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General Considerations

- Although expected blood loss is minimal, proximity to large vessels and azygous vein ligation pose a risk of rapid bleeding.
- Surgical repair is typically done via a right posterolateral thoracotomy, though a thoracoscopic approach may be used in select cases for better exposure and fewer long-term musculoskeletal issues.
- In both approaches, the tracheoesophageal fistula (TEF) is ligated first, followed by esophageal anastomosis.
- For long-gap esophageal atresia (EA), a staged repair is performed over 3–6 months.

Intraoperative

Pre-Induction

- **Ensure** vascular access is adequate
- **Consider** arterial line placement if UAC is not in place
- **Place** 10Fr Repogal in pouch for continuous low intermittent suction to prevent saliva buildup

Induction

- **IV versus mask induction**
 - Maintain spontaneous ventilation
- **Topicalize** the vocal cords with a local anesthetic
- **Perform** regular timeout
- **Secure** an adequate plane of anesthesia for bronchoscopy
- **Antibiotics prior to incision**
 - First line: cefoxitin 40 mg/kg q 2 hr
 - Second-line if allergic: check with Surgeon/Pharmacy

Medication Considerations

- Epinephrine (0.01 mcg/kg/min) vs Dopamine (1 mcg/kg/min) infusion
- Atropine prn
- Ketamine bolus vs infusion
- Acetaminophen 12.5 mg/kg
- Fentanyl or long-acting opioid prn

Maintenance of Anesthesia

- **Volatile** or TIVA maintenance at discretion of anesthesiologist
- **Normothermia:**
 - Room temperature set to 70° F
 - Utilize Bair Hugger
 - Goal intraoperative temperature 36-38° C

Airway Equipment

- Uncuffed ETT 2.5/3.0/3.5 and microcuff ETT 3.0/3.5
- Appropriately sized supraglottic airway
- Flexible fiberoptic bronchoscope
- Miller 0 **-and-** 1 blade and/or video laryngoscope
- Balloon-tipped Fogarty catheter (4Fr) if need to occlude the TEF

Ventilation Strategies

- Consider starting with Airway Pressure Release Ventilation (APRV) mode
 - Initial Settings:
 - P-high: MAP 15-30 cm
 - T-high: 2-3 seconds
 - P-low: Set at zero (no PEEP)
 - T-low: 0.2-0.4 sec
- Low threshold to switch to HFOV

Stages of Surgical Management

- Bronchoscopy
- Positioning
- Ligation of fistula
- Post ligation optimization
- Trial of all modes of ventilation (SV, PC, APRV, HF)
- Esophageal anastomosis
- Fiberoptic positioning

Op Note

- Gross type of TEF
 - Bronchoscopy description & photos
 - ETT size +/- air leak
 - Gap length (vert body & cm)
- Avoid transanastomotic tube at conclusion of repair (surgeon discretion)*

Post-operative

- ETT tube taping evaluation with ICN Respiratory Therapists
- Identify high-risk respiratory patients for consideration of delayed extubation (e.g., preoperative ventilation, poor pulmonary reserve intraop, high tension anastomosis)

Abbreviations:

ETT = Endotracheal Tube
CVL = Central venous line
PICC = Peripheral inserted central catheter
TPN = Total parenteral nutrition
HFOV = High Frequency Oscillatory Ventilation

[Preoperative algorithm](#)