

## Letter to the Editor

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## Staged repair of esophageal atresia, tracheoesophageal fistula, and duodenal atresia in a newborn

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### DEAR SIR

Congenital duodenal obstruction is a rare anomaly, occurring in 1 in 7,000 cases [1]. The incidence of esophageal atresia (EA) combined with duodenal obstruction is estimated to be 3-6% [2]. Notably, there is no established consensus or protocol for the surgical management of this combination of malformations [2,3]. In this report, we present a case involving EA/tracheoesophageal fistula (TEF) and duodenal atresia (DA) attributed to annular pancreas (AP), detailing their successful staged management.

A female neonate, born at term but small for gestational age (1,860g), with a history of polyhydramnios and intrauterine growth restriction, exhibited excessive oral secretions and feeding difficulties postnatally. Initial X-rays indicated a distended stomach and absence of air in the distal bowel, raising suspicion of duodenal obstruction and EA with TEF (Fig. 1). Despite attempts, orogastric tube placement was unsuccessful. Subsequent imaging revealed no vertebral anomalies, but the presence of duodenal obstruction and EA with TEF was confirmed. An orogastric tube was placed in the mid-thoracic esophagus for continuous negative pressure suction. Cardiac and abdominal ultrasounds identified non-hemodynamically significant cardiac issues and an arteriovenous anastomosis in the right hepatic lobe.

On the fifth day of life (DOL), surgical intervention revealed atretic duodenal segments and annular pancreas at the second to third parts of the duodenum. Following malrotation identification, the patient underwent duodenoduodenostomy with a diamond-shaped anastomosis and Ladd's procedure.

A gastrostomy tube was placed for gastric decompression and feeding. Post-operatively, the patient developed septicemia but recovered after antibiotic treatment. On the 18th DOL, EA/TEF repair was performed. Enteral nutrition (EN) via

gastrostomy commenced on the 21st DOL, and total EN was achieved by the 32nd DOL. The patient was discharged on the 39th DOL, weighing 2260g (4th percentile), and exhibited favorable progress at 12 months of age.

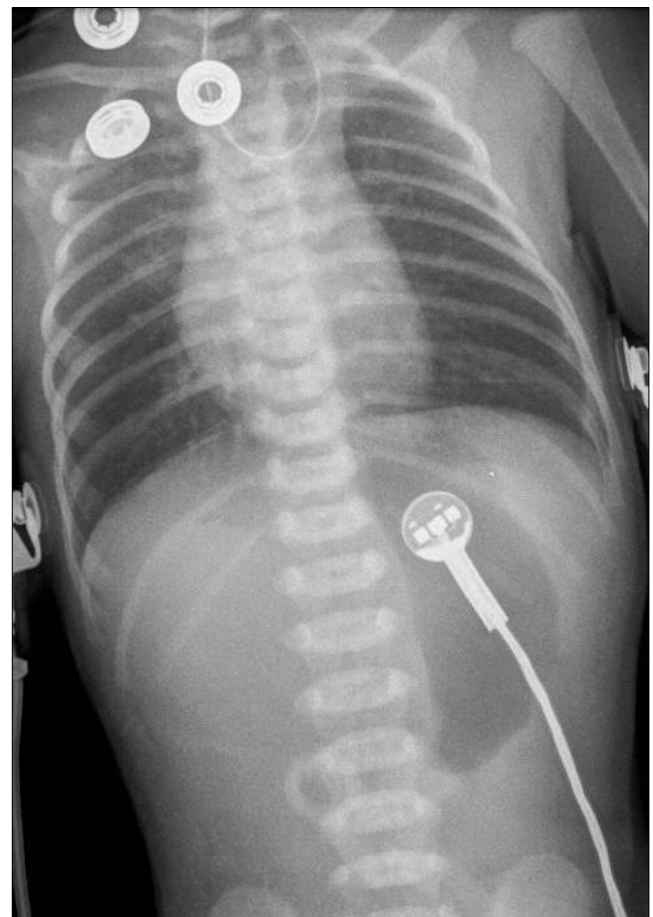


Figure 1: The initial X-ray showing the distended stomach, absent air in the distal bowel, and coiling of the tube at the level of the fourth thoracic vertebra suggestive of duodenal obstruction (stenosis or atresia) and esophageal atresia and tracheoesophageal fistula accordingly

Several authors, including Spitz et al., Ein et al., Nabzdyk et al., Cao et al., Dave et al., and Thompson

et al., have described diverse management approaches for TEF/EA and DA [2,4,5,6,7]. Our experience supports a staged repair strategy, initiating with primary gastric decompression and duodenoduodenostomy followed by EA/TEF repair. Early EN through gastrostomy, coupled with vigilant nutritional intervention, leads to a high-quality life without significant complications. Our data suggest that, in stable neonates not requiring respiratory support, delayed EA/TEF repair in the subsequent operating session is feasible, emphasizing the importance of individualized patient care.

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