Delayed Thoracosopic Foker Lengthening & Kimura Advancement in a one year old

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Aim
To assess the feasibility of a thoracosopic internal Foker Esophageal Lengthening Technique (FELT) and a Kimura Extrathoracic Esophageal Elongation (EEKE) to achieve a delayed primary esophageal anastomosis in a 1 year old with long gap esophageal atresia

Method
As a neonate
Primary esophageal anastomosis via right thoracotomy in a newborn with esophageal atresia was abandoned despite right neck dissection. Left cervical esophagostomy was formed and feeding by mouth was continued for one year (Fig 1).

Aged 1 year
The gap was assessed, a small hiatus hernia was identified on gastroscopy and a distal TOF pit on Bronchoscopy (Type C Fig 2+3). Using 3mm instruments, the distal esophagus was then lengthened thoracoscopically, suturing it to the second intercostal space using monofilament sutures, radiopaque catheter segments and EndoClose™ (Fig 4+5).
The cervical esophagostomy was elongated to below the clavicle on the left.

8 weeks later
Mobilisation of the cervical esophagus was performed.
Cluttons dilator was passed from the left neck behind the trachea entering the apex of the right thorax exiting via a thoracosopic port site.
A chest drain was introduced over the dilator and pulled back into the left neck. Here, the esophagostomy was sutured to the drain and subsequently pulled out of the right chest (Fig 6).
A thoracosopic end to end esophageal anastomosis at the thoracic inlet was performed with 3/0 braided absorbable suture (Fig 7).

Result
Post-op Day 5
Patient was extubated and gastrostomy feeds were recommenced.
Post-op Day 8
The right intercostal and left neck drains were removed
Post-op Day 12
Oral soft diet was commenced.
Post-op 5 months
An anastomotic stricture has required dilatation 5 times; Topical Mitomycin therapy is planned.

Conclusion
• Thoracoscopic internal esophageal lengthening and extrathoracic elongation of the esophagus can be delayed for up to 12 months.
• Thoracoscopic anastomosis of a left cervical esophagostomy to distal esophagus in the right hemithorax is feasible.