Tracheo-Oesophageal Fistula/Oesophageal Atresia

- EA/TOF in 1:3000-4500 live births
- Cause not really known, likely genetic multifactorial. Thought due to incorrect separation of trachea and oesophageal from foregut
- More than 50% have associated anomalies

Associations

- Cardiac (29%) – ASD, VSD, Tet of Fallot
- Duodenal atresia, anorectal
- Genitourinary
- Intestinal malrotation
- T21, T18, 13q deletion
- Vertebral, skeletal
- VACTERL, CHARGE, Potters, Schisis

Classification

- Gross Classification (based on original Vogt Classification)
- 5 essential types with Type C commonest
- Look at images at end of summary

Diagnosis

- Suspicion on antenatal ultrasound with absence of gastric bubble
- Attempted orogastric tube insertion
- CXR
- Frothy mouth, choking on sputum and cyanotic spells
- Aspiration pneumonia is a late diagnosis

Table Okomoto's modification of the Spitz classification

Class	Description	Risk	Survival
I	No cardiac anomaly, BW ≥ 2000 g	Low	100%
II	No major cardiac anomaly, BW < 2000 g	Moderate	81%
III	Major cardiac anomaly, BW ≥ 2000g	Relatively high	72%
IV	Major cardiac anomaly, BW < 2000 g	High	27%

- Risk stratification by Okamoto modified Spitz Classification

Management

Pre-operative:

- Prevent aspiration with NGT or Reploge tube on suction into oesophageal sac
- Maintenance fluid given
- Nurses in head up 30 degrees or on side
- Scope to confirm anatomy
- Usually right posterolateral thoracotomy or left if right aortic arch found on echo
- THOROUGH discussion with surgeon regarding plan and backup plans is imperative

Intra-operative:

- Issues concerning one-lung ventilation
- Possible associated anomalies, particular concern with duct-dependent circulation
- CVP not usually needed but A-line essential
- Intubation and ventilation without insufflation imperative. IV/Volatile induction with spontaneous breathing until fistula ligation
- Variable ETT placement dependent on anatomy
- Desat causes: Leak with fistula ligation, lung compression, mediastinal deviation compression causing tracheal deviation or loss of cardiac output
- Use of phenylephrine if unrepaired tet with "tet spell"

Post-Operative

- Analgesia dependent on post op plan
- Opiates/regional all acceptable
- Likely to leave intubated until risk of respiratory compromise past

- Possible complications:
  - Early - Anastamotic leaks, oesophageal stricture and recurrence of fistula
  - Late – Reflux disease, tracheomalacia and changes in quality of life

Gross	-	Type A
Vogt	Type 1	Type 2
	Oesophageal agenesis. No fistula present	Proximal and distal oesophagea stumps with