumbar (Petit's triangle, suprailiac of Huguier or lumboiliac);
3. Diffuse (Postoperative, costal incisional or traumatic).

According to contents

1. Extra-peritoneal (with no peritoneal sac);
2. Para-peritoneal (peritoneum sliding and adhering to the viscera);
3. Intra-peritoneal (with a complete peritoneal sac around the visceral contents).

According to aetiology

1. Congenital.
2. Acquired (traumatic, infectious or surgical).

Surgical treatment of lumbar hernias is always recommended because of the risks of entrapment and strangulation. There is still ongoing discussion regarding which is the best surgical technique to be employed. It has been described that approximation of the limits of the hernia may be sufficient for small hernias; while in most cases the use of mesh is recommended [9]. Various techniques of surgical repair of lumbar hernias have been described, both open and laparoscopic. At this site, application of mesh requires skill and expertise in order to create sufficient space for mesh and to ensure proper placement and fixation of the mesh. Mesh can be placed in pre-peritoneal space (under-lay) or on the muscles (on-lay). It is feasible to repair lumbar hernia under local anesthesia [10].

Conclusion

Lumbar hernia is an uncommon occurrence. It may occur through superior or inferior lumbar triangle. Hernia through superior lumbar triangle is more common. Treatment of lumbar hernia is essentially surgical with mesh repair, which may be done by open or laparoscopic techniques. Surgical management requires skill and expertise.

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