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Successful primary repair of long-gap esophageal atresia in a neonate employing circular myotomy on upper pouch and hemi-circular myotomy of the distal esophageal pouch: A novel approach

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Introduction: Pure esophageal atresia (EA) with a long gap between the pouches remains a challenge for a primary repair. Several techniques to facilitate primary repair of this defect have been described: complete mobilization of distal esophageal pouch, single or double circular myotomies or spiral myotomy of upper pouch, circular myotomy of both upper and lower pouches, flaps raised from the upper pouch to bridge the gap and external traction sutures. Complete mobilization of upper pouch with circular myotomy is standard and often favored approach. It is feasible due to the anatomical advantage of blood supply of the upper pouch. Although complete mobilization of lower pouch with or without circular myotomy is described, it has a risk of impairing blood supply to the lower pouch due to segmental nature of its blood supply. We present a novel case of primary repair of long gap esophageal atresia using a circular myotomy on the upper esophageal pouch along with a hemi-circular myotomy of the lower pouch, the latter is done without complete circumferential mobilization of the lower esophageal pouch.

Case Report: We report the case of a 38 4/7 weeks IUGR term infant with tetralogy of Fallot (TOF) with a long 4.5 cm gap pure esophageal atresia who was repaired aged 16 weeks. Per-operatively, gap assessment was done on the operating table and the gap was almost five vertebral bodies. The upper pouch was mobilized completely up to neck. Upon reassessment, a further 2.5 cms gap was found. The upper esophageal pouch was small and narrow, hence unsuitable to facilitate flap reconstruction and only a single circular myotomy was performed approximately 1 cm proximal to its blind end. The lower pouch was mobilized taking care that its blood supply was not compromised. This still left a one cm gap that was overcome by performing a hemi-circular (180 degree) myotomy on the lower esophageal pouch approximately 1 cm away from the blind end. A tension free primary esophageal anastomosis was then performed. The anastomosis did not leak albeit developing a stricture, which is amenable to balloon dilation. The infant had three esophageal dilations and the last one dilated the stricture successfully to 10 mm.

Conclusion: Hemi-circular myotomy of the lower esophageal pouch can help to achieve adequate lengthening of the pouch without compromising its blood supply and can help in facilitating a tension-free primary repair of long gap esophageal atresia. This technique has lesser risk of compromising blood supply to the distal esophageal pouch as it does not require full circumferential mobilization of the lower pouch as required with full circular myotomy.

Biography

Dr Afridi was Born in Peshawar Pakistan and she proceeded to England after MBBS and worked towards her MS, MRCS and PhD degrees (Candidate 2018) before moving to USA to join her husband, also a physician. She is enjoying the move personally and professionally. She is based in Morgantown at Ruby Memorial Hospital, West Virginia University, USA..

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