Tracheoesophageal Fistula (DRAFT)
Enhanced Recovery After Surgery (ERAS)

Children's Mercy KANSAS CITY | Evidence Based Practice

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

QR code for mobile view

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
- Bronchosopy 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

Contact: EvidenceBasedPractice @cmh.edu

Link to: synopsis and references

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