Tracheoesophageal Fistula/ Esophageal Atresia (Short Segment TEF/EA) Care Guideline

CHOC Children's
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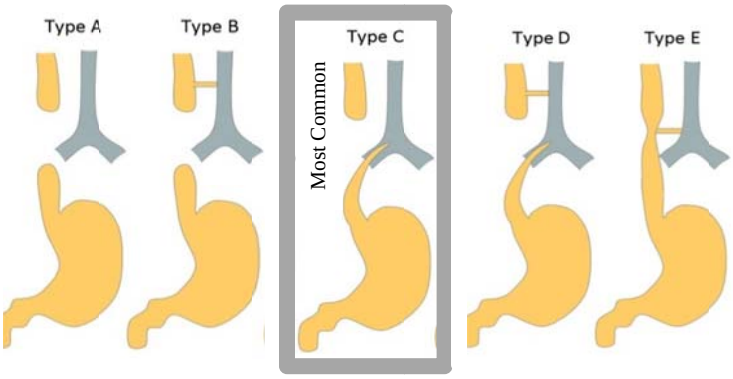

Available Order Set:
TEF/EA Pre-Op Order Set
TEF/EA Post-Op Order Set

Parent/Family Education:
TEF and/or EA Family Teaching Handout

Inclusion Criteria:
Any infant admitted to the NICU for suspected short segment TEF/EA except those that meet Small Baby Unit criteria (<1000 grams or 28

Preoperative Assessment:

- Polyhydramnios and/or prenatal ultrasound diagnosis
- Inability to manage secretions, including signs of drooling, choking, and coughing
- Inability to pass OG/NG tube beyond approximately 10 cm with coiling of tube in esophagus
- X-Ray: A gastric tube may end in the proximal esophagus. A gasless abdomen suggests pure EA. Gas in the abdomen suggests tracheoesophageal fistula..

Pre-Operative Interventions:

- □ Gently insert 10 Fr Replogle to predetermined length or as far as possible (usually 9-13 cm) and connect to low continuous suction. Maintain patency with irrigations or infusion of 3 ml air Q 4hrs. DO NOT use saline.
- □ Reflux precautions- elevate HOB 30-45 degrees
- □ Provide respiratory support if necessary. If mechanical ventilation is required attempt to use low mean airway pressures or HFOV to minimize gastric distention. Maintain ETT close to level of carina to bypass TEF and possibly turn ETT to have blue line facing posterior. Avoid use of CPAP and bag mask ventilation if possible.
- □ Obtain Chest X-Ray to verify ETT placement
- □ Make NPO
- □ Obtain PICC and provide maintenance IV fluids
- □ Obtain Routine Admission and Pre-Op Labs
    - o Transport Work-Up (Blood Type and Screen)
    - o MRSA & VRE Surveillance
    - o CBC with Diff, Panel 9 (pre-operative, after 12 hours of age)
    - o Blood culture (if indicated and not previously done)
    - o Chromosomal Microarray for genetic work up
- □ Place 20 ml/kg PRBC's on hold for OR
- □ Administer broad spectrum antibiotics (ampicillin and gentamicin)
- □ Obtain Echocardiogram ASAP (Include in comment: evaluate for left or right-sidedness aortic arch)
- □ If intubated, CXR the AM of surgery
- □ Bring unopened 5F or 6F Corpak feeding tube and AMT Bridal™ to OR with patient

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Post-Operative Interventions:

- □ Blood gas, blood sugar, temperature upon return to the NICU
- □ Continuous CO2 monitoring
- □ Chest X-Ray to confirm ETT placement
- □ Maintain ETT at precise location to prevent trauma to surgical site. ETT suction only to precise length of ET tube to prevent damage to tracheal repair.
- □ DO NOT extubate patient without neonatology attending and surgeon approval. Re-intubation by attending only due to risk of anastomotic rupture.
- □ Suction oral/nasal cavity only to posterior pharynx, DO NOT deep suction.
- □ Elevate HOB 30-45 degrees
- □ Maintain chest tube to water seal drainage unless surgical preference is to -20 suction.
- □ G tube (if placed) to gravity drainage.
- □ Surgically placed NG tube to gravity drainage. It acts as a stent to the anastomotic site.
    - o DO NOT MANIPULATE OR REPLACE NG TUBE! Ensure tubing is secure at all times. Page surgery if tube becomes dislodged.
- □ Maintain neck in a neutral position. Do not hyperextend neck to avoid surgical site trauma.
- □ Post-operative labs on POD #1
    - o Blood gas
    - o BMP, CBC
- □ Proceed with VACTERL work up
- □ NPO, maintain central IV access, and provide maintenance TPN and lipids
- □ Broad spectrum antibiotics (ampicillin and gentamicin) for 48 hours post-operative
- □ Begin and maintain patient on ranitidine to protect surgical site from stomach acid. This prevents strictures.
- □ With surgeon approval, may consider early trophic continuous feeds after extubation before esophagram
- □ Esophagram on POD#7 to assess for healing of anastomotic site and signs of leakage
- □ If no leak on esophagram, initiate oral feeds:
    - o Start at BM 20 cc/kg/day divided Q3 hours PO cue-based
    - o Once feeds are tolerated for 24 hours- Surgery to remove chest tube
    - o Advance feeds as tolerated

Approved Evidence Based Medicine Committee 3-16-16

Pain Management:

- □ IV acetaminophen 10/mg/kg/dose Q 6 hours around the clock for 24 hours
- □ Once IV acetaminophen course complete, begin 15 mg/kg/dose rectal acetaminophen Q4 hours PRN or IV Morphine 0.05-0.1mg/kg/dose Q2 hours PRN for severe pain (NPASS 7-10)

Follow Up Studies/ Consults:

Obtain:

- □ Echocardiogram
- □ Sacral US
- □ CXR and KUB to evaluate for vertebral anomalies
- □ Genetics consult: obtain chromosomal microarray analysis
- □ Renal US on DOL #2 or later

Inclusion of at least 3 of the following:

Vertebral-Hemi vertebrae
Anus-Imperforate anus
Cardiac-TOF, VSD, right sided arch
Trachea- tracheoesophageal fistula
Esophagus-esophageal atresia
Renal- solitary kidney or reflux
Limbs- absence of radius

Considerations for Management:

- □ Aspiration
- □ Gastroesophageal Reflux
- □ Infection from pneumonia, central line, chest-tube, or surgical site
- □ Anastomotic leak
- □ Anastomotic stricture
- □ Esophageal dysmotility
- □ Vocal cord paralysis
- □ Tracheomalacia
- □ TEF cough and stridor

Discharge Planning:

- □ Ranitidine home prescription
- □ Surgical follow up 2-3 weeks after discharge
- □ Pediatrician 1-3 days after discharge
- □ Specialist follow up: Genetics, GI, ENT, Pulmonology, etc.. if consulting

References
NICU Transesophageal Fistula Care Guideline

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