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Suspected Gastric Volvulus Associated with a Sliding Hiatal Hernia in an Elderly Woman: A Rare Surgical Emergency

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Abstract: ***Gastric volvulus is an uncommon but potentially life-threatening condition caused by abnormal rotation of the stomach, which may lead to luminal obstruction, strangulation, ischemia, and perforation. Its occurrence in association with a hiatal hernia is particularly important in elderly patients, in whom the clinical presentation may be nonspecific. We report an 81-year-old woman who presented with right upper-quadrant abdominal pain of 20 days' duration. Contrast- enhanced computed tomography of the abdomen and pelvis demonstrated a sliding hiatal hernia with a dilated gastroesophageal junction and herniation of part of the stomach into the posterior mediastinum, with twisting at the gastroesophageal junction raising suspicion of gastric volvulus. Operative exploration confirmed the surgically significant upper gastrointestinal pathology and corrective surgery was performed. This case highlights the importance of maintaining a high index of suspicion for gastric volvulus in elderly patients with a hiatal hernia and atypical abdominal symptoms. Cross-sectional imaging facilitates early recognition, while timely operative management is essential to prevent ischemic and perforative complications.***

Keywords: gastric volvulus; hiatal hernia; sliding hiatus hernia; gastroesophageal junction; elderly; surgical emergency; case report

1. Introduction

Gastric volvulus is defined as an abnormal rotation of the stomach of sufficient degree to produce partial or complete obstruction. Although rare, it is clinically important because acute torsion can compromise gastric vascularity and progress to strangulation, necrosis, perforation, sepsis, and death. Gastric volvulus may occur as a primary disorder related to laxity or absence of the normal gastric suspensory ligaments, or more commonly as a secondary phenomenon associated with diaphragmatic or hiatal abnormalities. [1–5]

Hiatal hernia is an important predisposing anatomical abnormality. Migration of the stomach through an enlarged esophageal hiatus alters normal fixation and permits abnormal mobility and rotation. The presentation ranges from chronic intermittent upper abdominal or thoracic symptoms to acute obstruction. Classical teaching describes Borchardt's triad of severe epigastric pain and distension, unproductive retching, and inability to pass a nasogastric tube; however, the complete triad is not consistently present, particularly in elderly patients. [2,6–8]

We present an elderly woman with a CT-documented sliding hiatal hernia and suspected volvulus at the gastroesophageal junction. The case is noteworthy for its relatively nonspecific presentation and the importance of correlating radiological findings with operative anatomy. [9,10]

2. Case Presentation

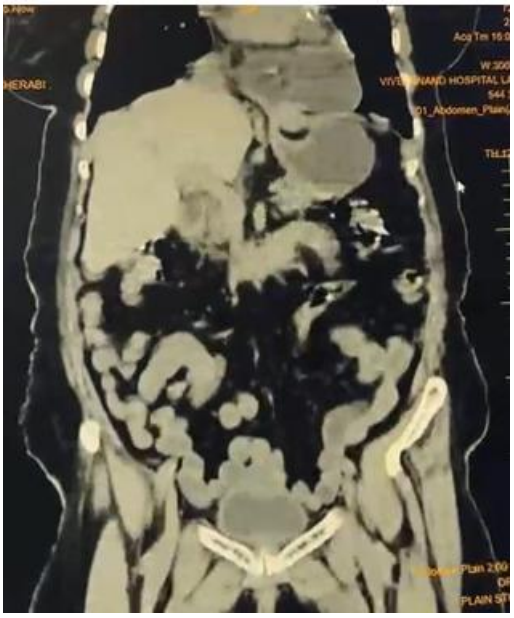
An 81-year-old woman presented with pain in the right upper quadrant of the abdomen for approximately 20 days. Patient was vitally stable on presentation; on systemic examination Air Entry was reduced on left side with audible bowel sounds in the left mediastinum. She underwent evaluation at Vilasrao Deshmukh Government Medical College and Hospital, Latur. The available clinical and radiological records were reviewed as part of the present case documentation.

Radiological Evaluation

Contrast-enhanced CT of the abdomen and pelvis performed on 13 July 2026 demonstrated a sliding hiatal hernia with dilatation of the gastroesophageal (GE) junction. A portion of the stomach was herniating into the posterior mediastinum. Twisting at the GE junction with an air-fluid level raised the possibility of associated gastric volvulus. The radiological impression was a sliding hiatus hernia with possibility of volvulus at the GE junction, and urgent endoscopic evaluation was advised.

The CT additionally described mild left-sided hydronephrosis and upper hydroureter secondary to a stricture, urinary bladder wall changes suggestive of cystitis, and several chronic/incidental findings. Uro-surgery opinion was taken, conservative management at present was advised for urinary complaints/ symptoms. These were not considered the primary explanation for the surgically significant upper gastrointestinal pathology and are not emphasized in the operative discussion.

Xray suggested, multiple air shadows in retrocardiac region.



Impression

- Sliding haitus hernia with possibility of volvulus of GE Junction
- Left obstructive uropathy
- Challenges of Urinary bladder cystitis
- Advice: URGENT Endoscopic evaluation

Figure 1: CT report impression documenting sliding hiatus hernia with possibility of volvulus at the gastroesophageal junction.

Figure 2: Plain abdominal radiographic image from the diagnostic work-up.

After thorough explanation of pathology, its suspected complications, operative procedure, intraoperative, perioperative & postoperative complications... patient & her relatives agreed for the procedure & gave consent for the same.

As per guidelines, Patient was expected to manometry & upper GI endoscopy for the hiatus hernia management but because of CT findings suggestive of volvulus & unavailability of above-mentioned investigation in government setup... patient was posted for surgical repair as per senior surgeon's advice & the same thing was explained to patient and her relatives.

Operative Management

- Under all aseptic precautions, cleaning and draping of the operative site were performed with the patient in the **supine position.**
- An **upper midline laparotomy incision** was made, extending from the xiphisternum to just above the umbilicus.
- The skin, subcutaneous tissue, linea alba, and peritoneum were divided carefully to enter the peritoneal cavity.
- A Deaver's retractor was applied to obtain adequate abdominal exposure.
- On exploration, the stomach was found herniating through a markedly dilated oesophageal hiatus into the posterior mediastinum, consistent with a large sliding hiatal hernia. The gastro-oesophageal junction was displaced into the thoracic cavity.
- There was no evidence of gangrenous changes or gastric perforation. The remaining abdominal viscera were examined and found to be normal.

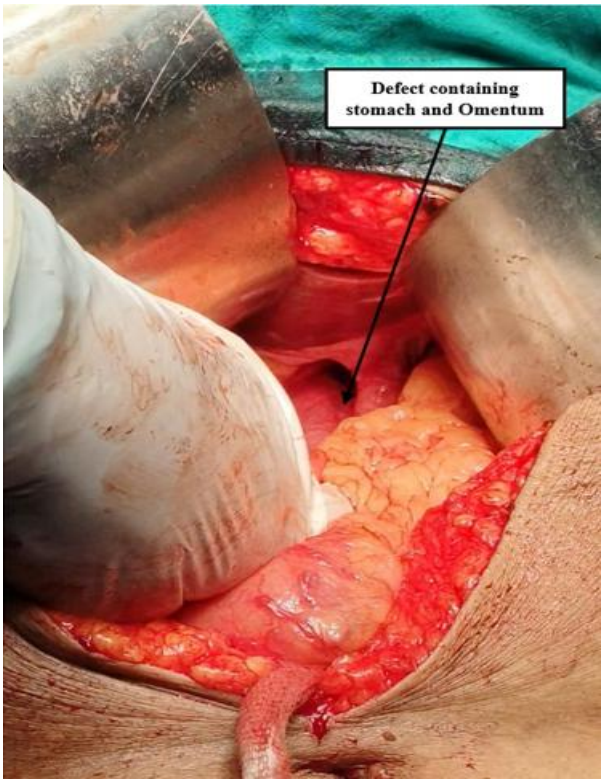


Figure 3: Intraoperative exposure demonstrating the stomach during operative exploration and assessment of the abnormal gastric orientation

- The left triangular ligament of the liver was divided as required, and the left lobe of the liver was retracted superiorly to expose the oesophageal hiatus.
- The hiatal defect was identified. The stomach, along with the gastro-oesophageal junction, was gently reduced from the posterior mediastinum into the abdominal cavity.
- Complete reduction was achieved without undue

tension.

- Approximately **5–6 cm of tension-free intra-abdominal oesophagus** was obtained following adequate mediastinal mobilisation.
- Posterior cruroplasty was performed using **Prolene 1-0** in a continuous interlocking manner, approximating the crura behind the oesophagus.
- A one-finger-breadth space was deliberately maintained around the oesophagus to avoid narrowing of the oesophageal hiatus and to prevent gas-bloat syndrome.
- The short gastric vessels were divided using blunt dissection and bipolar cautery to adequately mobilise the gastric fundus.
- A **360-degree Nissen's fundoplication** was then performed.
- The gastric fundus was passed posterior to the oesophagus after confirming adequate mobilisation and was wrapped around the distal oesophagus, incorporating the oesophageal wall without penetrating the mucosa.
- The repair was inspected and found to be tension-free, with satisfactory restoration of the gastro-oesophageal junction below the diaphragm.
- Haemostasis was achieved.

Closure

The abdomen was closed in layers:

- **Linea alba and rectus sheath:** Closed using loop Prolene in a continuous interlocking manner.
- **Subcutaneous tissue:** Closed using Vicryl 2-0 with simple interrupted sutures.
- **Skin:** Closed using Ethilon 2-0 in a vertical mattress manner.
- Sterile dressing was applied.
- The patient tolerated the procedure well, was extubated, and shifted to ward in stable condition.

Complications of Hiatus Hernia

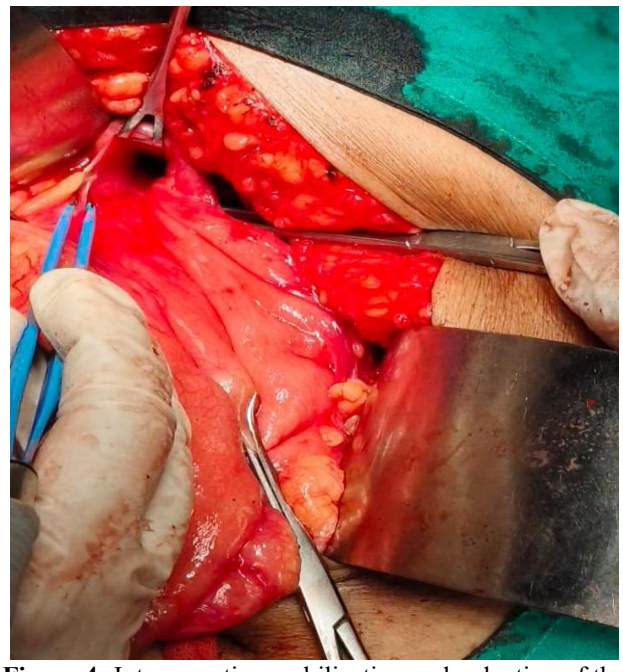


Figure 4: Intraoperative mobilization and reduction of the stomach, with assessment of the gastroesophageal/hiatal region

Intra-op Preparations Were Kept Ready for the following

- Relaxing incision over Rt crus of diaphragm
- Esophageal lengthening procedure
- Left sided Intercostal drain placement
- Vertical gastrectomy
- Feeding jejunostomy for Gastric volvulus

Postoperative Course and Follow-up ERAS protocol was followed

- Minimal open surgery incision was taken
- No Abdominal drain placement
- No Intercostal drain placement
- Early mobilization of patient
- DVT care was taken
- Ryles tube removed on post-op day 1
- Early liquid diet started from post-op day 2

The postoperative course was reported from the contemporaneous inpatient record, including return of bowel function, initiation and progression of oral intake, drain or nasogastric-tube management, postoperative complications, length of hospital stays, and condition at discharge. Long-term follow-up was documented for symptom resolution and any clinical or radiological evidence of recurrence.

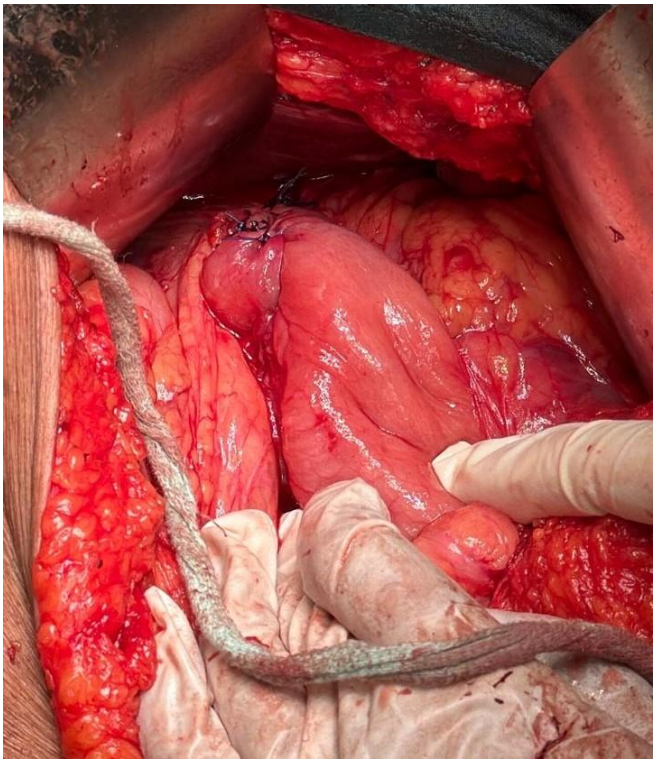


Figure 5: Operative view during correction of the abnormal gastric position and evaluation of gastric viability.

3. Discussion

Large hiatal hernias may cause substantial intrathoracic migration of the stomach and gastroesophageal junction. Patients can present with reflux, dysphagia, postprandial discomfort, vomiting, chest pain, breathlessness, or nonspecific abdominal symptoms. In elderly patients, the presentation may be subtle despite significant anatomical distortion. Gastric obstruction, ischemia, perforation, or

volvulus may occur as secondary complications. [1–7]

Figure 6: Final intraoperative appearance following correction and repair.

CT is useful for defining the hiatal defect, extent of gastric herniation, position of the gastroesophageal junction, gastric distension, and features of obstruction or ischemia. In this patient, the large hiatal hernia with intrathoracic displacement of the stomach and suspected twisting warranted urgent surgical intervention. [8–10]

Definitive treatment includes reduction of the stomach, assessment of viability, mobilisation of the oesophagus, and repair of the diaphragmatic hiatus. Posterior cruroplasty with fundoplication helps restore normal anatomy, prevent reflux, and reduce recurrence. The present case highlights that large hiatal hernias may remain clinically under-recognised until serious complications develop, making early imaging and timely repair essential. [11–17]

4. Conclusion

Gastric volvulus associated with a hiatal hernia is an uncommon but potentially life-threatening surgical condition. In elderly patients it may present with nonspecific or subacute symptoms rather than the classical acute triad. CT plays a pivotal role in demonstrating intrathoracic gastric migration and abnormal twisting, enabling timely surgical decision- making. Definitive treatment requires correction of the volvulus, assessment of gastric viability, and appropriate management of the underlying hiatal defect to minimize recurrence.

Declarations

Informed Consent - Written informed consent for treatment and for publication of the clinical details and appropriately anonymized clinical/radiological images should be confirmed and documented before submission. No directly identifying patient information should appear in the submitted figures.

Ethical Considerations - This manuscript describes an individual clinical case. Institutional requirements regarding ethics committee review/exemption for case reports should be verified before submission.

Conflict of Interest - The authors declare no conflict of interest.

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Author Contributions - Yogiraj Malge contributed to study conduct, data collection, analysis and manuscript preparation. Pramod Lokare and all other Co-authors mentioned above supervised the study, interpreted the findings and critically revised the manuscript.

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