

Bochdalek Hernia with Gastric Necrosis Requiring Roux-en-Y Esophagojejunostomy

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Introduction

Vincent Alexander Bochdalek, a Czech anatomist and professor, was the first to describe congenital diaphragmatic hernias. Posterolateral diaphragmatic hernias are the most common type of congenital diaphragmatic hernia and result from a failure of fusion of the diaphragmatic muscle in the lumbocostal triangle, thereby leaving the pleura and peritoneum adjoined. The vast majority are congenital, occur on the left side, and are diagnosed in the neonatal period secondary to respiratory distress. Seldomly, these congenital hernias can be found in the adult population with the vast majority being found incidentally with the increased use of computed tomography. Although rarely, these can present symptomatically with abdominal pain, respiratory insufficiency with or without hydropneumothorax and/or obstructive symptoms.

Hereby, we present a case, highlighting the morbidity that can be associated with unrepaired congenital diaphragmatic hernias. This case represents an adult Bochdalek hernia resulting in near total gastric necrosis requiring esophagojejunostomy with Roux-en-Y reconstruction.

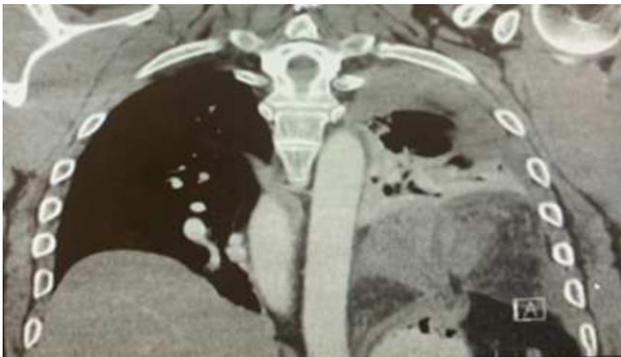


Figure 1: Coronal computed tomography (CT) of the chest demonstrating a left sided diaphragmatic hernia with hydropneumothorax concerning for gastric strangulation with resultant necrosis and perforation.

Case Report



Figure 2: Surgical specimen demonstrating extent of gastric necrosis upon the greater curvature following gastrectomy in sleeve gastrectomy fashion

Hospital Day 0: Emergency department visit complaining of nausea, vomiting and sudden upper abdominal pain. Computed tomography (CT) of chest – Figure 1 – demonstrated gastric strangulation. Patient was immediately taken to the operating room for upper endoscopy and VATS but ultimately converted to laparotomy with gastrectomy in sleeve fashion and ABThera placement. Surgery revealed a mostly necrotic gastric body encroaching upon the lesser curvature 7-8 cm beyond gastroesophageal (GE) junction – Figure 2.

Hospital Day 2: Planned re-evaluation revealed worsening ischemia along staple line and dusky appearing remaining stomach. Roux-en-Y gastrectomy performed

Remaining Hospital Course: Remaining course complicated with breakdown of the gastrojejunostomy anastomosis resulting in a tension pneumothorax requiring emergent chest tube placement at bedside and re-operation. The anastomosis was oversewn and the patient relied upon total parenteral nutrition until healed

Follow-up: Outpatient follow-up of his anastomotic leak demonstrated resolution and is now tolerating a regular diet

Conclusion

As many diaphragmatic hernias are diagnosed and repaired during the neonatal or infant time periods, adult cases of symptomatic congenital diaphragmatic hernias are exceedingly rare. Given the potential for visceral incarceration and strangulation, surgical intervention is recommended for any adult with a symptomatic diaphragmatic hernia whereas watchful waiting for asymptomatic hernias is an area of controversy. As advances in laparoscopy have made elective procedure more enticing and are associated with lower morbidity and recurrence, further studies are warranted to look the benefit/risk ratio of repairing asymptomatic diaphragmatic hernias in the adult. Thereby, our case of complete gastric necrosis, secondary to a congenital diaphragmatic hernia, illustrates the inherent capacity of these unrepaired hernias to result in life-threatening complications. Hereby, this case reinforces the need for appropriate referral to a specialist for potential prophylactic repair of asymptomatic congenital diaphragmatic hernias in adults and need for further studies of benefit/risk ratio of watchful waiting versus operative repair.

Citations

1. Loukas M, El-Sedfy A, Tubbs RS, Gribben WB, Shoja MM, Cermakova A. Vincent Alexander Bochdalek (1801–1883). *World JSurg* 2008; 32: 2324-6.
2. Haller Jr JA. Professor Bochdalek and His Hernia: Then and Now. In: Rickham PP ed. *Historical Aspects of Pediatric Surgery* [Internet]. Springer Berlin Heidelberg; 1986 [cited 2016 Oct 12]. p. 252–5. (Progress in Pediatric Surgery). Available from: http://link.springer.com/chapter/10.1007/978-3-642-70825-1_18
3. Mullins ME, Stein J, Saini SS, Mueller PR. Prevalence Incidental Bochdalek's Hernia in a Large Adult Population. *AJ AM J Roentgenol*. 2001;177(2): 363-6
4. Machado NO. Laparoscopic Repair of Bochdalek Diaphragmatic Hernia in Adults. *N Am J Med Sci*. 2016;8(2):65-74
5. Schumacher L, Gilbert S. Congenital Diaphragmatic Hernia in the Adult. *Thorac Surg Clin*. 2009;19(4):469-74
6. Brown SR, Horton JD, Trivette E, Hofmann LJ, Johnson JM. Bochdalek Hernia in the Adult: Demographics, Presentation, and Surgical Management. *Hernia*. 2011;15(1):23-30.
7. Atef M, Emna T. Bochdalek Hernia With Gastric Volvulus in an Adult: Common Symptoms for an Original Diagnosis. *Medicine (Baltimore)*. n2015;94(51):e2197