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Case Report

Invisible hernia, visible relief: laparoscopy in atypical epigastric swelling

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ABSTRACT

Epigastric hernias are midline abdominal wall defects between the xiphoid and umbilicus, typically small and often asymptomatic. Atypical presentations can pose diagnostic challenges, especially when imaging findings are incongruent with clinical signs. We present a case of a 30-year-old male with persistent epigastric discomfort and a partially reducible swelling for three years. Ultrasound revealed a small defect with herniated fat and bowel loops, but diagnostic laparoscopy found no fascial defect. Instead, preperitoneal fat herniation and localized muscle atrophy were noted. The herniated fat was excised, and a composite intraperitoneal mesh was placed using the IPOM technique (Intraperitoneal Onlay mesh). The patient recovered uneventfully and remained symptom-free at six-month follow-up. This case emphasizes the diagnostic limitations of imaging alone in atypical epigastric hernias and the diagnostic and therapeutic value of laparoscopy. Even in the absence of a visible fascial defect, symptomatic patients may benefit from surgical intervention. Laparoscopic IPOM repair provides a safe and effective approach, particularly in anatomically ambiguous cases. This report contributes to the limited literature on atypical epigastric hernias and reinforces the need for individualized surgical planning and long-term follow-up to monitor outcomes.

Keywords: Epigastric hernia, Laparoscopy, Intraperitoneal Onlay repair, Muscle atrophy, Atypical presentation

INTRODUCTION

Epigastric hernias are defects in the abdominal midline between the navel and the xiphoid process. The defects are generally no more than 1 cm in diameter. Their etiology is multifactorial including impaired congenital line loss due to lack of fiber decussation, raised intra-abdominal pressure, muscle weakness or chronic abdominal wall tension. The frequency of epigastric hernia is estimated to be between 3 and 5% in the general population, being more common in men (male: female=3:1) and more diagnosed in middle age.[1]

Epigastric hernia may be asymptomatic, but patients will often notice a small, uncomfortable nodule between the navel and the xiphoid. Up to twenty percent of the epigastric hernias are multiple. Intestinal incarceration or strangulation is rare. Those involving a peritoneal sac usually contain only omentum, and rarely the small intestine. Due to minimal protrusion, these hernias may be difficult to detect laparoscopically in atypical cases.

CASE REPORT

A 30-year-old male presented with a complaint of persistent fullness and discomfort in the epigastric region for three years. The swelling was partially reducible and did not completely regress upon lying down. There were no acute pain episodes, signs of incarceration, or systemic symptoms. No history of trauma or radiation exposure was reported.

On physical examination, a 6×7 cm soft, mildly tender, and partially reducible swelling was observed approximately 4 cm above the umbilicus. Carnett's sign was positive. There was no skin discoloration or organomegaly. Lab parameters including hemogram, electrolytes and liver function tests were normal.

Ultrasound revealed a 6.9 mm midline defect with herniation of fat and omentum. The size of externally visible fullness and the hernial defect observed in imaging was grossly incongruent, hence a diagnostic laparoscopy was planned.

During laparoscopy via standard three-port technique, a bulge in the anterior abdominal wall was identified without a discernible fascial defect. Dissection at the site of the bulge revealed underlying preperitoneal fat. Further excision of pre peritoneal fat exposed an area of localized muscle atrophy with thinned out muscle and no actual hernial defect.

A composite intraperitoneal mesh (polyester with absorbable collagen film) was placed over the defect after securing 5 cm margins all around the defect (excision of falciform ligament was required at superior margin) and secured with Prolene sutures and tackers.

Postoperative recovery was uneventful. At follow-up visits at 4 weeks and 6 months, the patient was asymptomatic with no evidence of recurrence.

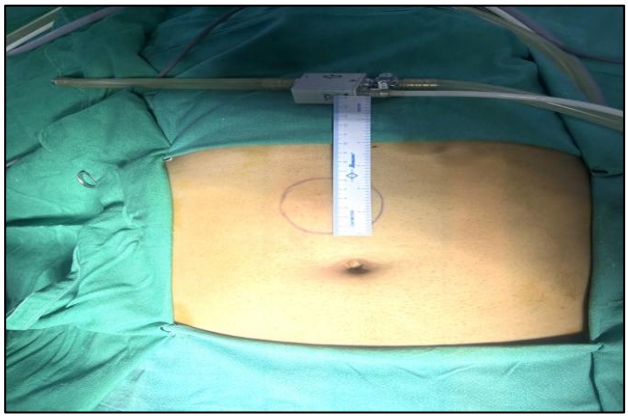

Figure 1: 6×7 cm area of fullness in epigastric region suggestive of partially reducible hernia.

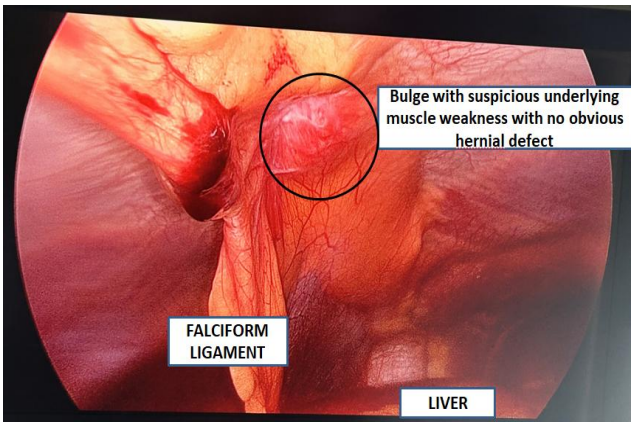

Figure 2: Laparoscopic view of anterior abdominal wall bulge without an obvious hernial defect, highlighting diagnostic challenge in atypical epigastric hernias.

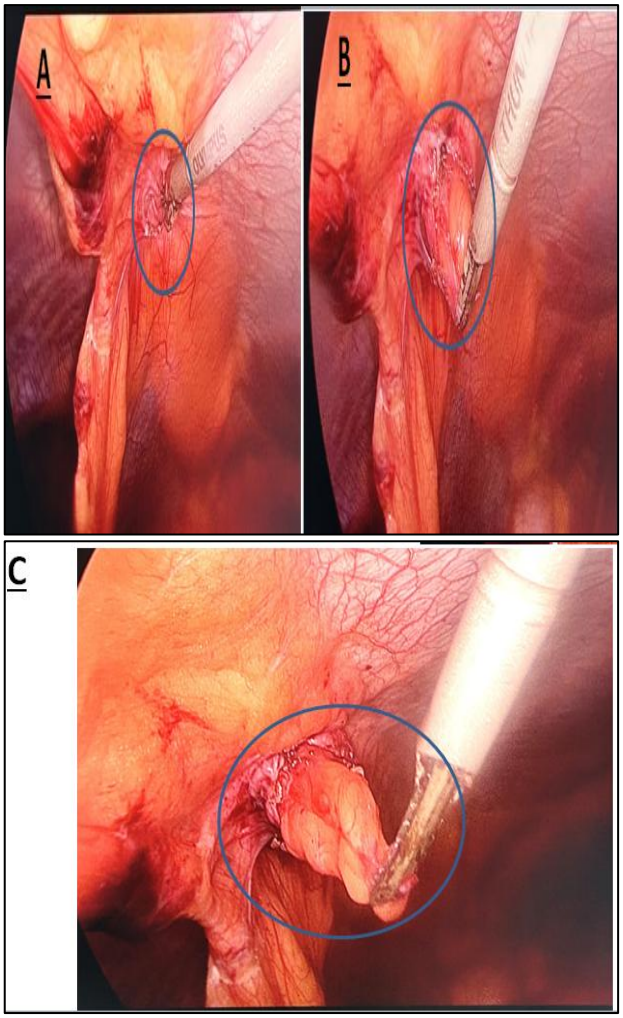

Figure 3 (A–C): Sequential dissection of the epigastric bulge revealing preperitoneal fat herniation emerging through the muscle layer without a true fascial defect.

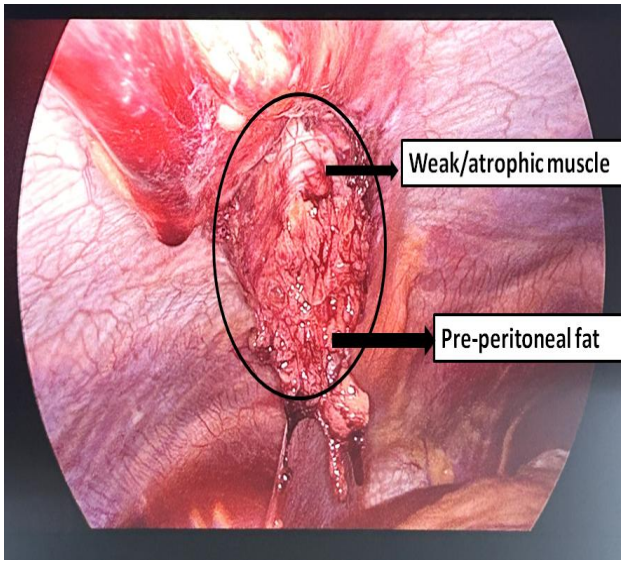

Figure 4: Excision of herniated preperitoneal fat uncovering an area of localized atrophic muscle in the anterior abdominal wall.

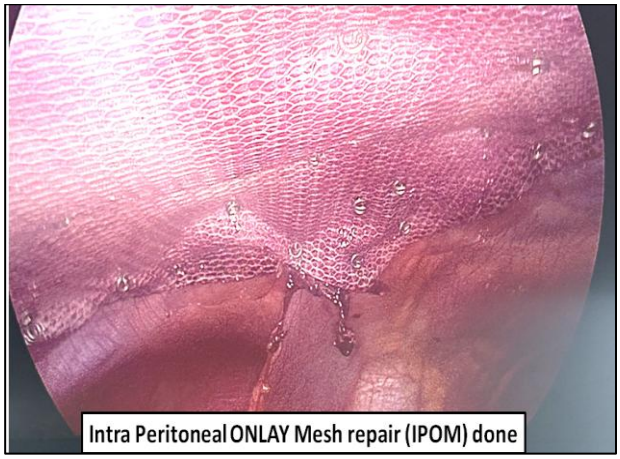

Figure 5: Placement and fixation of composite intraperitoneal mesh over the area of atrophied muscle.

DISCUSSION

Epigastric hernias, although relatively uncommon, can present significant diagnostic and therapeutic challenges when symptomatic. They constitute 3-5% of all abdominal wall hernias, occurring more frequently in males and typically diagnosed in middle-aged individuals.[2] While many epigastric hernias are asymptomatic, patients may present with vague epigastric discomfort or a palpable midline mass, as was observed in our case.

The differential diagnosis of a midline abdominal mass includes lipomas, desmoid tumors, rectus sheath hematomas, and other soft tissue neoplasms.[3] Preoperative imaging such as ultrasound or CT scan often assists in narrowing the diagnosis. However, as demonstrated in our case, imaging may not always correlate with intraoperative findings. While ultrasound suggested a hernial defect with fat and omental herniation, laparoscopy revealed a subtle preperitoneal fat herniation with underlying muscle atrophy. This underlines the importance of laparoscopy as a diagnostic tool particularly when clinical suspicion remains despite inconclusive imaging.[4]

Laparoscopic repair using the IPOM technique offers several advantages. It allows direct visualization of the abdominal wall, facilitates precise mesh placement, and minimizes tissue trauma. Studies have shown that laparoscopic techniques result in reduced postoperative pain, lower infection rates, and quicker recovery compared to open surgery.[5,6] In addition, long-term comparative studies have demonstrated lower recurrence rates and improved patient satisfaction with laparoscopic repair, making it the preferred option in many elective hernia repairs.[7,8]

In our patient, the use of a composite mesh ensured effective reinforcement while minimizing the risk of adhesions to intra-abdominal contents. Atypical presentations, such as the absence of a peritoneal sac or a defined fascial defect, highlight the need for individualized surgical planning. The excision of preperitoneal fat, followed by mesh placement, proved effective in resolving symptoms. The patient's symptom-free status at 6-month follow-up further supports the safety and efficacy of the laparoscopic intervention even in anatomically ambiguous cases.

CONCLUSION

This case adds to the limited body of literature on symptomatic epigastric hernias with atypical presentation, emphasizing the value of intraoperative flexibility and careful anatomical assessment. Long-term follow-up is essential to monitor for recurrence, especially in patients predisposed due to muscle weakness or increased intra-abdominal pressure.[9]

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