

Minimally Invasive Esophageal Replacement in Children with Stricture Esophagus: A Case Series

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INTRODUCTION

Refractory esophageal strictures in children pose major surgical challenges. Thoracoscopic esophagectomy & replacement, guided by ICG fluorescence, allows precise dissection, minimizes surgical trauma, and promotes faster recovery with enhanced safety.

OBJECTIVE

To showcase a minimally invasive, fluorescence-guided approach for esophageal mobilization and replacement in children with strictures.

METHODOLOGY

A retrospective review was conducted of three pediatric patients with severe, refractory esophageal strictures who underwent ICG-guided thoracoscopic esophagectomy. The procedure involved:

- Thoracoscopic mobilization of the diseased esophagus
- Intraoperative ICG fluorescence to delineate the course of the thoracic duct
- Gastric pull-up for esophageal replacement

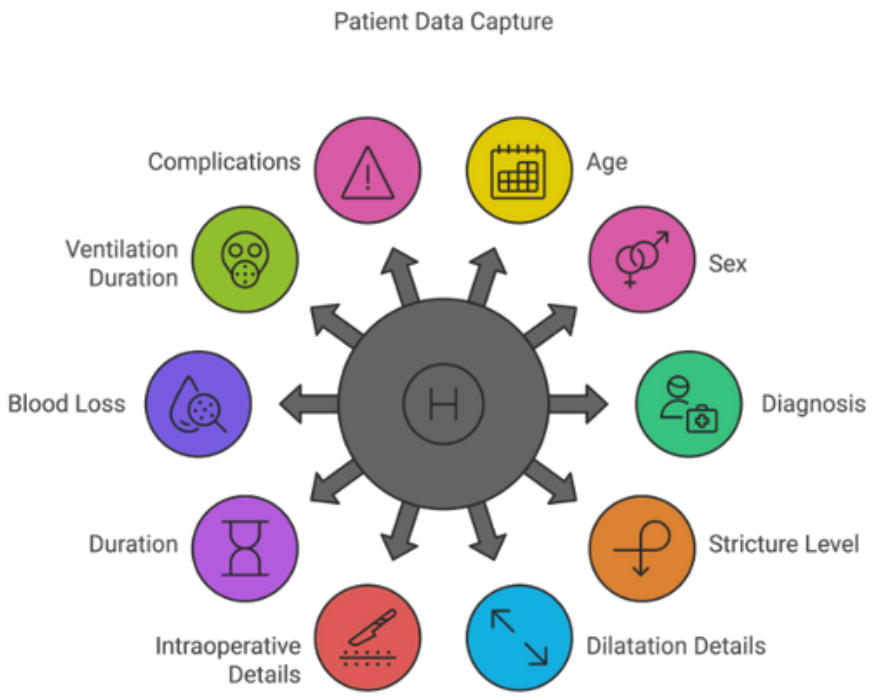
All surgeries were performed using a minimally invasive approach with emphasis on meticulous dissection, and tension-free anastomosis. Perioperative parameters and short-term outcomes were analyzed.

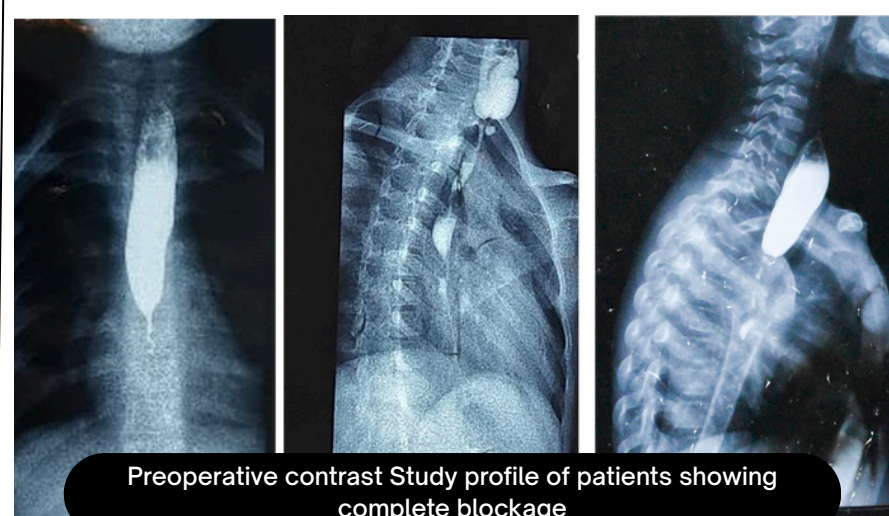
RESULTS

Three children (median age 6 years; M:F = 1:2) underwent successful ICG-guided thoracoscopic esophagectomy. Two had corrosive and one had peptic strictures.

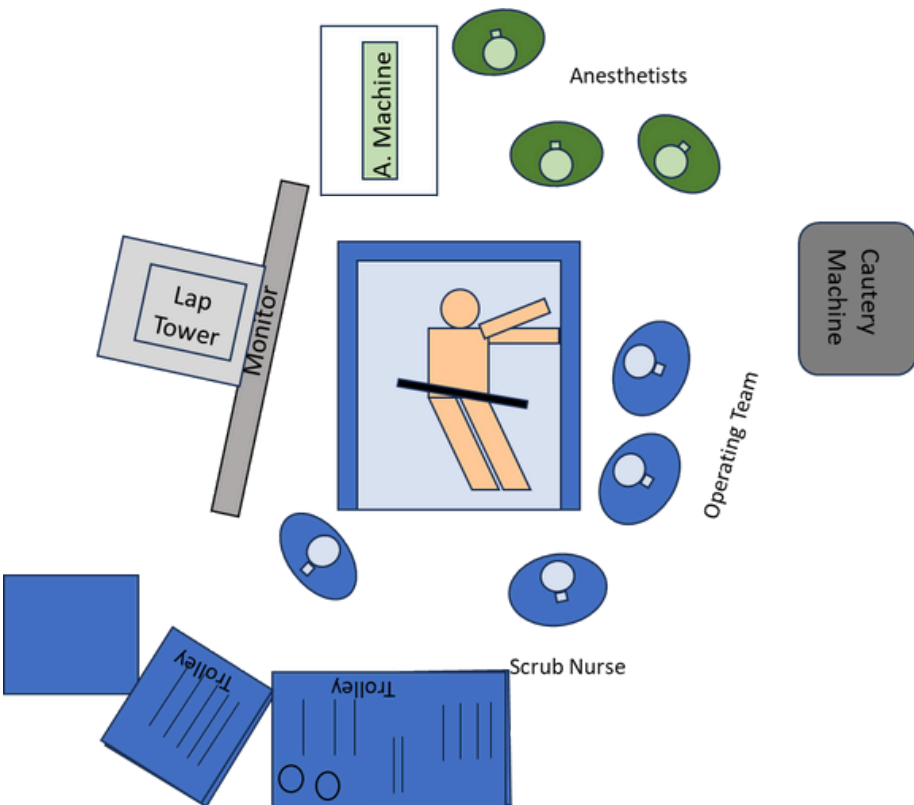
- All procedures were completed thoracoscopically with minimal blood loss and no intraoperative complications.
- Gastric pull-up was used in all cases.
- Postoperative recovery was uneventful —no anastomotic leaks or major morbidity.

All patients resumed oral feeding early and demonstrated satisfactory weight gain over a median follow-up of 5.8 months.

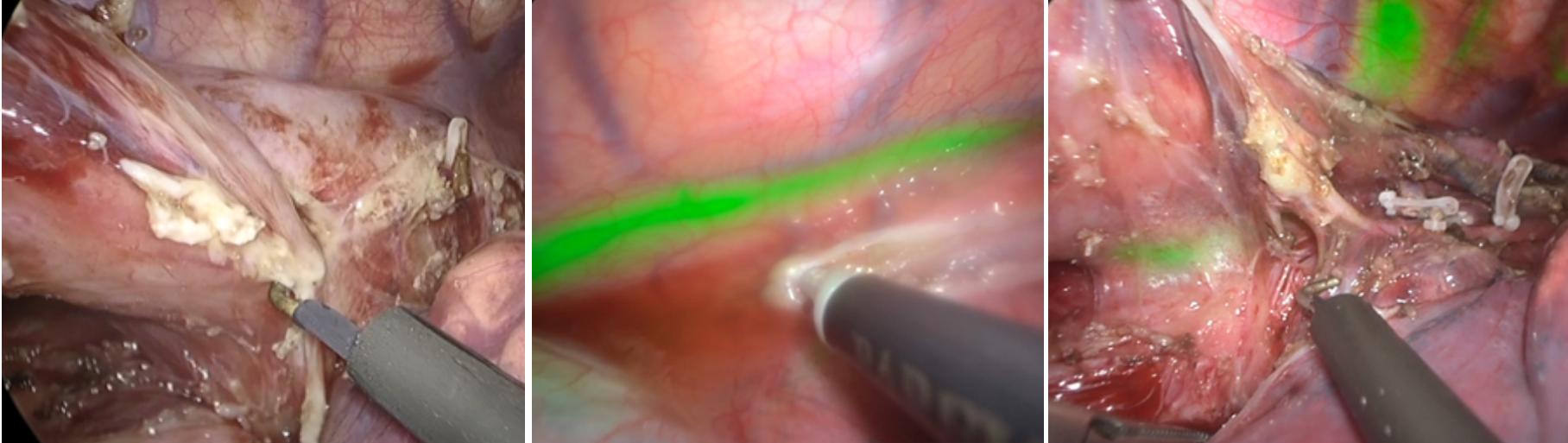


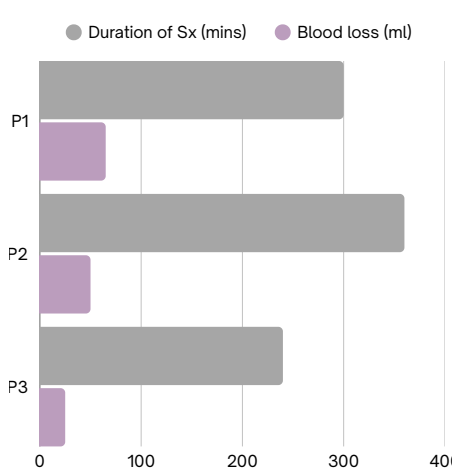


Preoperative contrast Study profile of patients showing complete blockage

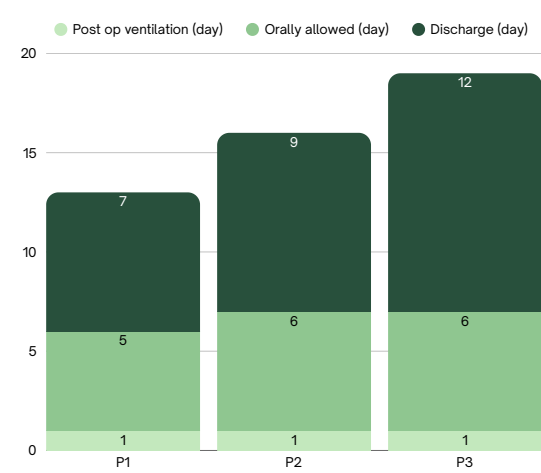


Theatre setup & Positioning

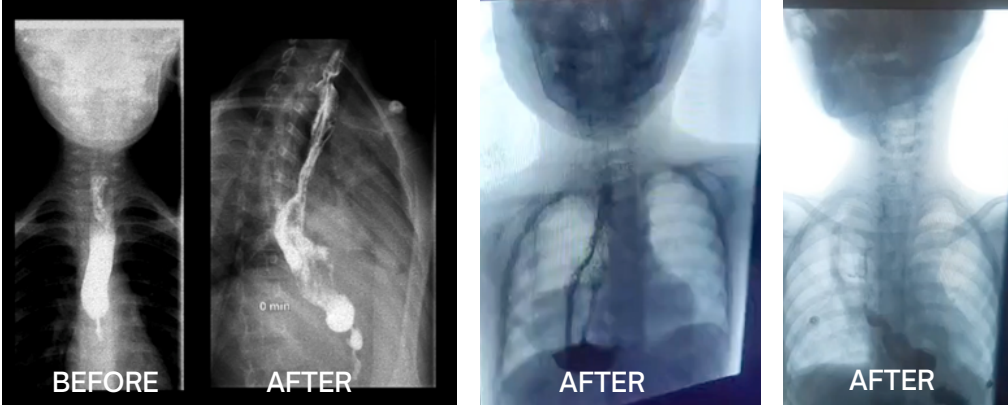




Parameter	P1	P2	P3
Duration of Sx (mins)	~280	~320	~220
Blood loss (ml)	~50	~30	~20



Parameter	P1	P2	P3
Post op ventilation (day)	1	1	1
Orally allowed (day)	5	6	6
Discharge (day)	7	9	12



CONCLUSION

Thoracoscopic esophagectomy with ICG enhances visualization, reduces collateral damage to the thoracic duct, and supports excellent outcomes in children.



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