



ORIGINAL RESEARCH PAPER

General Surgery

A DOUBLE MISS: TRAUMATIC DIAPHRAGMATIC HERNIA AND AN NEAR-MISS VISCERAL PERFORATION FOLLOWING ICD INSERTION.

KEY WORDS: Traumatic Diaphragmatic Hernia, ICD, Laparoscopic Mesh Repair

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ABSTRACT

Traumatic diaphragmatic hernia is a uncommon consequence of blunt or penetrating trauma to chest, abdomen often presenting late due to missed diagnosis. Early identification and timely repair are essential to prevent complications. We report a case of a left-sided TDH following blunt trauma to Chest, narrowly missing a visceral Perforation following ICD insertion yet successfully managed with laparoscopic reduction and mesh reinforcement.

INTRODUCTION

Traumatic diaphragmatic hernia occurs in approximately 0.8-7% of blunt Trauma and up to 10 -15% of penetrating thoracoabdominal injuries. Left-sided ruptures are more common due to Large right lobe of liver. Delayed or missed diagnosis may result in herniation of stomach, bowel, or spleen into the thoracic cavity and complications. Laparoscopic repair, although technically demanding, is increasingly preferred due to reduced morbidity and faster recovery.

Case Presentation

A 44-year-old male presented with history of Accidental Fall from Stairs with no Known comorbidities. Initially Admitted in nearby Hospital where Initial Investigations revealed Multiple Rib Fracture with Mild Hemopneumothorax and managed Conservatively. On Post Trauma Day 4, Patient developed Left side chest pain, Breathlessness, and Left Upper Abdomen Pain for which he was referred to MMC, RGGGH, Chennai.

Clinical Examination

Patient conscious, Restless
Dyspnoea, Tachypnoea+
Vitals
PR 120b/min
BP 140/90 mmhg
Spo2 90% RA
RR 36/min
Cvs-S, S2+
R/S - Absent Breath sounds on left Side +
P/A-Mild Epigastric Left Hypochondriac tenderness +
No Guarding No Rigidity BS+

With previous CT chest revealing Left side Multiple Ribs Fracture, mild Hemopneumothorax and present clinical findings, Emergency CTVS opinion obtained and ICD Insertion was done following which patient improved symptomatically. ICD was Functioning with 30ml serosanguinous Fluid and further imaging studies done leading to our case.

Investigations

Xray Chest and CT Thorax & Abdomen:



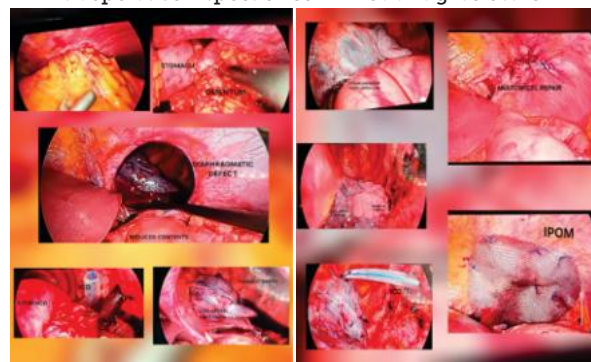
Impression: Left Diaphragmatic hernia.

Linear Mildly displaced Fracture anterolateral aspect of 6,7,8 th Ribs 5.8 x 3.6 cm defect in left hemidiaphragm with Herniation of stomach and transverse colon. Collapse of left LL +, Midline shift

Surgical Management

Laparoscopic approach was chosen.

- Three-port laparoscopic access established
- Stomach, omentum found herniating into the left thoracic cavity through central Part of diaphragmatic defect.
- ICD was Noted in left Pleural cavity Adjacent to stomach and omentum missing injuries to Vitals structures.
- Gentle release of Adhesions between Stomach and Lungs and reduction of contents performed.
- ICD replaced in Position.
- Primary approximation of Defect done
- Defect reinforced with a composite dual mesh (15 x 10cm) fixed using non-absorbable sutures.
- Intraoperative inspection confirmed airtight closure.



Postoperative Course

- Extubated immediately
- Chest physiotherapy initiated
- Post op xray chest revealed adequate Lung expansion
- Discharged on postoperative day 6



DISCUSSION

Traumatic diaphragmatic injuries are frequently missed during the acute phase due to overshadowing life-threatening injuries. Left-sided tears dominate because the right hemidiaphragm is shielded by the liver. ICD insertion after ruling out Diaphragmatic Hernia may prevent life threatening iatrogenic visceral injury, Perforation.

Key Challenges Include:

- Late presentation.
- Confirmatory Diagnosis with Imaging studies prior to ICD insertion.
- Difficulty in exposure due to Adhesions between abdominal viscera and pleura.

Laparoscopy offers:

- Better visualization of the defect.
- Shorter hospital stay and reduced morbidity.

Mesh Reinforcement is Recommended when:

- Defect > 3-5 cm.
- Tension-free primary closure is not feasible.
- Chronic or delayed TDH with muscle retraction

Our case demonstrates that laparoscopic repair with mesh is safe, feasible, and provides excellent short-term outcomes.

CONCLUSION

Left-sided traumatic diaphragmatic hernia may present late and requires high clinical suspicion for diagnosis. Laparoscopic mesh repair is an effective treatment option offering low morbidity, rapid recovery, and durable repair. This case emphasizes the need for careful evaluation of post-trauma patients with persistent thoracoabdominal symptoms.

REFERENCES

1. Rashid F, Chakrabarty MM, Singh R . A review on delayed presentation of diaphragmatic rupture. World J Emerg Surg.
2. Hanna WC, Ferri LE. Acute traumatic diaphragmatic injury. Thorac Surg Clin.
3. Shah R, Sabanathan S. Traumatic diaphragmatic rupture. Ann Thorac Surg