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Case Report

Type III Paraesophageal Hernia with Gastric Volvulus Following Laparoscopic Fundoplication with Intrarectal Mesh Migration After Laparoscopic Mesh Rectopexy in The Same Patient

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Abstract

Background: Complete rectal prolapse represents a full-thickness circumferential descent of the rectal wall through the anal orifice. Laparoscopic mesh rectopexy is an effective surgical technique, but mesh-related complications such as erosion, obstruction, and migration, though rare, can have serious consequences. Likewise, paraesophageal herniation with gastric volvulus is a recognized but uncommon complication following laparoscopic Nissen fundoplication.

Case Presentation: A 30-year-old male presented with abdominal pain, vomiting, constipation, and incomplete evacuation. He had undergone laparoscopic mesh rectopexy 10 years prior and laparoscopic fundoplication for GERD one year earlier. Imaging revealed a type 3 paraesophageal hernia with organoaxial gastric volvulus and intrarectal mesh migration. The patient underwent open paraesophageal hernia repair with mesh hernioplasty and transanal mesh removal.

Outcome: Postoperative recovery was uneventful, and the patient was discharged on the seventh day with complete symptom resolution.

Discussion: Mesh migration following laparoscopic rectopexy, although rare, is a serious complication more commonly associated with synthetic meshes. Similarly, paraesophageal herniation and gastric volvulus may occur after fundoplication due to anatomical and procedural factors. Early recognition and prompt surgical management are essential for optimal outcomes.

Conclusion: This case underscores the importance of long-term follow-up after mesh rectopexy and vigilance for delayed mesh migration. Additionally, clinicians should maintain high suspicion for paraesophageal hernia and gastric volvulus in post-fundoplication patients presenting with upper gastrointestinal symptoms.

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KEYWORDS: Rectal prolapse, Mesh migration, Rectopexy, Paraesophageal hernia, Gastric volvulus, Fundoplication complications

INTRODUCTION

BACKGROUND

Complete rectal prolapse is a circumferential full-thickness descent of the rectal wall through the anal orifice. Laparoscopic mesh rectopexy is a well-established surgical procedure with low morbidity and mortality. However, mesh-related complications such as erosion, bowel obstruction, and fecal impaction have been reported. Intrarectal mesh migration is a rare but significant complication.

Laparoscopic Nissen fundoplication has led to an increased number of anti-reflux procedures. Among its complications, paraesophageal herniation with gastric volvulus is a severe condition that may progress to gangrene and perforation. In this case, the patient developed both mesh migration and type 3 paraesophageal hernia with gastric volvulus following separate surgical procedures.

CASE PRESENTATION

A 30-year-old male presented to the emergency department with abdominal pain and vomiting for 7 days. He reported constipation and incomplete evacuation for 20 days. His surgical history included a laparoscopic mesh rectopexy for rectal prolapse 10 years before, and a laparoscopic fundoplication for GERD with hiatus hernia one year prior. Despite surgery, he experienced persistent heartburn unrelieved by antacids.

On examination:

- **Vitals: BP:** 106/82 mmHg, Pulse: 103/min, SpO2: 96% on room air.
- **Respiratory System:** Decreased breath sounds on the left side.
- **Abdomen:** No remarkable findings.
- Per Rectal Examination: A giant fecolith was detected.

Investigations

- **Laboratory Findings:** Leukocytosis (WBC 16,500/mm³, 83% neutrophils).
- **Imaging:**
  - **Abdominal X-ray:** Air bubble in the left hemithorax.
  - **Barium Esophagogram:** Large type 3 hiatal hernia (Figure 1).

CT Abdomen & Pelvis: Organoaxial gastric volvulus, type 3 paraesophageal hernia, fecal impaction in the sigmoid colon, and mesh erosion into the rectum (Figure 2). Passive left lung collapse noted.

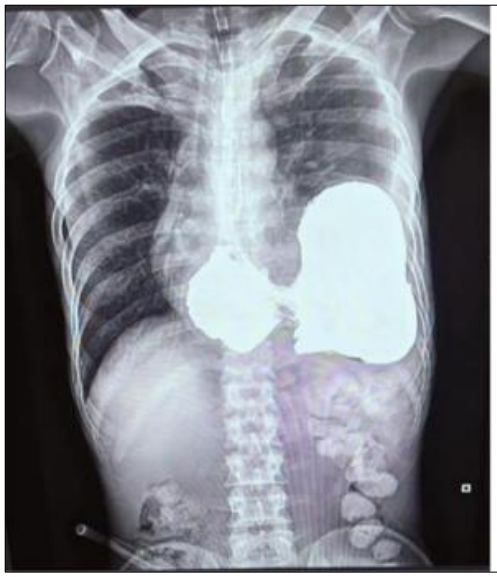

Figure 1: Barium swallow showing the gastroesophageal junction & stomach.

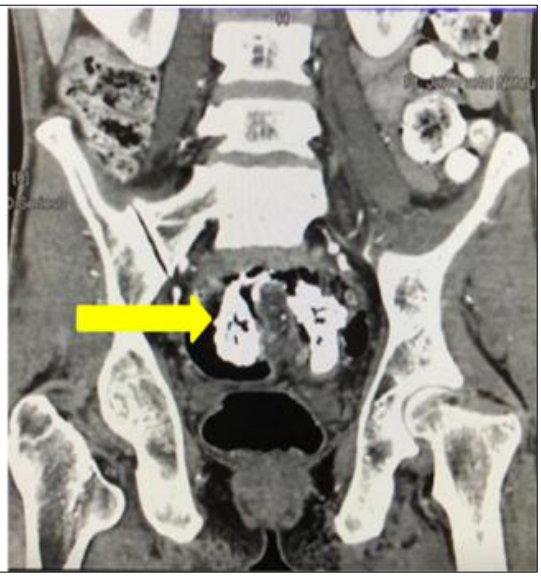

Figure 2: Coronal CT scan showing migrated prolene mesh in the rectum (misdiagnosed as fecolith)

TREATMENT

The patient underwent open paraesophageal hernia repair with mesh hernioplasty and mesh removal via a transanal approach.

Figure 3: Mesh Removal intraoperative Imaging

Figure 4: Post Mesh Removal

OUTCOME & FOLLOW-UP

The patient had an uneventful recovery and was discharged on postoperative day 7. Follow-up showed complete symptom resolution.

DISCUSSION

Laparoscopic ventral mesh rectopexy is widely used for rectal prolapse, offering benefits such as reduced pain and hospital stay. However, mesh-related complications, including migration, have been reported. Studies indicate a higher incidence with synthetic mesh than biological mesh. The management of intrarectal mesh migration should be individualized based on mesh location, infection, and fibrosis.

Laparoscopic Nissen fundoplication is a common procedure for GERD. However, paraesophageal herniation and gastric volvulus are rare but severe complications, often due to postoperative pain, gastric distension, or excessive fundus mobilization. Early dysphagia and vomiting postoperatively should raise suspicion of this condition.

In this case, type 3 paraesophageal hernia and gastric volvulus occurred post-fundoplication, necessitating surgical intervention.

CONCLUSION

This case highlights the potential for delayed mesh migration following laparoscopic rectopexy. Surgeons should consider this possibility in patients with previous rectopexy presenting with abdominal symptoms.

Paraesophageal hernia is a rare but serious complication after fundoplication. Early recognition and intervention are crucial for patient outcomes.

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