Subcutaneous Emphysema Following Paraesophageal Hernia Repair: A Single-Center Study on Incidence and Outcomes

Dena Shehata MBChB, Edilin Lopez MD, Ammara Watkins MD, MPH, Elliot Servais MD, Susan Moffatt-Bruce MD, PHD, Cameron Stock, MD
Division of Thoracic and Cardiovascular Surgery, Lahey Hospital and Medical Center, Burlington, MA

Objective

- Subcutaneous emphysema following robotic-assisted paraesophageal surgery is an uncommon problem.
- It can be worrisome for patients and possibly lead to a longer hospital stay.
- Data regarding the impact of postoperative subcutaneous emphysema is limited.

Methods

- Retrospective single-center analysis. Patients who underwent paraesophageal hernia repair from 2018-2023 included.
- Demographics, comorbidities, intra-operative variables, and peri-operative complications were collected.
- Unilateral, localized subcutaneous emphysema was defined as Mild/moderate. While bilateral, generalized was defined as extensive.

Table 1. Demographics and comorbidities

Age, Mean (SD)	62 (±14.3)
Male, n (%)	31 (42)
Caucasian, n (%)	65 (89)
COPD	11 (15)
Prior history of trauma*, n (%)	17 (23.3)
Subcutaneous emphysema, n (%)	28 (38.3)
Mild/moderate**	20 (71.4)
Extensive***	8 (28.5)

*Upper aerodigestive tract, maxillofacial, or barotrauma.
**Unilateral, localized
***Bilateral, generalized

Results



73 patients included



Majority of patients with extensive subcutaneous emphysema were female



Patients with extensive subcutaneous emphysema had longer operative times compared to those with mild/moderate emphysema (mean = 257.3 minutes versus 182.5 minutes, P=0.01)



Female patients with subcutaneous emphysema experienced longer hospital stays compared to their male counterparts (mean = 3.7 days versus 2.0 days, P= 0.007)



No significant morbidity related to Subcutaneous emphysema. Management was largely of Clavien-Dindo grade I severity

Conclusion

- Longer operative time, and therefore longer insufflation time, is an important factor that could potentially lead to the development of postoperative subcutaneous emphysema
- While subcutaneous emphysema may not result in significant morbidity, in female patients it may be associated with longer hospital stay.