

Traumatic lumbar hernia with abdominal skin loss

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ABSTRACT

A traumatic lumbar hernia is a rare entity with <100 cases documented in the English literature. Here, we report the case of a 45-year-old man presented with severe abdominal trauma due to two-wheeler road traffic accident. There was a loss of the loin skin, the abdominal muscles severed from the attachment of the iliac crest exposing the cecum and degloving skin extending along the backup to the scapula. He underwent serial debridement to optimize the wound and tensor fascia lata flap skin graft. He had the recurrence of a hernia at 5-month follow-up; for which, he did not want any further surgical interventions. Autologous tissue cover and negative-pressure wound therapy can be considered for cover in a heavily exuding wound.

Key words: Lumbar hernia, Negative-pressure wound therapy, Tensor fascia lata flap, Trauma

A lumbar hernia is a rare disease which can be either congenital or acquired. The acquired variety can be primary where a spontaneous lumbar hernia is seen, while secondary lumbar hernias are either due to surgery or trauma [1]. The secondary surgical lumbar hernias are commonly seen after renal surgery and along the loin incision line. They usually present as a herniation of the ascending colon or the kidney and the treatment would commonly be a mesh repair. Traumatic secondary lumbar hernias are not seen commonly, and till now, <100 cases have been reported in the English literature [2]. They present with a pin in the region and are usually missed unless a scan is done. There will be avulsion of the abdominal muscles from the iliac crest.

The mainstay of treatment is to reduce a hernia and support the wall with mesh by either laparoscopic or open approach. The use of mesh is better avoided in cases with infection or contamination or heavily exuding wound. The use of autologous tissue for the coverage is better tolerated in such cases.

CASE REPORT

An obese patient with body mass index >31, aged 45 years presented to OPD with complaints of swelling in the right flank for the past 1 month and fever for 1 week. He gave a history of a road traffic accident and was allegedly run over by a truck 1 month before.

Then, the patient came to our hospital. On examination, the patient has stable vitals. He had a fever as well as a necrotic patch over the right flank with an abscess in the abdominal wall (Fig. 1). The patient underwent serial debridement and negative-pressure wound therapy (NPWT) to optimize the wound. There was a

degloving injury over the right thoracolumbar fascia extending up to the scapula. The patient had a lumbar hernia of Grade 5 in the lower triangle with ascending colon being the content. The muscles were separated from the iliac crest. The defect size was 40 cm × 35 cm of skin defect and 15 cm × 8 cm of lumbar hernia defect (Fig. 2).

Imaging showed the presence of a lumbar hernia with abdominal muscles severed from the iliac crest. He was diagnosed to have a traumatic lumbar hernia. Tensor fascia lata flap (30 cm × 15 cm) was harvested leaving about 8 cm of the skin from the upper margin of the knee. The musculocutaneous flap was raised up to the transverse branch of the circumflex iliac vessels. The flap was transposed to the defect to cover over the ascending colon and inset to the surrounding muscles. Split skin graft (SSG) was used to cover the rest of the area and the donor site. NPWT was used over the SSG and as well as the dead space in the paraspinal region. The skin graft take was good and the wound healed well (Fig. 3). The wound was completely healed at 2-month follow-up, with tensor fascia lata flap skin graft, and at 5-month follow-up, there was the recurrence of a hernia, but the patient refused further surgical intervention.

DISCUSSION

A lumbar hernia can be either due to congenital, traumatic, or surgical causes; however, lumbar hernia after trauma is a rare condition [3]. Till now, <300 cases of a lumbar hernia and <100 traumatic lumbar hernias have been reported in the English literature. In 2004, Burt *et al.* in their study have cited 63 cases of traumatic lumbar hernia before his publication [4].

A lumbar hernia can occur in the upper lumbar triangle or the lower lumbar triangle. Most commonly, it is seen in the lower

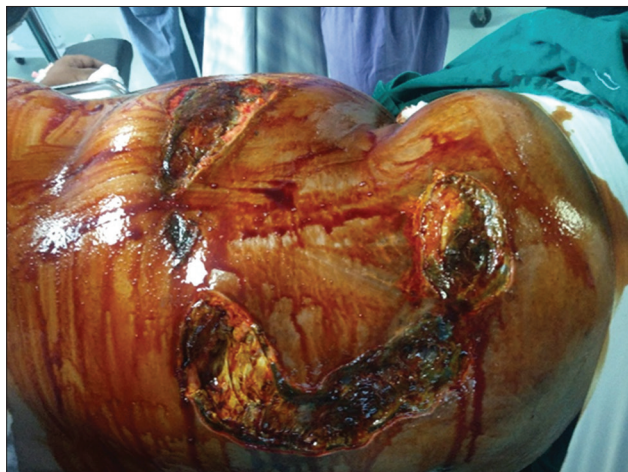


Figure 1: The abdomen at presentation with necrosis abdominal wall

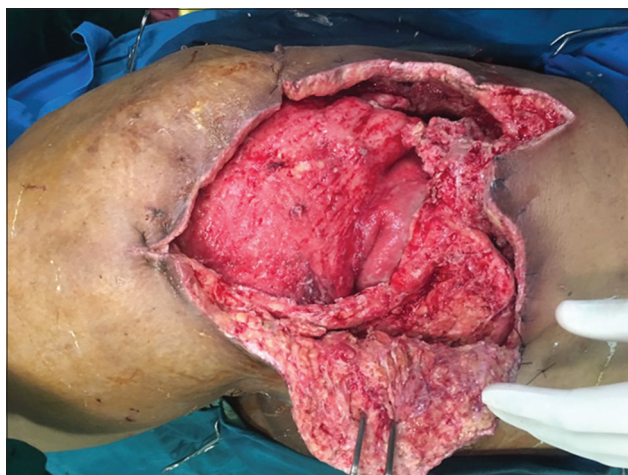


Figure 2: Wound optimized and we can see healthy wound and cecum exposed in the muscle defect



Figure 3: Completely healed wound at 2-month follow-up, with tensor fascia lata flap skin graft

triangle which is also named as Grynfeldt's triangle [3] and the same has been reported by Rosato *et al.* [5]. The boundaries of the lumbar triangle are the 12th rib superiorly, erector spinae medially, external oblique laterally, and iliac crest inferiorly [3]. The inferior triangle or the Petit triangle is bounded by iliac crest inferiorly, latissimus dorsi medially, and external oblique

laterally [3]. Patients with swelling in the lumbar region may have a lipoma, fibroma, psoas abscess, sarcomas, etc. However, with a positive history of trauma, it would be necessary to rule out a hematoma. We may need to treat the hematomas early if it is not likely to be absorbed. These collections would eventually get infected to form an abscess. In the present case, the patient had developed an abscess as the collection was not drained and the dead tissues after the degloving episode were not debrided.

Blunt trauma is the most common cause of the traumatic lumbar hernia. A lumbar hernia is classified into four types as per the size of the defect [6]. The present case is of Type 4. The abdominal wall injuries are classified depending on the anatomy of the abdominal wall. The present case can be classified as Grade 5 abdominal wall injury with loss of skin and rupture of all muscle layers of the abdominal wall [7].

Most commonly, traumatic lumbar hernias are treated by either open or more commonly by laparoscopic placement of mesh or free fascia lata graft to reconstruct the hernia defect and further buttressed with prosthetic mesh [8] or repaired using suturing anchors [9]. Welti-Eudel's technique of repair proposed that the sacrospinalis fascia is raised and sutured to the transversus abdominis and the internal oblique. A prosthetic mesh is placed between this fascia and the external oblique muscle [10]. However, placement of the mesh is not recommended in infected cases. Resurfacing these defects with flaps are necessary to facilitate placement of mesh at a later date. Hence, we used a tensor fascia lata flap for reconstruction. The flap being an autogenous tissue is better tolerated in places of infection. Although the fascia lata is a strong material, we had a recurrence. The recurrence can be treated using a mesh after the flap settles or complete wound healing has occurred.

NPWT is useful in optimizing the wound, obliterating the dead space, and decreasing the secretion. Negative-pressure dressing was used at a negative-pressure of 125 mmHg over wound and 75 mmHg over the skin graft as per recommendation. The tensor fascia lata flap is a Mathes and Nahai Type I muscle and is based on the transverse branch of lateral circumflex iliac vessels which enter the flap at around 10 cm from the anterior superior iliac spine. This sturdy flap withstood the transposition of 180 degrees. Tensor fascia lata flap is indicated in the reconstruction of a hernia including ventral hernias and inguinal hernias. The fascia in the flap is tough autogenous support. We were able to reconstruct the hernia defect as well as a skin cover over the defect with tensor fascia lata flap. Rest of the non-critical wound was covered with an SSG.

CONCLUSION

A traumatic lumbar hernia is a rare entity. Tensor fascia lata flap is an autogenous method of reconstruction and can be used to reconstruct the lower lumbar hernia in cases where overlying skin is lost.

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