

Esophageal Atresia Associated with Anorectal Malformations: Importance of the Size of Gastric Bubble in Deciding the Stages of Surgery

Shasanka Shekhar Panda*, Aparajita Panda**, Meely Panda***, Rashmi Ranjan Das****, Pankaj Kumar Mohanty*****

*Department of Pediatric Surgery, **Department of Anaesthesia,****Department of Pediatric, All India Institute of Medical Sciences (AIIMS), Bhubaneswar-751019. ***Lecturer, Indian Institute of Public Health (IIPH), Bhubaneswar- 751024, India. *****Department of Neonatology, Institute of Medical Sciences and SUM Hospital, Bhubaneswar - 751003, India

Dear Sir,

Esophageal atresia (EA) with a distal trachea-esophageal fistula (TEF) may lead to excessive distention of the stomach due to inhaled air passing through the distal fistula [1]. Gastric distention and subsequent perforation has been described in patients with EA and TEF who require assisted ventilation, where the air may be preferentially pushed through the fistula into the stomach, leading to its dilation and perforation [2, 3]. Gastric perforation can be a complication in EA patients with a distal TEF, even in the absence of preoperative mechanical ventilation [4]. Stomach distention may occur in patients with EATEF without assisted ventilation if the fistula is large. Reflux of bile and gastric contents through the large fistula to trachea-bronchial tree further damages the lung in addition to saliva from upper pouch.

As per the study by Singh et al, the day of presentation and abdominal distension had no significant effect on survival of neonates of EATEF associated with ARM [5]. But in patients with EATEF associated with ARM, abdominal distention increases with the day of presentation and risk of gastric perforation increases if the distal TEF is large. So in these patients after initial stabilization, as the first stage procedure for the surgical management of ARM i.e., anoplasty for low ARM and colostomy for high and intermediate ARM, distal TEF should be tackled either by thoracotomy and ligation or by bronchoscopy and fogarty catheter occlusion. Some

surgeons put catheters through the distal TEF to decompress the stomach as the first stage during ARM surgery.

Patients with EATEF associated with ARM who presented with stomach and abdominal distension usually require ventilatory support after first stage of ARM surgery. In the post operative period the risk of gastric perforation will increase due to further increase in distention of stomach and has significant effect on survival. So in patients with EATEF associated with ARM the size of gastric bubble is important in deciding the stages of surgery.

Fig. 1: X-ray chest and abdomen antero-posterior view with red rubber catheter in upper esophageal pouch of a case of esophageal atresia and tracheoesophageal fistula associated with high anorectal malformation (Arrow: Distended stomach)



Corresponding Author: Dr. Shasanka Shekhar Panda, Assistant Professor & in-charge, Department of Paediatric Surgery, All India Institute of Medical Sciences, Bhubaneswar, Odisha, India, 751019.

Email: drshasank_aiims@yahoo.co.in

References

1. Singh S, Wakhlu A, Pandey A, Singh A, Kureel SN, Rawat J et al. Esophageal atresia associated with anorectal malformation: Is the outcome better after surgery in two stages in a limited resources scenario? *J Indian Assoc Pediatr Surg* 2012; 17: 107-10.
 2. Spitz L. Oesophageal atresia. *Orphanet J Rare Dis* 2007; 11: 24.
 3. Holcomb GW. Survival after gastro-intestinal perforation from esophageal atresia and tracheoesophageal fistula. *J Pediatr Surg* 1993; 28: 1532-5.
 4. Jones TB, Kirchner SG, Lee FA, Heller RM. Stomach rupture associated with esophageal atresia, trachea-esophageal fistula, and ventilatory assistance. *AJR* 1980; 134: 675-7.
 5. Rathod KK, Bawa M, Mahajan JK, Samujh R, Rao KL. Management of esophageal atresia with a trachea-esophageal fistula complicated by gastric perforation. *Surg Today* 2011; 41: 1391-4.
-