Pitfalls of Post-Operative Management of Tracheoesophageal Fistula

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Background

Tracheoesophageal fistula (TEF) presents peri-operative airway management challenges to the anesthesiologist. Intraoperative management is well described, but post-operative strategies for airway management are lacking in the literature.

Case Presentation

An otherwise healthy 39 week 2450g neonate on DOL 4 presented for repair of a Type C TEF. Patient underwent uneventful anesthetic and surgical repair.

As standard of practice, an ETT was placed above carina but below the fistula. Decision was made to keep the child intubated to protect the suture line.

Shortly after arriving to the NICU, no chest rise was noted despite an unchanged tube position. Manual ventilation was unsuccessful. The ETT was removed and bag mask ventilation was successful.

Patient was re-intubated without difficulty. CXR was obtained, showing R unilateral pneumothorax under mild tension.

Patient was taken to the OR for emergent re-exploration, which revealed a small leak at the tracheal repair. The tracheal leak was repaired and patient was transferred intubated to the PICU in stable condition.

Discussion

The case presentation illustrates several controversies in postoperative airway management in a freshly repaired TEF.

It is unclear whether early extubation versus delayed extubation is safest after TEF repair.

- Early Extubation Advantages:
  - Decreased friction from the ETT
  - Reduced need for PPV

Delayed Extubation Advantages:

- Avoidance of anastomotic disruption should re-intubation be necessary

What is the ideal position of the ETT with respect to the tracheal repair?

- An ETT tip secured below the repair could precipitate mainstem intubation, carinal irritation, bronchospasm, or contact with potential suture disruption.
- An ETT secured higher could lead to accidental extubation or barotrauma to the suture line.

Controversy surrounding the issue of prophylactic suctioning of the ETT:

- Does routine suctioning increase risk of disrupting suture lines or decrease incidence of mucous plugging?
- Does routine suctioning decrease incidence of mucous plugging

References
