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HUGE TRACHEAL DIVERTICULUM MIMICKING TRACHEOESOPHAGEAL FISTULA IN PURE ESOPHAGEAL ATRESIA

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INTRODUCTION

- The foregut will differentiate into a ventral respiratory and dorsal esophageal part at 4 weeks of gestation.
- Incomplete separation causes esophageal atresia with or without tracheoesophageal fistula (EA/TEF).
- EA/TEF may have multiple associations with respiratory tree anomalies and can be of great clinical importance.
- However tracheal diverticulum in association with pure esophageal atresia masquerading the tracheoesophageal fistula is a rare clinical condition.

CASE REPORT

6 months old boy born via emergency lower segment caesarean section at 37 weeks of gestation with weight of 2.07 kilogram, antenatally being diagnosed with esophageal atresia as evidence of absence of stomach bubbles. Proceeded with multiple surgeries (as summarised below).

OPERATIVE HISTORY

	OPERATION	INTRAOPERATIVE FINDINGS
1st operation (day 3 of life)	Bronchoscopy and open gastrostomy	Showed a small pit at the proximal trachea, mimicking a proximal TOF.
2nd operation (2 months)	Repeat Bronchoscopy	Findings of blunt opening at mid trachea level. With image intensifier guidance, Fogarty catheter was inserted and noted blind end pouch. **At this point of time, was decided for delayed anastomosis once achieved 5 kg*
3rd operation (6 months)	Bronchoscopy, gap assessment, cervical approach esophageal myotomy, right thoracotomy and delayed esophageal anastomosis (definitive surgery)	Noticed tracheal diverticulum found intraoperatively in which was excised and repaired.

HPE: Tissues lined by columnar epithelium with squamous metaplasia. Submucosa shows benign mucinous gland

At present, child was discharged home and thriving well.

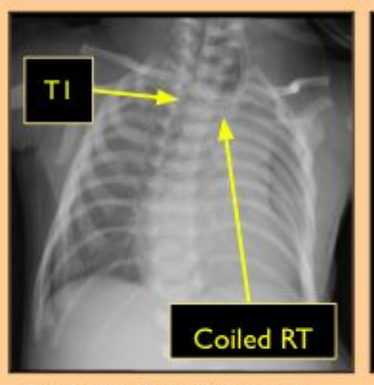

Figure 1 : Arrow showed coiling of ryles tube at T1

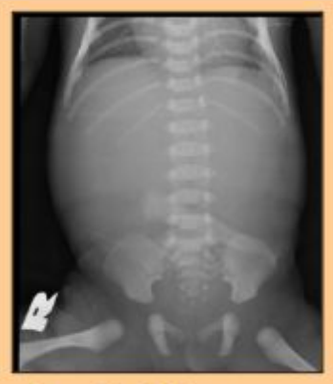
Figure 2 : Gasless abdominal x-ray

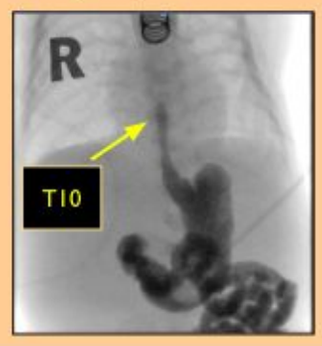

Figure 3 : Gastrogram showed reflux of contrast into the distal esophageal stump at T10

Figure 4 : Bronchoscopy images from first surgery

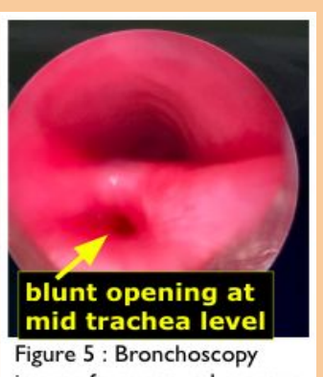

Figure 5 : Bronchoscopy images from second surgery

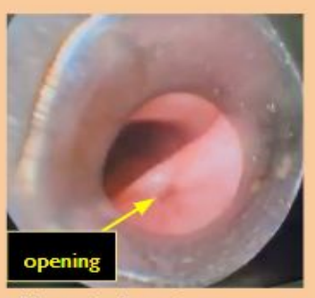

Figure 6: Bronchoscopy at 3rd op showed opening at proximal tracheal

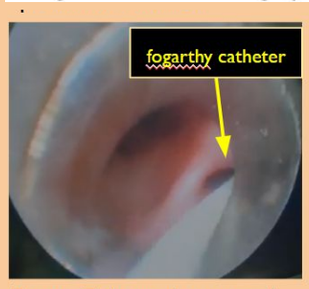

Figure 7: Introduction of fogarty catheter size 2Fr into the opening

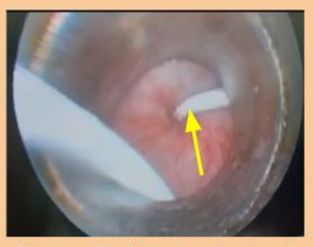
Figure 8: Arrow showed blind opening

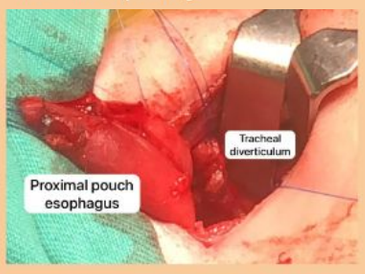

Figure 9: Tracheal diverticulum from proximal tracheal with no connection to esophagus

DISCUSSION

- EA/TEF rarely associate with congenital tracheal diverticulum
- Tracheal diverticulum can be classified into **congenital or acquired**
- Congenital tracheal diverticulum postulated due to the defect in endodermal differentiation during development of the membranous posterior tracheal wall or in the development of the tracheal cartilage. Possess **complete tracheal anatomy (respiratory epithelium, smooth muscle and cartilage)** and usually filled with mucus
- Acquired form is a recognised complication post TOF repair.
- Diagnostic modalities include **bronchoscopy** or **computerised tomography** of the thorax
- Management can be varied. Some suggest for **excision and repair** in symptomatic congenital case. Others suggested for conservative management in asymptomatic patient or in acquired form.

CONCLUSION

Recognising and treating these anomalies is of importance as patients may have unresolved respiratory issues or failure to extubate post EA/TEF repair.

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