

## INTRODUCTION

**Chylothorax** - a rare, life-threatening condition resulting from accumulation of chyle in the pleural space due to thoracic duct damage/disruption

- Increases mortality following lung transplantation
- Suspected in the setting of persistent or high-volume chest tube (CT) output
- Prompt diagnosis and intervention can improve outcomes/minimize complications

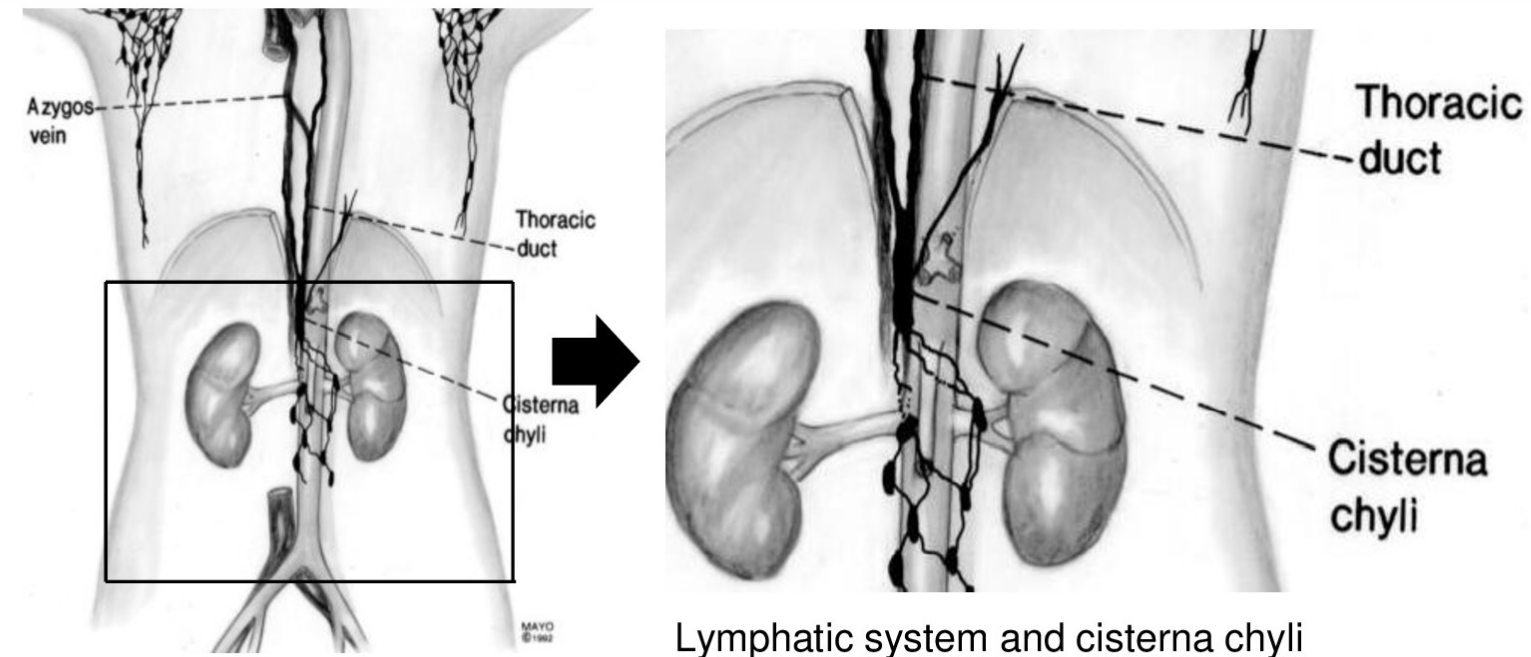
### Diagnosis:

- Clinical, laboratory, or radiologic
  - Suspected with persistent or high volume (500mL-1L) chest tube output
  - A pleural fluid TG levels  $\geq 110$  mg/dL confirms
  - Levels between 50-110 mg/dL are indeterminate; however, chylomicrons in the pleural fluid can confirm
  - Levels  $<50$  mg/dL exclude the diagnosis
  - Radiologic studies – chest x-ray, US, CT, MRI, thoracic duct lymphangiography, and lymphoscintigraphy can identify the leak

### Treatment:

- Non- Interventional/surgical –
  - Dietary modifications (low-fat, medium-chain TGs)
  - Total parenteral nutrition
  - Medications (somatostatin analogs &  $\alpha 1$ -adrenergic agonists)
- Interventional/surgical treatments –
  - Lymphangiogram, thoracic duct disruption, thoracic duct embolization (TDE), thoracic duct ligation (TDL), and pleurodesis

If a chylothorax remains unresolved despite optimal treatment, specialized expertise is required



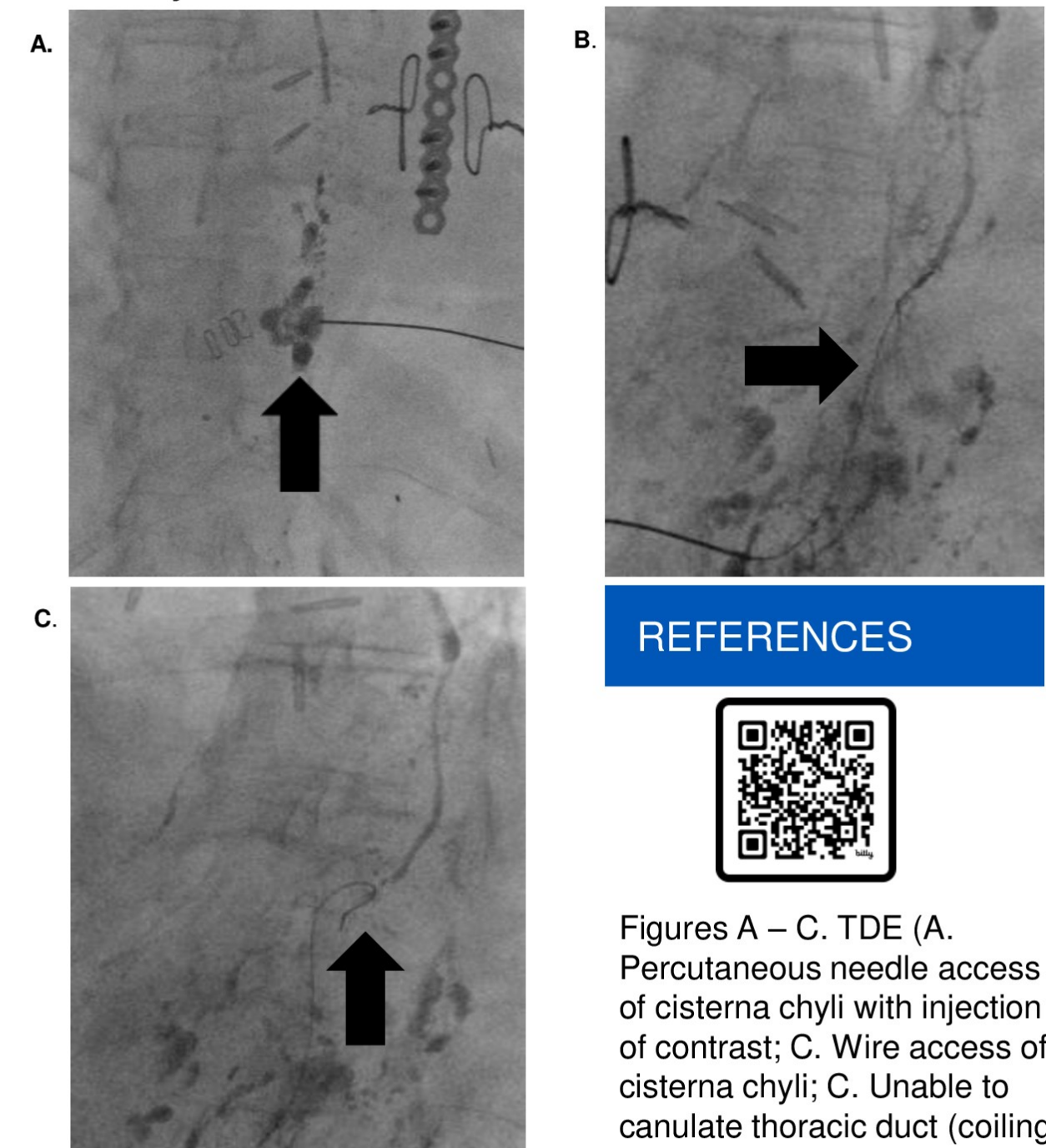
## CASE REPORT

69-yo female with COPD underwent bilateral lung transplantation at outside facility in May 2024. Post op course was complicated by refractory chylothorax

- POD #3 - bilateral high volume CT output; pleural fluid TGs elevated at 572 mg/dL; transitioned to a low-fat diet and started on SQ octreotide. Chylous CT output continued
- POD #16 - lymphangiogram was performed; due to technical difficulties accessing the chyle duct it was aborted
- POD #24 - right robotic TDL was performed with partial lung decortication and pleurodesis without improvement in CT output
- POD #32 - bedside pleurodesis with talc slurry was performed for persistent chylothorax, without significant improvement
- POD #37 - bilateral robotic assisted pleurectomy and talc pleurodesis was performed but was unsuccessful in reducing chylous CT output
- POD #52 - lymphangiogram performed, procedure was aborted due to insufficient visualization of lymphatics
- **POD #67- continued high CT output – transferred to Mayo for TDE**
  - **Able to introduce wire to cisterna chyli, but not advance to chyle duct, as a result embolization was not performed; pleural fluid TGs and CT output decreased**
  - **Improvement was felt to be secondary to chyle duct disruption and Lipiodol**
- POD #75 – CT was successfully removed
- POD #88 - the patient was discharged

## DISCUSSION

- Early diagnosis and intervention are vital for successful outcomes
- A tailored, stepwise approach reduces complications and mortality
- **Complex cases need a multidisciplinary and occasionally multi-institutional approach to management**
- **This case highlights a very complex and refractory case that ultimately resulted in a successful outcome**



## REFERENCES



Figures A – C. TDE (A. Percutaneous needle access of cisterna chyli with injection of contrast; C. Wire access of cisterna chyli; C. Unable to cannulate thoracic duct (coiling of wire))