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Incarcerated Epigastric Hernia Causing Gastric Outlet Obstruction: A Case Report

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Authors' contributions

This work was carried out in collaboration between all authors. Author PU examined and operated upon the patient, designed the report, and wrote the first draft of the manuscript. Authors MS and RMB managed the literature searches. Author ST assisted in the operative procedure, managed the literature searches, compiled the details and wrote the final draft. All authors read and approved the final manuscript.

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Case Report

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ABSTRACT

Introduction: Elective repair of epigastric hernia is a frequent minor surgical procedure. In most cases the hernial content is pre-peritoneal fat.
Presentation of case: We report a case of a patient with epigastric hernia containing part of stomach and duodenum presenting as gastric outlet obstruction.
Discussion: Epigastric hernias are often asymptomatic and rarely contain viscera, but when symptomatic and recurrent, high index of suspicion is required to rule out visceral involvement.
Conclusion: The presence of distal part of stomach and duodenum within an epigastric hernia is a very rare finding and surgeons should look out for atypical presentations in acute or chronic presentations of this seemingly 'simple' hernia.

Keywords: Stomach; epigastric hernia; gastric outlet obstruction; hernia; ventral.

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1. INTRODUCTION

Epigastric hernias arise through the linea alba from between the xiphoid process and the umbilicus, usually midway between them [1]. Epigastric herniation is a rather common condition with a reported prevalence up to 10%, with most common content being preperitoneal fat [2]. Only a minority is symptomatic, presumably the reason for the scarce literature on this subject. Around 1.6–3.6% of all abdominal hernias and 0.5–5% of all operated abdominal hernias are epigastric hernias [3]. Epigastric hernias are 2–3 times more common in men, with a higher incidence in patients from 20 to 50 years [3].

Often, these defects are less than 1 cm in diameter and contain only extraperitoneal fat which produces a mushroom shaped subcutaneous swelling [4]. Many theories have been proposed with regards to its pathogenesis. Askar's theory of anatomical variations in the decussation of linea alba fibres or Moschowitz's theory of vascular lacunae were initially proposed, however, together with general factors for hernia formation, the theory of extra tension in the epigastric region by the diaphragm is the most likely theory of epigastric hernia formation [2].

Although rarely symptomatic and complicated, an ignored epigastric hernia with an unusual presentation may cause significant morbidity and/or mortality for the patient. We present one such rare case of gastric outlet obstruction secondary to an incarcerated epigastric hernia.

2. CASE REPORT

A 94-year-old female presented to us with 3-day history of an irreducible swelling in the epigastric region which had been reducible for the past 2-3 years. It was associated with constant, dull aching pain, initially mild in severity which was slowly increasing in intensity. Patient had multiple episodes of vomiting which were non-bilious in nature. This was not associated with any generalized abdominal distension or constipation. She had a similar episode 1 year ago, associated with acute onset irreducibility and non-bilious vomiting which was managed conservatively but not investigated further, details of which were not available with the patient. Patient had no known medical co-morbidities.

On palpation, there was a 10 cm x 10 cm firm, tender lump in the epigastric region which was irreducible, without any signs of local inflammation. Rest of the abdominal and per rectal examination was unremarkable with no signs suggestive of generalized peritonitis. Routine laboratory investigations including Complete Blood Count (CBC), Serum electrolytes, Blood Urea Nitrogen and Serum Creatinine were all within normal limits. After fluid resuscitation of the patient, a contrast enhanced CT scan of the abdomen was done which revealed a defect in the anterior abdominal musculature of 3.5cm with herniation of the distal stomach through it. Proximal stomach was dilated with rest of the bowel appearing normal. The patient was taken up for an emergency laparotomy and a 5cm upper midline incision was taken. The hernial sac was opened and 250ml of serosanguinous fluid was drained. The contents were found to be the pylorus, first part of duodenum and omentum, which were found to be healthy. The fascial ring was released and the contents reduced. An anatomical repair was performed and the incision closed. Postoperative course was uneventful and the patient was discharged on post-operative day 5.

3. DISCUSSION

Pain associated with seemingly inconsequential epigastric hernias is often due to vascular compromise of the herniated preperitoneal fat and it may mimic a peptic ulcer but a thorough gastrointestinal examination is paramount before the symptoms can be ascribed to the hernia. Often it is irreducible/incarcerated due to a narrow neck and hence, a cough impulse may not be demonstrable.

There have been reports of various rare intraabdominal pathologies being manifested as an epigastric hernia including bile duct cyst and gall bladder cancer [5], pseudomyxoma peritonei [6], floating gall bladder with acalculous cholecystitis [7] and interparietal omentocoele [8].

There is a possible association between DIEP flap breast reconstruction and post-operative epigastric hernia [9].

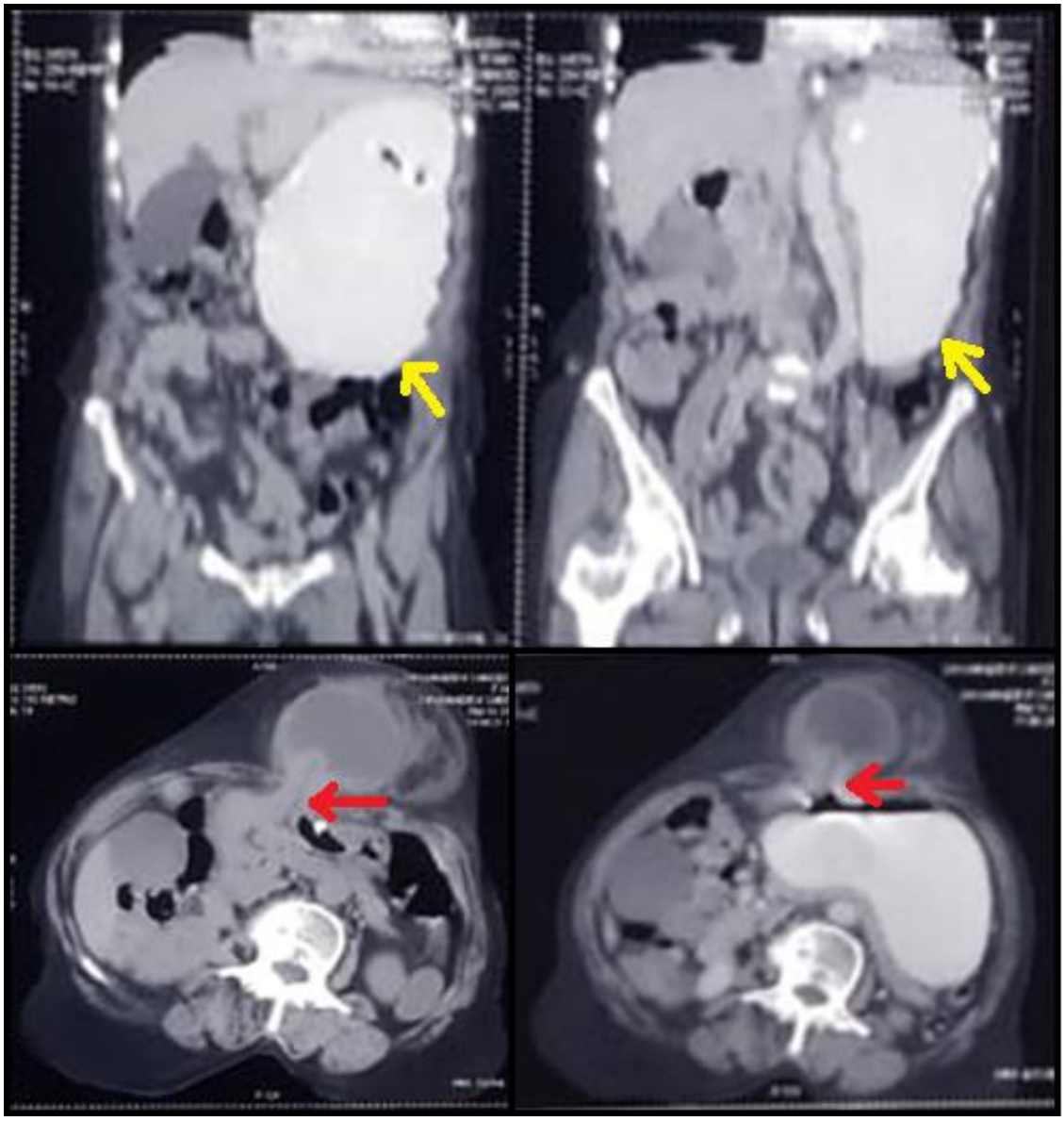

Fig. 1. Contrast enhanced CT revealing herniation of distal stomach through the anterior abdominal musculature (red arrow) with a grossly dilated proximal stomach (yellow arrow) with oral contrast

Cases of transverse colon strangulation in epigastric hernias have been reported [10], including Richter's epigastric hernia [11].

There have been cases reported of strangulated epigastric hernias containing small bowel [12,13,14,15], requiring resection and anastomosis, or round ligament of liver [14]. However, after an exhaustive literature search, only five cases of incarceration of stomach in an epigastric hernia could be found [16,17,18], the earliest dating back to 1934 [19,14], causing gastric outlet obstruction [20]. Two cases of perforated peptic ulcer presenting as an acutely strangulated epigastric hernia have been reported [21,22]. Incarceration of stomach in an umbilical hernia has also been reported [23].

A voluminous stomach can even get incarcerated in an inguinal hernia causing upper gastrointestinal hemorrhage [24].

In our experience, as most commonly preperitoneal fat is encountered as the content, especially with a small sized epigastric hernia, open repair with reduction or excision of fat with anatomical repair usually suffices. In rare cases of large non-incisional epigastric hernias, open repair with sublay meshplasty may be required to bridge the defect. As long as hernial contents are healthy, whether they are stomach, small or large bowel, they are simply reduced into the peritoneal cavity and the abdominal wall appropriately repaired.

Stomach or bowel loops as content maybe suspected in a large epigastric hernia, especially if associated with vomiting or altered bowel habits. Elderly as well as obese individuals are especially at risk due to decreased abdominal tone.

If rare pathologies [5,6,7,8] are encountered, due to the versatility of the vertical midline abdominal incision, they can be managed with primary surgical intervention in the same sitting if the appropriate expertise is available, or managed later after further evaluation or referral to a higher center.

4. CONCLUSION

Even though epigastric hernia repair is a relatively simple and minor procedure, the operating surgeon must be wary of unusual presentations like the one encountered by the authors and, although rare, such presentations require a high degree of suspicion to prevent significant morbidity and mortality, often in elderly patients.

CONSENT AND ETHICAL APPROVAL

As per international standard or university standard guideline patients consent and ethical approval has been collected and preserved by the authors.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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