CONGENITAL DIAPHRAGMATIC HERNIA REPAIRS: A CASE SERIES OF OUTCOMES

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Introduction

- Congenital Diaphragmatic Hernia (CDH) is a rare birth defect characterized by a hole in the diaphragm, resulting in abdominal contents migrating into the chest cavity.
- Most common types are Morgagni (anterior, 25% of all cases) and Bochdalek hernias (posterior, 75% of all cases).[1]
- Surgical repair in adults aims to resolve symptoms and prevent incarceration, strangulation, or obstruction.[2]
- Laparoscopic and robotic surgery are now predominant methods of surgical repair, replacing open procedures.[3]

Aim

To determine characteristics and outcomes for adult patients who underwent congenital diaphragmatic hernia repairs at a tertiary care academic medical center.

Methods

- In an IRB-approved retrospective study, the electronic medical record at the tertiary care health system was queried for diaphragmatic hernia repairs performed from 1/1/2018 to 12/31/2022.
- Eight patients underwent repair during this time period and their baseline characteristics, preoperative symptoms, imaging, operative data, and postoperative surgical outcomes were assessed.
- Descriptive statistics were used to describe the data and STATA v17 was used to perform the analysis.

Results

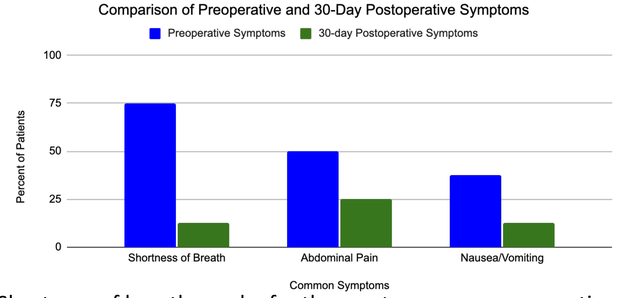
Table 1. Patient Characteristics and Preoperative Symptoms for CDH Repair

Characteristics	n = 8
Sex	
Male	3 (37.5%)
Female	5 (62.5%)
Pre-Procedure BMI (kg/m^2)	31.2 $\pm$ 6.9
Mean Age (years)	58.5 $\pm$ 10.4
Hernia Subtype	
Bochdalek	3 (37.5%)
Morgagni	5 (62.5%)
Width of defect on CT (cm)	5.3 $\pm$ 1.3
Preoperative symptoms	
Heartburn	2 (25%)
Chest pain	1 (12.5%)
Abdominal pain	4 (50%)
Nausea/vomiting	3 (37.5%)
SOB	6 (75%)

Table 2. Procedural Characteristics and Outcomes

	n = 8
Method of Repair	
Laparoscopic	5 (62.5%)
Robotic	1 (12.5%)
Open	2 (25.0%)
Use of Mesh	
Suture only	7 (87.5%)
Suture + Mesh	1 (12.5%)
Procedure Length (min)	106.5 $\pm$ 4.7
Length of Stay (days)	2.0 $\pm$ 1.1
Readmissions in 30 days	1 (12.5%)
Hernia recurrence	1 (12.5%)
Complications in 30 days	0
Mortality in 30 days	0

Results



- Shortness of breath was by far the most common preoperative symptom in 75% of patients, followed by abdominal pain.
- Postoperative symptoms seen at 30 days resolved in all patients by 90 day follow up.
- There were no 30-day complications, one patient was readmitted for a small bowel obstruction related to their surgery and this was managed nonoperatively.
- One patient underwent thoracic repair for a recurrent hernia 14 months post-op.

Conclusion

Congenital diaphragmatic hernia repair successfully resolved preoperative symptoms in the majority of patients undergoing repair, with minimal complications and low recurrence rates on short term follow up.

References

1. Chatterjee D, Ing RJ, Gien J (2020) Update on Congenital Diaphragmatic Hernia. Anesth Analg, 131(3):p 808-821, DOI: 10.1213/ANE.0000000000004324, September 2020.

2. Leeflang E, Madden J, Ibele A, Glasgow R, Morrow E (2022) Laparoscopic management of symptomatic congenital diaphragmatic hernia of Morgagni in the adult. Surg Endosc.; 36(1):216-221. DOI: 10.1007/s00464-020-08259-z, January 2022

3. Saroj SK, Kumar S, Afaque Y, Bhartia AK, Bhartia VK (2016) Laparoscopic Repair of Congenital Diaphragmatic Hernia in Adults. Minim Invasive Surg.; 2016:9032380. DOI: 10.1155/2016/9032380, December 2016.