Bochdalek Hernia and Gastric Volvulus Misdiagnosed and Treated as Paraesophageal Hernia

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Introduction

- Bochdalek hernia, a congenital defect of the left posterolateral aspect of the diaphragm, rarely presents in adults, especially when complicated by gastric volvulus. Due to the rarity of this condition there is potential for misdiagnosis or delay in care.
- The purpose of this report is to highlight timely diagnosis and appropriate minimally invasive repair of a symptomatic Bochdalek hernia in an adult.

Presentation

- A 31-year-old female acutely presented to another facility with dyspnea, chest pain, and vomiting.
- CT demonstrated a left posterolateral diaphragmatic defect consistent with Bochdalek hernia and gastric volvulus (Fig. 1)
- Unfortunately, laparoscopic hiatal hernia repair with Nissen fundoplasty and gastrostomy tube were performed
- The left posterolateral diaphragmatic defect was not appreciated or repaired, and the patient was discharged home
- The patient returned to our institution seven days later with recurrent dyspnea, chest and abdominal pain, tachycardia, and leukocytosis
- CT again showed a left posterolateral diaphragmatic defect with herniated solid and hollow viscous organs as well as a partial obstruction of the large intestine.

Intervention

- An emergent robotic repair of a Bochdalek hernia was performed with reduction of contents, suture repair, and hernioplasty using DUALMESH®.
- Inspection revealed an intraperitoneal stomach, intact Nissen fundoplasty, and gastrostomy tube, which was subsequently removed, as well as a large Bochdalek hernia (Fig. 3) containing small intestine (Fig. 4), large intestine (Fig. 5), and spleen (Fig. 6).
- The diaphragmatic defect (6 x 8 cm) was repaired using non-absorbable, barbed suture then reinforced with DUALMESH® (6 x 10 cm) secured with non-absorbable suture and fibrin sealant (Fig. 7-9).
- The patient was discharged home after three days and free of symptoms at six months follow-up.

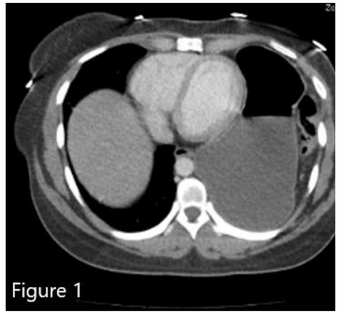
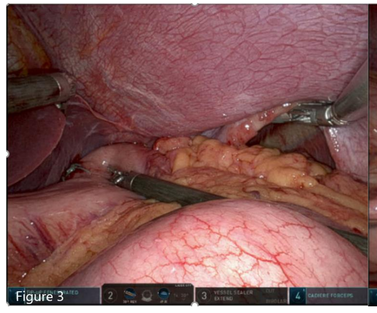
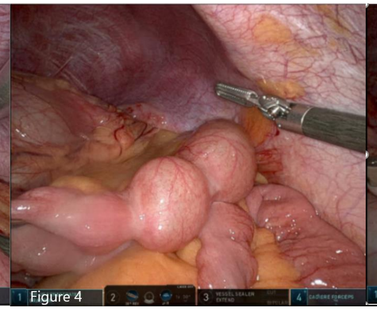
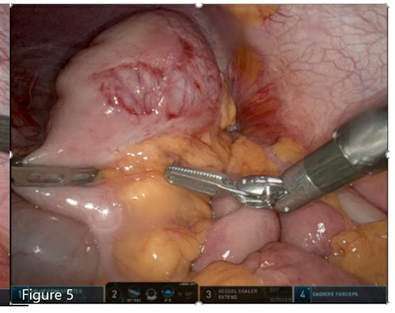

Figure 1


Figure 2

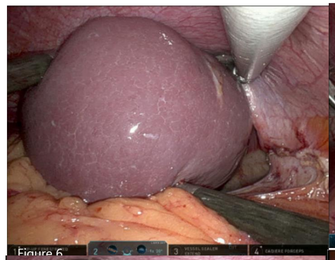

Figure 3

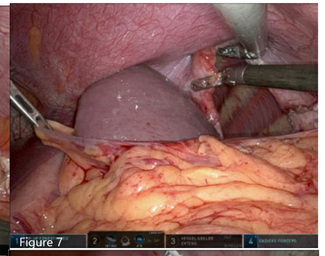

Figure 4

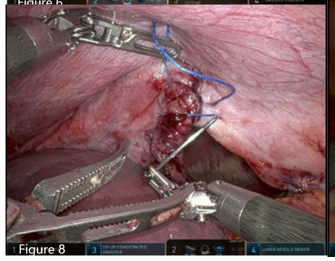

Figure 5

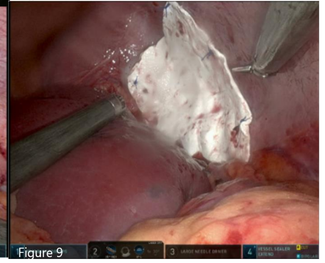
Discussion

- Bochdalek hernia is most often diagnosed in newborns but may present with or without obstruction in adults.
- In this patient with acute gastrointestinal obstruction, initial missed diagnosis led to inappropriate management and delay in care.
- A high index of suspicion is critical to appropriately diagnose and manage adults with acute presentation of Bochdalek hernia.
- A minimally invasive approach to Bochdalek hernia is feasible and safe; however, long-term outcome data are limited.


Figure 6


Figure 7


Figure 8


Figure 9

References

1. Gue RS, Winkler L. Bochdalek Hernia. In: *StatPearls*. Treasure Island (FL): StatPearls Publishing; August 27, 2021.
2. Marichez A, Fernandez B, Chiche L. Bochdalek diaphragmatic hernia with bowel incarceration. *J Visc Surg*. 2021;158(4):362-363. doi:10.1016/j.jviscsurg.2020.11.005