A case of tracheoesophageal fistula 'H' variant

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ABSTRACT

Tracheo esophageal fistula without an associated esophageal atresia (H – variant) is one of the rare anomalies (incidence being 4.2%). According to the American academy of pediatrics survey which was done in 1964, 1058 cases of tracheoesophageal fistula cases reported out of which only 4.2% were tracheoesophageal fistula without any esophageal atresia. Most of the cases were mis-diagnosed during neonatal period and were treated as pneumonia. In a large survey done by Killen and Greenle in 1965 it has been reported that the diagnosis was made within the first month of life in 43% and with in first year in 83%. We report a case of tracheo esophageal fistula where diagnosis was missed on day one of admission as naso-gastric tube was passed in to stomach with out difficulty and child was treated for respiratory distress. Diagnosis was made on day two as there was excessive pooling of secretions, there was coiling and difficulty in passing nasogastric tube. As respiratory distress did not subside, a repeat chest x-ray plain was taken which confirmed coiling of the naso gastric tube. Diagnosis was confirmed by contrast (gastro graphin) x-ray taken at different time intervals. In this child there were no any other systemical or physical anomalies noted.

Key words: Naso-gastric tube, tracheaesophageal fistula, Gastro graphin, transanastomotic tube.

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INTRODUCTION

'H' type, tracheoesophageal fistulas account for 4.5% of all congenital tracheoesophageal mal formations. According to the American academy of pediatrics survey which was done in 1964, 1058 cases of tracheoesophageal fistula cases reported out of which only 4.2% were tracheoesophageal fistula without any esophageal atresia.[1]

ANATOMICAL CHARACTERISTICS	PERCENTAGE
Esophageal atresia with distal TEF	86
Isolated esophageal atresia with TEF	08
Isolated TEF	04
Esophageal atresia with proximal TEF	01
Esophageal atresia with proximal and distal TEF	01

The clinical features differ in different cases, the common one being the recurrent respiratory symptoms, aspiration, cyanosis, abdominal distension. The early diagnosis of this disorder is difficult and some cases may remain undiagnosed, until late in infancy or childhood. The first surgical repair of such a defect was reported by Imperatori in 1939. We are reporting a case of 'H' type trachoesophageal fistula that was diagnosed after 24 hours of birth.

CASE REPORT

A post natal day one, 4 hours old female baby weighing 2.6 kilograms born to a primi mother with normal vaginal delivery was brought to NICU with complaints of respiratory distress. Initially nasogastric tube has been passed on day one and an x-ray was taken (fig.1), baby was treated with intravenous fluids and antibiotics for respiratory distress. On day two there was pooling of secretions and a naso gastric tube was tried to pass but there was resistance, when an x-ray was taken (fig.2) there was coiling of tube, there were no co existing anomalies. A contrast (gastro graphin) x-ray (fig.3) was taken at 1 minute, 3 minutes, 5 minutes and 10-minutes interval to confirm whether it was a congenital esophageal stenosis or a variant of tracheoeso phageal fistula and a 'H' type tracheoesophageal

fistula was diagnosed. Baby was put in semi upright position, i.v fluids and empirical antibiotics were continued. A complete blood picture and coagulation factors were checked. Ultrasound abdomen and 2D-echo were unremarkable. Baby was shifted to pediatric surgeon for correction of anomaly.

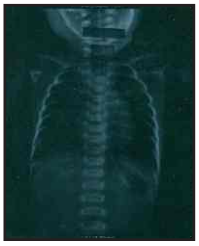
Figure 1

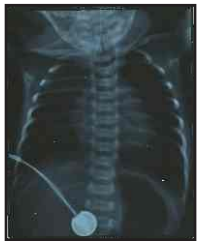
Figure 2

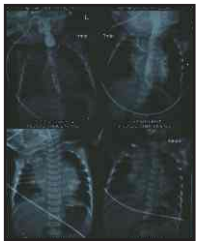
Figure 3

Figure 1: X-ray showing nasogastric tube in situ on day one

Figure 2: X-ray showing coiling of nasogastric tube on day two

Figure 3: A contrast x-ray (gastro graphin) taken at various intervals confirming TEF

DISCUSSION

Most infants with esophageal atresia with tracheoesophageal fistula have proximal atresia with distal tracheoesophageal fistula. They are easily diagnosed soon after birth with apparent clinical features. Nevertheless, 'H' type tracheoesophageal fistulas are not diagnosed soon after birth because of patent esophagus. Many diagnostic methods have been advocated for diagnosis of 'H' type fistula. Esophagogram is usually a reliable method to identify congenital 'H' type fistula. Though often difficult requiring multiple attempts before the defect is confirmed. Further more contrast-enhanced studies have the potential risk of aspiration pneumonia, therefore a resuscitation kit should be at the hand. Endoscopic methods like bronchoscopy and esophagoscopy have the advantage of being diagnostic and allowing placement of catheter around the fistula to assist its localization during surgery. 'H' type tracheoesophageal fistula is associated with other malformations in about 30% of cases, including VACTERAL/VATER, CHARGE SYNDROME, congenital esophageal stenosis Goldenhars Syndrome and syndactyly.[2,3,4] The index case has none of these associations.

Different surgical approaches have been described for this anomaly.[5] For proximally located fistula choice is cervicotomy and in cases of distal fistula, thoracotomy is the choice of approach. Alternative thoracoscopic approach has been recently reported by Allal et al.[6]

In present case cervical approach was chosen for preservation of the recurrent laryngeal nerve. Post operatively head end of the bed is kept in slightly elevated position and suctioning was done in this child to prevent aspiration. Child was put on maintenance i.v fluids and transanastamotic tube feeds were started on post operative day 2. A contrast study was done on postoperative day 5 ,as there were no leaks oral feeds were commenced and the out come was satisfactory in the present case.

TAKE HOME MESSAGE:A high index of suspicion in a new born when it presents with RDS like picture not subsiding for days even with appropriate treatment, should be raised in case of 'H' type tracheoesophageal fistula until proved otherwise. Such patients should be thoroughly investigated to demonstrate the anomaly and treated appropriately.

REFERENCES

1) Holder TM, cloud DT, lewis JE, pilling GP. Esophageal atresia and tracheo esophageal fistula; a survey done by American academy of pediatrics, pediatrics 1964; 34:542-49

2) Genty E, Attal P, Nicollas R, Roger G, Triglia JM, Garabe- dian EN, Bobin S. Congenital tracheoesophageal fistula without esophageal atresia. Int J PediatrOtorhinolaryngol 1999;48: 231-8.

3) Crabbe D. Isolated tracheo-oesophageal fistula. PediatrRespir Rev 2003;4:74-8.

4) Biechlin A, Delattre A, Fayoux P. Isolated congenital tracheoesophageal fistula. Retrospective analysis of 8 cases and review of the literature. Rev Laryngol Otol Rhinol 2008;129:147-52.

5) Brookes JT, Smith MC, Smith RJ, Bauman NM, Manaligod JM, Sandler AD. H-type congenital tracheoesophagealfistula: University Of Iowa experience 1985 to 2005. Ann Otol Rhinol laryngol 2007;116:363-8.

6) Allal H, Montes-Tapia F, Andina G. Thoracoscopic repair of H-type tracheo-esophageal fistula in the newborn: a technical case report. J Pediatr Surg 2004;39:1568-70.