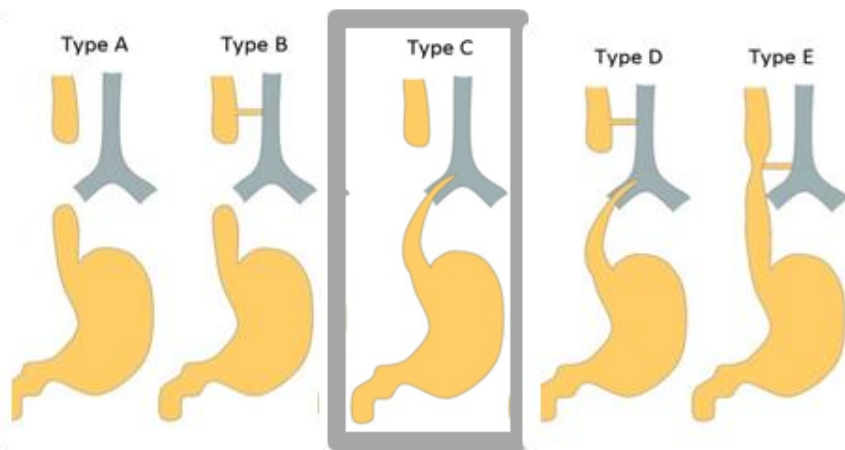


Tracheoesophageal Fistula / Esophageal Atresia (TEF/EA) Care Guideline



Available Order Sets

- 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 weeks gestation).

Pre-Operative 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 (Type A). 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. May require use of double chamber set-up if difficulty in maintaining output.
- Prior to OR, Surgical NICU attending to discuss with operating surgeon regarding patient's candidacy for intra-operative placement of transanastomotic nasogastric tube. Strongly recommend placement for preterm patients or those with other significant co-morbidities (e.g. complex congenital heart disease)
- 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 CXR to verify ETT placement
- Make NPO
- Insert PICC and provide maintenance IV fluids
- Obtain Routine Admission and Pre-Op Labs
 - Transport Work-Up (Blood Type and Screen)
 - MRSA & VRE Surveillance
 - CBC with Diff, CMP
 - Blood culture (if indicated and not previously done)
 - 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– Must be obtained prior to OR
 - Include in comment: evaluate for left or right-sidedness aortic arch)

Post-Operative Interventions

- Blood gas, blood sugar, temperature upon return to the NICU
- 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.
 - No CPAP or NIPPV after extubation
- 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.
 - DO NOT MANIPULATE OR REPLACE NG TUBE! Ensure tubing is secure at all times. Page surgery if tube becomes dislodged.
 - Some patients may return from OR without NGT per surgeon discretion to minimize risk of stricture
- Maintain neck in a neutral position. Do not hyperextend neck to avoid surgical site trauma.
- Post-operative labs on POD #1
 - Blood gas, BMP, CBC
- Proceed with VACTERL work up
- NPO, maintain central IV access, and provide maintenance TPN and lipids
- Broad spectrum antibiotics (ampicillin & gentamicin or cefoxitin) for 24-48 hours post-operative
- Begin and maintain patient on proton pump inhibitor (PPI) to protect surgical site from stomach acid and decrease risk of 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 and place order for 'Feeding/Swallowing Team Evaluation'
 - Start feeds on Surgical Guideline 2
 - Once feeds are tolerated for 24 hours- Surgery to remove chest tube
- If requires esophageal dilation, generally must wait at least 6 weeks from initial repair

Pain Management

- Use Pain Guideline 2 for post-operative pain management:
 - Titrate and wean per guideline

Follow Up Studies / Consults

Obtain:

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

VACTERL Criteria – 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 or stricture
- Esophageal dysmotility
- Vocal cord paralysis
- Tracheomalacia
- TEF cough and stridor

Discharge Planning

- PPI home prescription
- Surgical follow up 2-3 weeks after discharge
- Pediatrician 1-3 days after discharge
- Specialist follow up: GI (mandatory), other services as needed if consulting

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

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