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CASE REPORT

Primary Posterior Sagittal Anorectoplasty and Repair of Esophageal Atresia with Tracheoesophageal Fistula in the Same Sitting

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Abstract

Esophageal atresia and tracheoesophageal fistula is often associated with anorectal malformation. Traditionally, staged surgeries are performed in this condition. We did a successful repair of esophageal atresia and tracheoesophageal fistula and primary posterior sagittal anorectoplasty for anorectal malformation in the same sitting.

Key words: Anorectal malformation; Esophageal atresia; Primary posterior sagittal anorectoplasty; Tracheoesophageal fistula

INTRODUCTION

The incidence of various associated anomalies with esophageal atresia varies between 40% and 55%. Among the associated anomalies, anorectal anomalies constitute 14% [1]. Traditionally, staged surgeries are performed for associated anomalies; however, primary repair of both the anomalies can be possible in selected patients. In the present case, we have performed simultaneous repair of esophageal atresia and primary posterior sagittal anorectoplasty (PSARP) for intermediate anorectal malformation.

CASE REPORT

A 2-day-old boy weighing 2 kg presented to us with a history of failure to swallow milk, regurgitation, and drooling of saliva along with absent anal opening. The neonate was born to 38 weeks primigravida. He cried soon after the birth. There was no significant in antenatal history. On examination, his mouth was full of saliva, and there was failure to pass red rubber catheter beyond 10 cm from the gingival margin. Anal opening was absent, midline raphe was poorly developed, and abdomen was moderately distended. Bilateral radial ray defect was present. Routine blood examination, blood urea, serum, and creatinine were within normal limits. Babygram showed coiled nasogastric tube in esophagus, and there was air in gut suggestive of esophageal atresia and tracheoesophageal fistula (Figure 1). Prone cross-table lateral X-ray was suggestive of intermediate anorectal malformation (Figure 2). Echocardiography showed small patent ductus arteriosus (2.3 mm) with a left to right shunt.

He was operated by right posterolateral thoracotomy using extra pleural approach and fistula site identified (gap length 2 cm), transfixed and end to end interrupted esophageal anastomosis was performed using the standard technique. Thereafter, the neonate was put on prone jackknife position safeguarding the position of the endotracheal tube and urinary catheter. A midline perineal incision was given, sphincter and muscles were cut strictly in the midline. The rectal pouch was identified, and mobilised using wet gauge piece and bipolar cautery. The meconium was aspirated. The fistulous opening was identified marked by stay suture. Submucosal dissection was performed and fistula site closed. Subsequently, anorectoplasty performed using Penna's technique. Total operative time was 2 h and 15 min. Throughout, the operation, he maintained vital parameters. The baby was extubated soon after the surgery was over and shifted to the surgical neonatal intensive care unit. In the post-operative period baby was nursed in head up and lateral position. The patient was managed by intravenous fluid, broad-spectrum antibiotics and blood transfusion and frequent oral suction and nebulization. He

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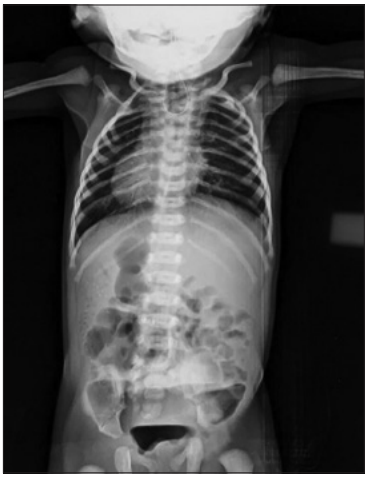

Figure 1: X-ray photograph showing coiled nasogastric tube in the esophagus and air vesicogram

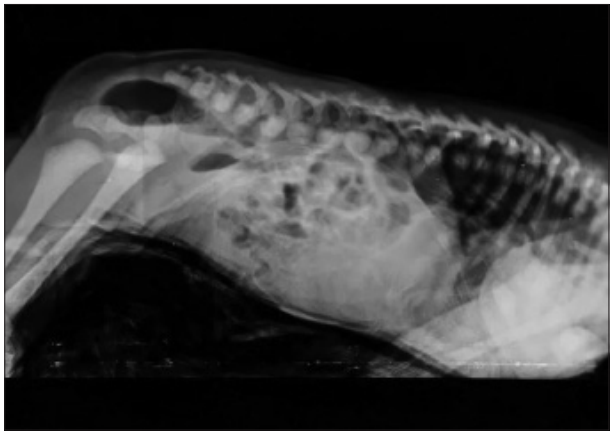

Figure 2: Prone cross table lateral X-ray showing gas shadow between PC line and I line indicating intermediate anorectal malformation

started passing meconium from 2nd post-operative day onward. Tube feeding was started 3rd day onward. Oral feed was started from 7th post-operative day onward after doing the dye test that excluded the anastomotic leak. The baby was discharged on the 10th post-operative day. The baby was gaining weight in follow-up visit at 3 months and was advised regular anal dilatation.

DISCUSSION

The incidence of various associated anomalies with esophageal atresia varies between 40% and 55% [2]. The anomalies may be single or multiple, minor or major, detected at birth or later on. Furthermore, the infants weighing <2 kg have higher incidence of associated anomalies when compared to those weighing more than 2.5 kg [3]. Most of the anomalies are salvageable and require some form of surgical intervention early in the child's life. VACTERL associations have high mortality if associated with major cardiac anomalies [4]. With the improvement of surgical skill and neonatal facility, the management of anorectal malformation noticed drastic changes as single-stage neonatal repair has been performed across the globe with the reasonable result over the staged procedure [5]. Although Byun *et al.* have reported a high mortality rate in patients with ARM associated with esophageal atresia [6]; excellent survival has been reported by Singh *et al.* [7]. The improved outcomes are mainly due to improvements in better antenatal care, neonatal intensive care, nutritional support, and advance of anesthetic and surgical practices. Gangopadhyay *et al.* in their study demonstrated less mortality in a single stage in comparison to the staged procedure at the follow-up at 1 year [8]. Different authors have stated that only severe cardiac disorders and extremely low birth weight and ventilator dependent pneumonia are better predictors of higher mortality rates in these patients [9]. Our patient had none of these complications and survived concurrent primary repair of esophageal atresia and PSARP for intermediate anorectal malformation. This approach is preferable to colostomy as there are better chances of development of brain cortical anal reflex in developing neonate.

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