

# Anaesthetic management of neonate with Tracheoesophageal fistula – A case report of our Experience .

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**Abstract :** A case of 3day old neonate weight 1.1kgs diagnosed with TOF with esophageal atresia was scheduled for TOF primary repair surgery. Safe and effective anesthesia for neonates undergoing surgery is one of the most challenging task presented to anesthesiologist in neonates with low birth weight. This congenital defect can be complicated by respiratory distress, aspiration and other congenital anomalies. The knowledge and ability of the Anesthesiologist to anticipate the challenges in managing neonates presenting for repair plays important in their treatment and survival. Anesthetic management focus on securing airway, avoidance of gastric distension and adequate ventilation with intra operative monitoring and prevention of hypoxia to patient during the procedure. Outcomes in neonates with TOF/OA have improved significantly due to advances in surgical, anesthetic and critical care management

## INTRODUCTION :

Tracheoesophageal fistula is a congenital anomaly(TOF) with or without esophageal atresia with incidence of 1 in 3000-4000 births worldwide. In 50% cases TOF may occur in association with other congenital anomalies. When these patients are posted for surgical repair, they present a challenging task to anesthesiologists.

## CASE REPORT :

A 3day old neonate, female child, weighing 1.1kgs born preterm was diagnosed with tracheoesophageal fistula after birth. Primary repair ( ligation of fistula and esophageal anastomosis) was planned for this patient. The neonate has increased salivation and breast feeding with choking episodes since birth. Confirmation of esophageal atresia is done by passing a suction catheter orally, unable to pass it more than 10cm into the esophagus, and the diagnosis is confirmed by chest radiograph which demonstrates the catheter in the blind upper pouch on chest radiograph. Pre operatively assessment was done to rule out co-existing congenital anomalies no abnormalities present. To minimize risk of developing aspiration pueumonitis ,oral feeds were stopped, neonate kept in upright posture and intermittent suctioning of upper esophageal pouch is performed to decrease the accumulation of saliva.



fig 1. CXR : catheter blind

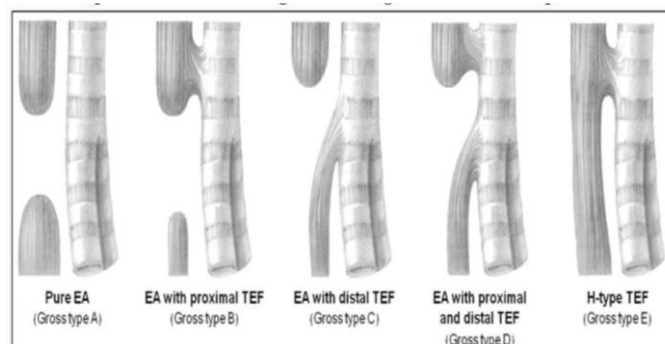


Fig 2 . Gross classification of TOF

In upper pouch.

All investigations were normal, on auscultation chest is clear with bilateral air entry .CVS examination was unremarkable.After proper ore anesthetic checkup, patient was taken up for primary complete repair of tracheoesophageal fistula. Intravenous line was secured using 24-gauge cannula. All routine monitors attached (ECG, SPO2, ETCO2, NIBP, TEMPERATURE) General anesthesia was planned and patient was induced with injection fentanyl 3mcg and injection thiopentone 5mg, after confirmation of bag and mask ventilation injection suxamethonium 2mg iv was given to facilitate intubation .successful intubation was done using uncuffed endotracheal tube of internal diameter 3mm and fixed after confirmation of equal bilateral air entry by auscultation of chest and capnogram.

Ventilatory settings had low tidal volume with high respiratory rate, maintenance of anaesthesia done with oxygen, sevoflurane and atracurium. child was positioned in lateral decubitus position for surgical repair, during the sugery mutiple episode of desaturation present where surgeons were asked to stop the procedure and retractor on the lung removed saturation improved spontaneously. surgery lasted for one and half hour. At the end of surgery extubation trial not given as patient planned for elective ventilation in neonatal icu care. Patient was extubation POD3 in Icu on the fourth day patient was discharged from icu in stable condition.

#### DISCUSSION

In general, in patients of TOF, securing airway without pulmonary aspiration and gastric distension with safe anesthetic dosage should be done. If patient presents with co-existing Vacterl anomalies diagnostic testing should be performed and to be managed according to the condition of the patient. Initial resuscitation should include airway protection, adequate iv access, fluid resuscitation, temperature stabilization, gastric decompression. Maintenance of adequate oxygenation can be a major intra operative problem, can be one lung ventilation leading to hypoxia, co2 retention, vagal response can occur in due to surgical airway a manipulation leading to brady cardia and cardiac arrest. ETT obstruction due to accumulation of blood and secretions in the endotracheal tube can lead to airway obstruction, requiring frequent suctioning and surgical airway manipulation and collapse of upper airways due to retractors can lead to multiple episodes of hypoxia it is important to have close communication with surgical team and intubation equipment should be readily available in case of accidental extubation and the need of emergency reintubation. prognosis after the repair depend on the maturity of the infant, whether other congenital anomalies are present and on pulmonary complications. Absence of these conditions, the prognosis is excellent. Peri operative prognosis can be assessed based on Splitz classification and The Montreal classification system. Outcomes in neonates with TOF/OA have improved significantly due to advanced surgical, anesthetic and critical care management.

#### CONCLUSION

TEF repair is a complex and challenging procedure, A cautious anaesthetic management with proper pre operative assessment,intra operative monitoring with anticipation potential perioperative problems and constant communication with surgeon and intensivists are essential in the treatment of neonate for better outcome of the patient.

#### REFERENCES :

1. Edelman B, Selvaraj BJ, Joshi M, Patil U, Yarmush J. Anesthesia practice: review of perioperative management of H-type tracheoesophageal fistula. *Anesthesiology Research and Practice*. 2019 Nov 3;2019.
2. Ladi SD, Kokari AR, Swami S. Anaesthetic management of tracheoesophageal fistula with accidental ingestion of button battery cell. *Indian Journal of Anaesthesia*. 2019 Jan 1;63(1):64-5.
3. Motshabi P. Anaesthesia for oesophageal atresia with or without tracheo-oesophageal atresia. *Southern African Journal of Anaesthesia and Analgesia*. 2014 Jan 1;20(5):19-25.