

# Encounter with undiagnosed H-type of tracheoesophageal fistula during intubation

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## Abstract

To the editor:

Cardiac lesions in newborn babies can present with some surprise in form of associated problems. This can be troublesome for the anesthesiologists in the operation theater. We report such a problem due to unidentified tracheo-esophageal fistula.

A two days old male baby weighing 2.4 kg was referred to our hospital for the ligation of patent ductus arteriosus (PDA). His two dimensional echocardiography revealed a large PDA with no other associated cardiac anomaly. He had history of bouts of cough during feeding and had been evaluated for gastrointestinal anomalies like esophageal Atresia, tracheo-esophageal fistula (TEF) and hiatus hernia. Venous and arterial catheters were secured before wheeling the baby into operation- theater (O.T) after giving intravenous Ketamine 1.5mg/kg, midazolam 0.1mg/kg and atropine 0.15 mg. On arrival into the O.T he was monitored with ECG, invasive arterial blood pressure and plethysmography (SpO<sub>2</sub>). His trachea was intubated with 3.5mm (internal diameter) uncuffed endotracheal tube (ETT) after supplementing anesthesia with Ketamine, 0.5mg/kg; fentanyl 5mcg/kg and pancuronium 0.15mg/kg. . On auscultation, air entry was bilaterally equal but the sound of air entering into the stomach was also present. His end-tidal CO<sub>2</sub> never reached more than 10mm of Hg and gradually oxygen saturation fell to 60%. Considering an esophageal intubation, ETT was removed and he was ventilated with face mask on 100% oxygen. Soon his saturation improved to 100%. Endotracheal intubation was tried again. Although intubation was not difficult but the same problem occurred repeatedly.

Finally, suspecting a TEF, we pushed the ETT inside the trachea till the sound of air entering into the stomach

disappeared. His oxygen saturation did not decrease to <95% and end- tidal CO<sub>2</sub> was 26-28 mm of Hg. A Ryle's tube was inserted to decompress the stomach and a decision to carry out the procedure was taken.

His PDA was ligated successfully in right lateral position and after operation he was shifted to intensive care unit. After removal of the chest tube, he was re-evaluated for TEF and was found having an H-type (Gross classification) of TEF.

Congenital heart diseases (CHD) is most common form of congenital disease and accounts for nearly 30% of the total incidence of congenital diseases which is approximately 7 to 10 per live births (0.7 to 1.0%).<sup>1</sup> 10 to 15% of children afflicted with CHD, are found having co-existing musculoskeletal, genitourinary or gastrointestinal anomalies. TEF is a common association with large PDA and should always be ruled out.<sup>2</sup> Type C (Gross classification) is the most common type of TEFs and H-type is a rare variety but is the most difficult type of TEFs to diagnose. During intubation in an undiagnosed but clinically suspected TEF, keeping the ETT just above carina by auscultating chest bilaterally and abdomen can help when fibre-optic bronchoscope is unavailable in all type of TEFs. Further placement of Ryle's tube prevents distention of stomach and regurgitation.

In conclusion, child with congenital heart disease can land up in the O.T anytime with missed co-existing disease. These missed anomalies can create surprises and we should always be prepared to deal with such unanticipated difficulties in controlling and securing airway.

## References

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