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Acute appendicitis in an asymptomatic inferior lumbar hernia of Petit: A case report

Sankar Arveen, Thirugnanam Agila

Abstract

Surgeons occasionally encounter lumbar hernias in their career, and the diagnosis needs a high index of suspicion. Of lumbar hernias, inferior lumbar hernias are less frequently encountered. A young male presenting with features of acute appendicitis was taken up for emergency laparoscopic appendicectomy. Interestingly, the appendix was found incarcerated in the right inferior lumbar triangle. After completion of appendicectomy, the narrow hernia defect was primarily sutured without mesh reinforcement. We focused on recognizing the presence of such rare hernia in par with Amyand's hernia.

Keywords:

Appendicitis, case report, inferior lumbar hernia

Background

Lumbar hernias are rare, with only a few hundred cases been reported so far. It is understood that the presentation varies, and diagnosis of lumbar hernia itself warrants a high index of suspicion. Inferior lumbar hernias (Petit's hernia) are less frequently encountered anatomical defects than superior lumbar hernia. Petit's triangle is formed by the following boundaries: the iliac crest inferiorly forming the base of the triangle, the anterior border of the latissimus dorsi posteriorly, and the posterior border of the external oblique anteriorly. The floor of the triangle is the internal oblique muscle [Figure 1].^[1-3] Primary lumbar hernias are very rare and commonly occur through the inferior lumbar triangle of Petit. Secondary lumbar hernias commonly occur through the superior lumbar (Grynfeltt-Lesshaft) triangle, mainly following renal operations or direct trauma to the lumbar region. The hernial sac may contain retroperitoneal fat, kidney, colon or less commonly small bowel, omentum, ovary, spleen, or appendix.^[4]

Case Presentation

A young man of age 23 years (body mass index is 21.3 kg/m²) presented to the outpatient department with complaints of right lower abdominal pain, fever, and nausea for the past 5 days. He did not have any comorbidities and did not undergo any surgery in the past. On clinical examination, the patient had right iliac fossa tenderness and no palpable mass. Laboratory figures were suggestive of elevated leukocyte count with high neutrophilic count. Ultrasonography provided a direct diagnosis of acute appendicitis. The patient was taken up for emergency laparoscopic appendicectomy. An umbilical 5-mm camera port and two secondary working ports, one 10-mm port on the left spinoumbilical line and the other 5-mm port on the hypogastric region in the midline, were utilized with the patient positioned supine and slight left tilt. As it appeared to be a retrocecal appendix, the cecum and ascending colon were mobilized [Figure 2].

Department of Minimal Access Surgery, Vaidhya Hospital, Vridhachalam, Tamil Nadu, India

Address for correspondence:

Dr. Sankar Arveen,
Department of Minimal Access Surgery,
Vaidhya Hospital,
Vridhachalam 606001,
Tamil Nadu, India.
E-mail: arveens@gmail.com

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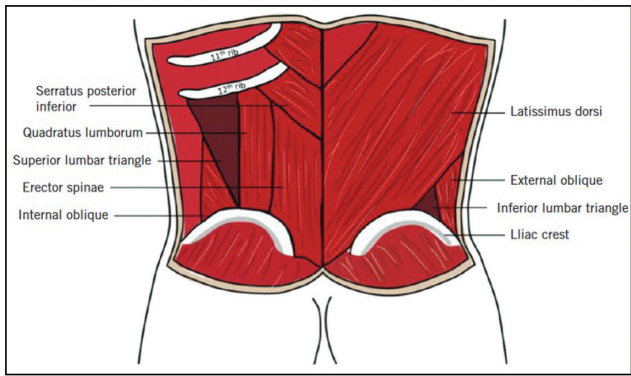


Figure 1: The posterior abdominal wall musculature and borders of the superior and inferior lumbar triangle

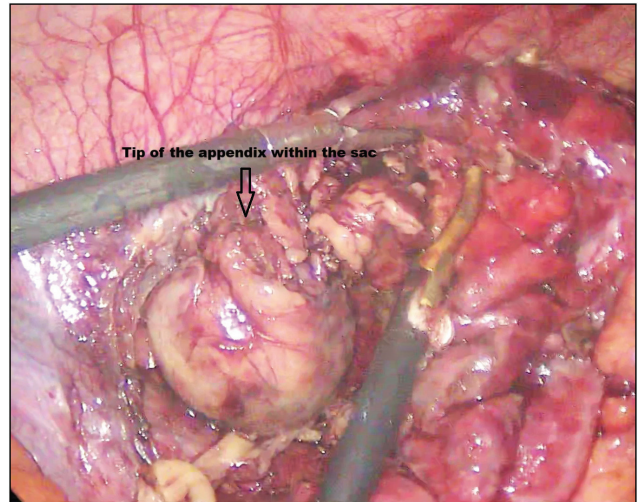


Figure 4: After delivering the incarcerated appendix from the inferior lumbar triangle

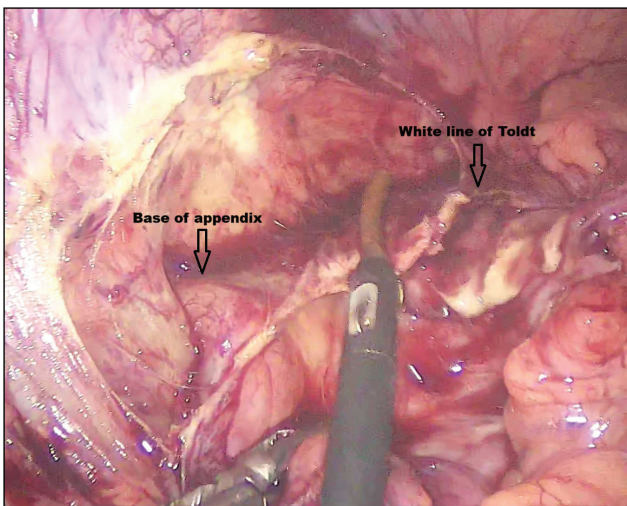


Figure 2: Mobilization of the ascending colon along the white line of Toldt. Notice the base of appendix identified by the confluence of tenia coli

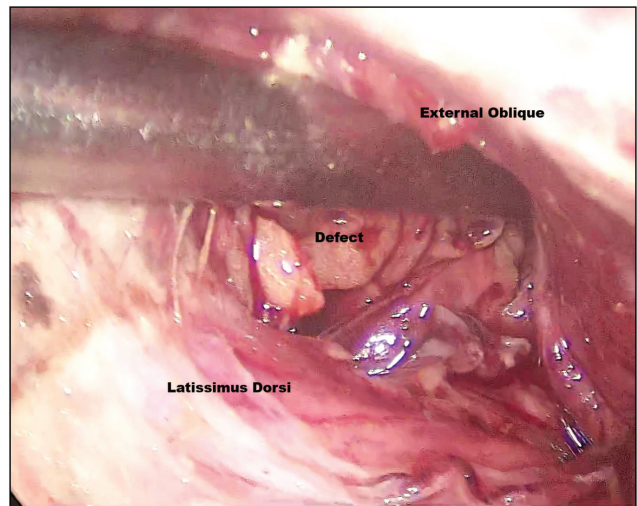


Figure 5: Defect in the right inferior lumbar triangle is visualized after releasing the incarcerated and inflamed appendix. Pre-peritoneal fat is also noted

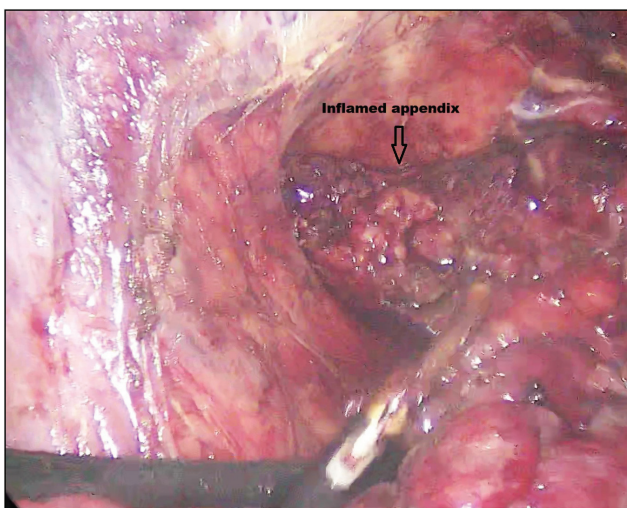


Figure 3: The body and the tip of the inflamed appendix incarcerated in the inferior lumbar triangle

The base of the appendix was identified at the confluence of tenia coli, but the tip was buried deeply in the abdominal musculature [Figure 3]. The inflamed tip of the appendix then released to found covered in a sac [Figure 4]. The defect in which the appendix herniated was then confirmed to be the right inferior lumbar triangle [Figure 5].

After completion of appendicectomy, the narrow defect of the lumbar triangle was primarily closed using 1-polyglactin (deferred using non-absorbable sutures to avoid a nidus for infection) interrupted intracorporeal sutures approximating the latissimus dorsi with external oblique [Figure 6]. The operation time was 70 min. The patient was discharged 36 h after surgery without any postoperative complications. At 6 months and 1 year follow-up, the patient remained asymptomatic.

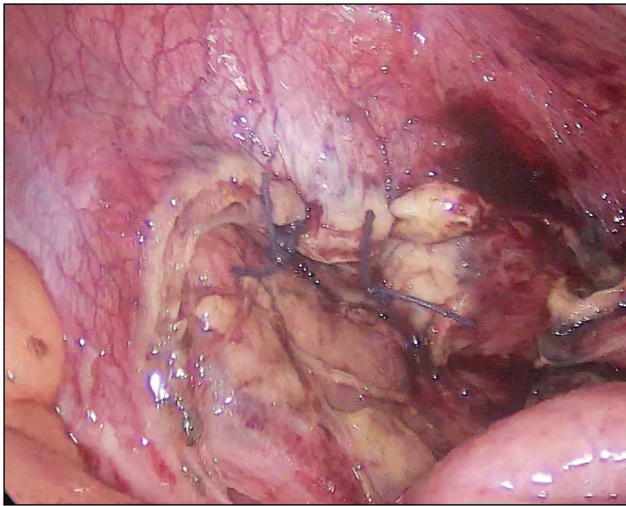


Figure 6: Primary closure of the defect done with the help of a slowly absorbable suture following completion of appendicectomy

Discussion

Petit's triangle was named after the French surgeon Jean-Louis Petit in his posthumous 3-volume publication called *Traite des Maladies Chirurgicales* in the year 1774. The first reported case of inferior lumbar hernia dates back to the year 1783. Since then, only about 300 cases of primary lumbar hernias have been reported in medical literature.^[3,4] This implies the rare encounter and presentation of inferior lumbar hernia. All lumbar hernias should be surgically treated to avoid complications such as incarceration or strangulation. It includes simple anatomical closure, overlapping of the aponeurosis, use of musculofascial flaps, prosthetic meshes, and laparoscopic mesh repair in the case of uncomplicated lumbar hernias.^[4] The laparoscopic approach, either transabdominal or extraperitoneal, is an alternative.^[5] A laparoscopic pre-peritoneal approach is preferable in small, simple primary lumbar hernias, leaving the open approach for the complex cases.^[6] In a prospective study comparing open vs laparoscopic repair for secondary lumbar hernia by Moreno-Ega *et al.*^[7], the mean operating time, postoperative morbidity, mean hospital stay, consumption of analgesics, and time to return to normal activities were found to be significantly lower in the laparoscopic group. Neris and Yglesias^[8] reported a case of traumatic inferior lumbar hernia operated using robotic-assisted laparoscopic transabdominal pre-peritoneal mesh repair, where robotic assistance helped in easy dissection and better visualization of structures.

In our case, the presentation is similar to that of Amyand's hernia, which is described as an incarcerated appendix within an inguinal hernia and de Garengeot hernia, appendicitis within a femoral hernia.^[9,10] The mortality of Amyand's hernia is reported to range from

14% to 30% and was linked to the peritoneal spread of sepsis. The defect in the inferior lumbar triangle being not in continuity with the peritoneal cavity, the complications of appendicitis such as abscess formation and perforation are less likely to have a higher mortality rate. However, an atypical presentation, like one in the case report by Ali and Subramaniam^[11] presenting as spontaneous rupture of the abscess externally a year before gaining clinical attention for inferior lumbar hernia, might be encountered.

Appendicitis is one of the common surgical emergencies worldwide and most often performed by a general surgeon.^[12] It is said that a surgeon may encounter such rare hernias once in his career; hence, awareness in this era of technological advancements is essential.^[13]

The surgical approach should be tailored to the individual characteristics of hernia. A laparoscopic pre-peritoneal approach is preferable in small, simple primary lumbar hernias, leaving the open approach for the complex cases. In the repair of a lumbar hernia, the general advantages of a laparoscopic approach, regarding a faster postoperative recovery and pain reduction, apply.^[6]

Conclusions

In acute settings, like the one in our case, the presence of such hernia was easily identified and repaired concomitantly using a minimal access approach, although without a prosthetic mesh for annulling the risk of infection. Moreover, the size of the defect being only 1 cm, the necessity of mesh reinforcement is not warranted in this case. It is also advisable to follow-up the patient to rule out the recurrence of hernia. This case, like Amyand's hernia and de Garengeot hernia, is one of its kind and is a rare presentation of a rare condition.

Author contribution

We certify that we have participated sufficiently in the intellectual content, conception and design of this work or the analysis and interpretation of the data (when applicable), as well as the writing of the manuscript, to take public responsibility for it and have agreed to have our name listed as a contributor.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Data availability statement

The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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