



BMH Med. J. 2023;10(3):62-66. **Case Report**

Inferior Lumbar Hernia Of Traumatic Origin

Ajith Kumar M

Starcare Hospital, Kozhikode, Kerala, India

Address for Correspondence: Dr. Ajith Kumar M GDMRD DNB, Senior Consultant Radiologist, Starcare Hospital, Kozhikode, Kerala, India. E-mail: akniramala@gmail.com

Abstract

An Inferior lumbar hernia is a rarely reported hernia. Its usual of age of presentation is 50-70 years and slight male preponderance is noted. Here I am representing a case of traumatic presentation of an inferior lumbar hernia following a vehicular accident. Hernia through the inferior lumbar triangle is also known as Petit's Hernia.

Keywords: inferior lumbar triangle, superior lumbar triangle, retroperitoneal and intraperitoneal fat

Introduction

Lumbar hernia of both categories, superficial Petit's or inferior lumbar hernia, and superior lumbar hernia are relatively rare in occurrence. The causative or the aetiological factors are classified as:

Congenital (20%)

Defects in the musculoskeletal system, are often present in infancy.
Associated with congenital malformations.

Primary Acquired (55%)

Without any specific causative factors.
With risk factors like extreme body habitus, chronic cough, and bronchitis, muscle weakness or atrophy, age, postoperative sepsis, severe strenuous physical activities.

Secondary Acquired (25%)

Following crushing, blunt or penetrating injuries to the abdomen.
Hepatic abscess.
Infected retroperitoneal hematoma.
Fracture of the iliac crest.
Infections of pelvic bones, ribs, or the lumbosacral fascia.

Contents of the hernia

1. Stomach.
2. Large/small bowel.
3. Omentum
4. Mesenteric.
5. Fat.
6. Ovary.
7. Kidney.
8. Spleen.

Case History

A middle aged person presented to the emergency department following a road traffic accident. He was conscious and his vitals were stable. He did not have any comorbidities in the past and was not on any medications.

A contrast CT scan was taken (**Figures 1a, b, c**). His left iliac crest was fractured and muscles of the anterior abdominal wall, the transverse abdominis, internal oblique, and external oblique, were traumatically avulsed, and his deepest back muscle, the quadratus lumborum was also traumatically avulsed, especially at its insertion site, that is the transverse process of L1 to L5 vertebral bodies and the 12th rib.

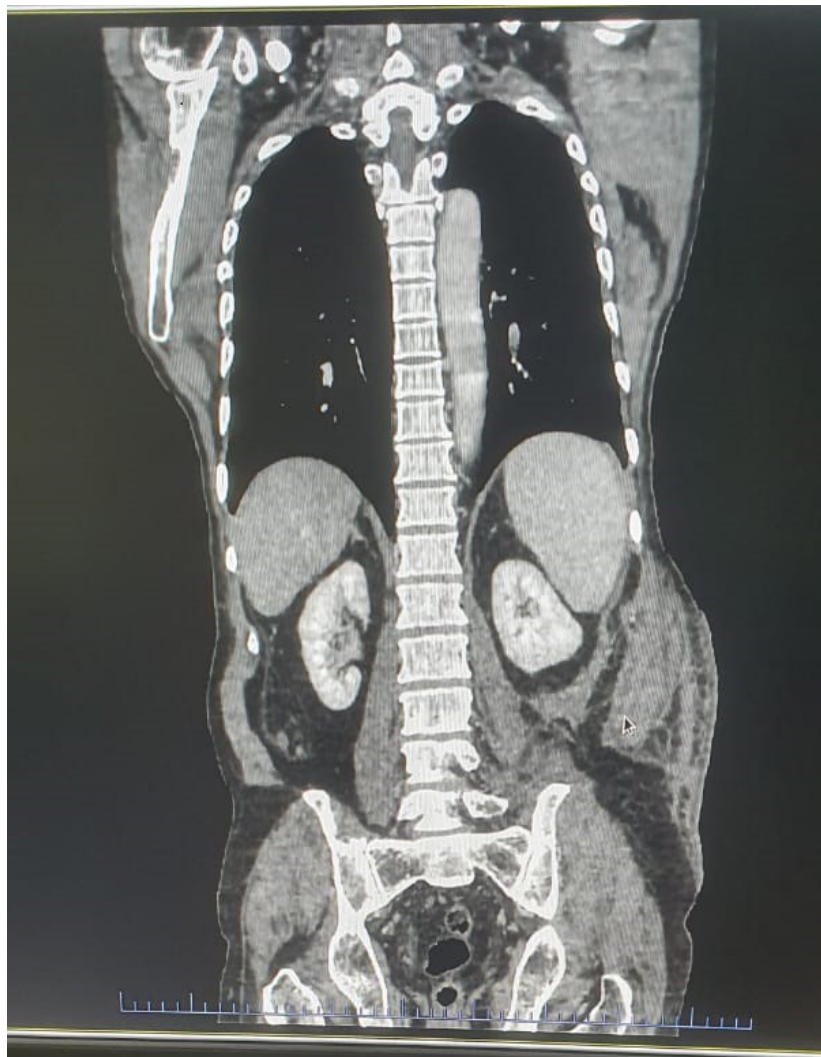


Figure 1a

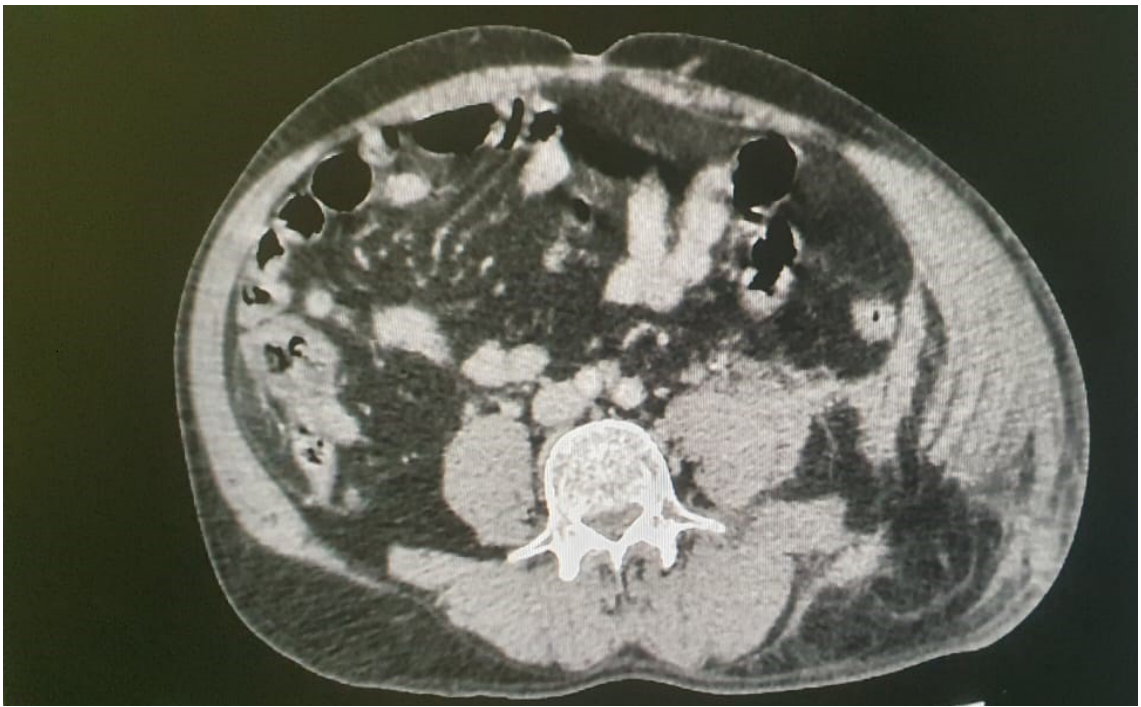


Figure 1b

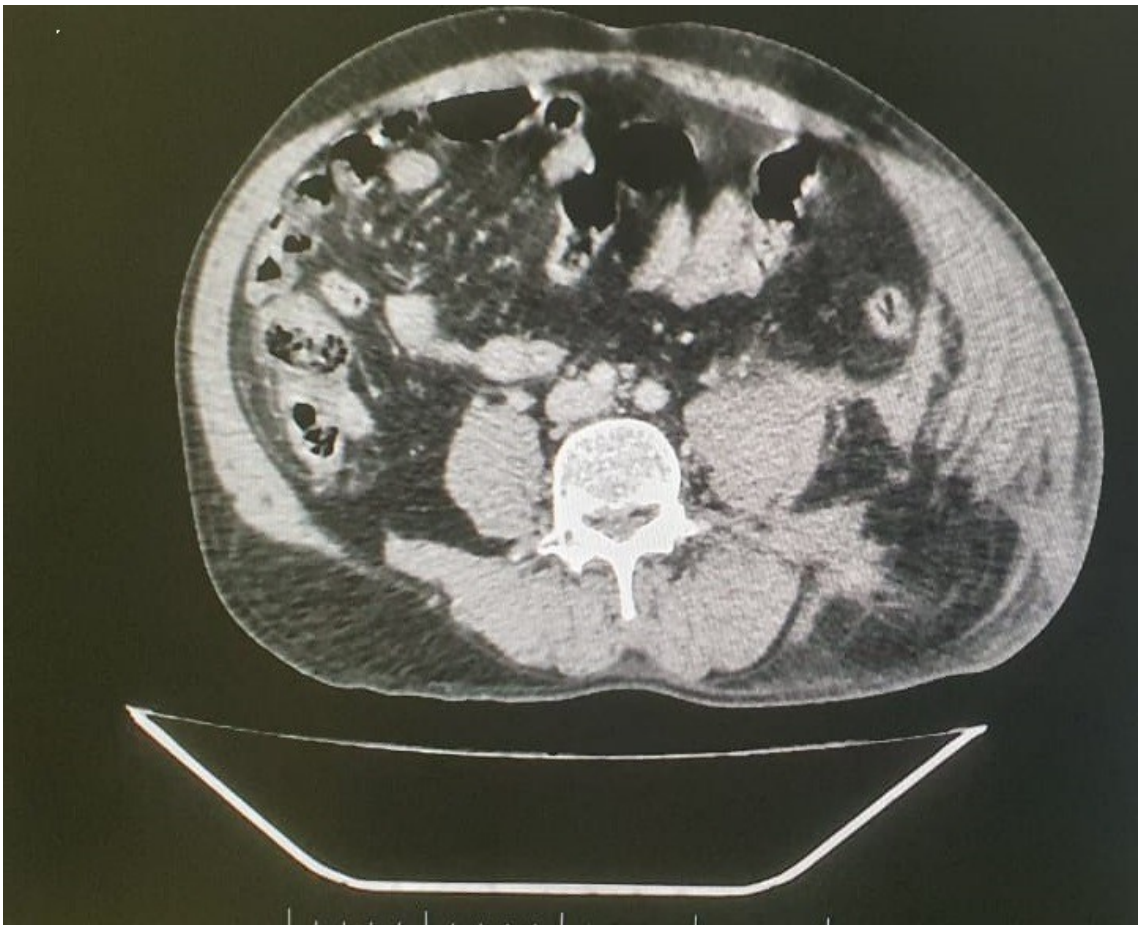


Figure 1c

The avulsion separation of the quadratus lumborum muscle produces a gap between the

retroperitoneal space and the inferior lumbar space. The posterior renal fascia was also separated. It creates a space for the herniation of retroperitoneal fat into the inferior lumbar space or the triangle. Hence traumatic creation of inferior lumbar hernia was established.

Discussion

Acute traumatic lumbar hernia is a rare entity and reported cases are few in number. Undetected cases of such types of hernia were common in the past. During the present era of radiological evaluation with CT, with a countable number of slices, the slices chart the benchmark evolution for the CT, it predicts the resolution and swiftness of study. It has become a dictum among surgical and emergency consultants to have an appropriate scan with CT which would ease out most of the perils that could have happened in a major vehicular accident.

In vehicular accidents, especially in four-wheelers, two things are happening, the shearing force creates a crush injury to the muscles of the anterior abdominal wall due to the seat belts and the sudden deceleration force inadvertently raises the intra-abdominal pressure. The thrust of the injury can cause either a muscle crush or an avulsion of muscles of the anterior abdominal wall at their insertion points [1].

Hernia happens at the site of muscle weakness, and lumbar hernia following acute abdominal trauma is a rarely reported phenomenon. In the posterolateral abdominal wall, there are two triangles, one is a superior lumbar triangle, the Grynfeltt-Lesshaft triangle, and the other one is an inferior lumbar triangle, Petit's triangle. Both these triangles are the areas of muscle weakness [4] and the prone site of lumbar hernias.

Other than traumatic origins, the hernia is also manifested following surgical interventions, like flank incisions, and surgical procedures in the iliac blade, like graft procedures. There are other multiple causative factors like the spontaneous development of lumbar hernia, following muscle weakness, congenital and acquired. Severe physical exercise is also one of the documented causative factors.

The thrust or the force that has been delivered to the anterior abdominal wall is quite enough to disrupt the anterior abdominal wall musculature, resulting in injuries to the abdominal viscus or solid organs of the abdomen. Most of the time, the major injuries would be taken care of initially, like searching for the injuries of vital organs, bowels, or vessels.

Bruises over the poster lateral aspect of the body, just above the iliac blade, are one of the reasons to investigate further to have the presence of lumbar hernias. Fast-speed CT scans of this era facilitate early detection of lumbar hernias in a traumatic event. If it is left undetected, long-term morbidity can follow like back ache and another constitutional problems. If the bowel is accidentally herniated, the chances of bowel incarceration is 25% and strangulation 10% [3].

The advent of high-speed multi-slice CT scans had revolutionized the management of acute abdominal trauma and conservative management is the rule in most cases. In case of solid organ injuries of liver, and spleen up to grade III (AAST) injuries are being managed in a conservative line.

CT scan is a foolproof method to assess the gravity of a lumbar hernia, it well addresses bony injuries, especially the ilium, and the array of muscle distribution and its possible disruptions if at all. It helps to detect the anatomy of the disrupted muscle layers, and the contents of the hernia, besides the other injuries to solid abdominal organs.

In the case of renal injuries, conservative management is the rule for localized parenchymal contusions, lacerations, or, intraparenchymal hemorrhages.

Acute traumatic lumbar hernia is an indication of laparotomy reported by Esposito and Fedorak [3], as there is a high incidence of involvement of hollow viscus and mesenteric injuries. Certain schools of thought advocated management in a conservative line, especially in asymptomatic cases [6].

Before the advent of CT, conventional X-rays were used to detect lumbar hernias, where oblique or lateral images of the abdomen would help us to detect the presence of gas-filled bowel loops outside the abdominal cavity [2].

Later when multi-slice CT [3,6,8] had taken over the diagnostic evaluation of such cases it proved to be a foolproof method to detect lumbar hernias, in a systematic way. It will depict the disrupted musculature, herniated bowel or fat, besides other organ injuries and intra-abdominal collection or hematoma.

Nowadays, traumatic injuries following vehicular accidents are much more common. Use of seat belts is a dictum now. Assessment of the cases according to the gravity of the situation is also important. Delay in assessment invariably leads to various comorbidities, which may sometimes take long time to present, that too with nonspecific characteristics.

References

1. Guly HR, Stewart IP. Traumatic hernia. J Trauma 1983 : 23..250-251.
2. Chan Vitan A. Traumatic abdominal wall hernia. A case report. J Med association Thai 1986 : 69..341-345.
3. Esposito TJ, Fedoraki traumatic lumbar hernia: case report and literature review. J trauma 1994:37:123-126.
4. Swartz WT. Lumbar hernia. In. Niyhus RE, eds. Hernia. Second edition. Philadelphia. Lippincott, 1978:409-426.
5. Baker ME, Weinerth JL, Andriani RT, Cohan RH, Dunnick NR. Lumbar hernia: diagnosis by CT. AJR 1987: 148:565-567.
6. Faroh SH, Racette CD, Lally JF, Wills JS, Mansoor A. Traumatic lumbar hernia. CT diagnosis AJR 1990: 154:757-759.
7. Payne DD, Resnicoff SA, States JD, Williams JS. Seatbelt abdominal wall muscular avulsion. J trauma 1973; 13:262-267.
8. Damsechen DD, Landercasper J, Cogbil TH, Stolee RT. Acute traumatic abdominal hernia: case reports. J trauma 1994; 36:273-276.
9. McCarthy MC, Lemmon GW. Traumatic lumbar hernia: seatbelt injury. J Trauma 1996: 40:121-122.
10. Lemire J, Early D. Intra-abdominal injuries caused by automobile seatbelts. JAMA 1977:201:735-737.
11. Doersch KB, Doxier WE. The seat-belt syndrome; seatbelt sign: intestinal and mesenteric injuries. Am J Surg 1968: 116:831-833.
12. Kaude J. Traumatic rupture of the abdominal wall with subcutaneous herniation of transverse colon and perforation of the small bowel. Br J radiol 1966 : 39:950-951.