

## EARLY FEEDING THROUGH TRANSANASTOMOTIC TUBE IN POST-OPERATIVE CASES OF TRACHEOESOPHAGEAL FISTULA: OUR STUDY

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### Abstract

**Background:** With advanced neonatal intensive care support, the survival of neonates with esophageal atresia and trachea esophageal fistula has improved. The surgery has evolved from staged gastrostomy to the present day single stage primary repair. In our center, feeding has been conventionally initiated after a contrast esophagogram done at the seventh day post repair. The current study tried to assess the benefits and risks of initiation of early feeding in these patients by placement of a Tran's anastomotic feeding tube during the repair. **Material and Methods:** Eight out of sixteen patients had a trans anastomotic feeding tube feed inserted during trachea esophageal fistula repair on third postoperative day onwards and were followed up for different outcomes. **Results:** There was no significant differences in the rates of complications between the two sets of patients. However, the incidence of central line infections was lesser in the patients on early feed. **Conclusion:** The authors conclude that early tube feeding is safe and does not increase risks of anastomotic leaks.

## INTRODUCTION

Esophageal atresia, with or without tracheoesophageal fistula, is a common congenital disorder that should be considered in the differential diagnosis of a neonate who develops feeding difficulties and respiratory distress in the first few days of life.<sup>[1]</sup> Esophageal atresia is often associated with other congenital anomalies, most commonly cardiac abnormalities such as ventricular septal defect, patent ductus arteriosus or tetralogy of Fallot.<sup>[2]</sup> Prompt recognition, clinical management to prevent aspiration, referral to an appropriate tertiary care center and better intensive care set up have resulted in significant improvement in the rates of morbidity and mortality in these infants over the past 50 years.<sup>[1]</sup> Surgical repair has evolved from staged gastrostomy to a primary esophageal repair with ligation of fistula.<sup>[3]</sup> The type of fistula also mandates the nature of repair to be performed. In type C fistula, the procedure involves ligation of fistula with identification of both the pouches. This is followed by a non-tension primary anastomosis. We have performed the same procedure in sixteen patients with addition of transanastomotic tube.

## MATERIAL AND METHODS

Sixteen consecutive cases of trachea esophageal fistula repair were included. The diagnosis was made

with the help of plain radiographs after insertion of red rubber catheter. Only patients of the most common type of trachea esophageal fistula (Type C) were included. The patients underwent right posterolateral thoracotomy with ligation of the fistula and primary esophageal anastomosis. In sixteen patients a 6 Fr infant feeding tube was passed into the esophagus during performance of the anastomosis. The transanastomotic tube was kept in place by a suture fixation to the nares. Eight patients in the control group were kept on total parenteral nutrition till the seventh day post-surgery until a normal contrast esophagogram was obtained. In other eight patients in the experimental group trans anastomotic tube feed was started on third postoperative day. Both the groups were followed post operatively for immediate complications and survival.

## RESULTS

The post-operative complications of surgical site infection (SSI), sepsis, pneumonia, central line infection, duration of total parenteral nutrition and anastomotic leak were studied in the two groups. The mean gestational age and birth weights were not statistically different between the groups. In the experimental group surgical site infection in 2(25%), compare to control has 2(25%); sepsis in 1 (12.5%) baby in experimental group, in control group 2 (25%); pneumonia in 3(37.5%) in experimental

group, 3(37,5%)in control group; central line infection in 1 (12.5%) baby in experimental group,3 (37.5%) in control group. The duration of total parenteral nutrition varied between the two groups. The mean duration was 2 days in the experimental and 9 days in the control group.

## DISCUSSION

Tracheo-esophageal fistula is one among the common neonatal surgical emergency. The patients are generally brought in the very first day of life. The condition itself is not life threatening if not associated with other anomalies. Esophageal atresia is often associated with other congenital anomalies, most commonly cardiac abnormalities such as ventricular septal defect, patent ductus arteriosus or tetralogy of Fallot.<sup>[2,3]</sup> Congenital trachea esophageal fistula has been classified according to different systems. Type C in which the upper esophageal pouch is blind and the lower esophagus communicates to the trachea by the fistula is the commonest variant. This is the only type included in our study.

The chief cause of mortality in Tracheoesophageal fistula patients has been related to the post-operative care.<sup>[4]</sup> The conventional delayed onset of enteral feed with enhanced disposition to wound infection leads to sepsis and mortality.<sup>[4,5]</sup> In our tertiary level pediatric surgery center, it is traditional to start oral feed only after a proper contrast esophagogram is obtained. The patients are kept on total parenteral nutrition via central venous catheters till seventh postoperative day. In the present study, we have attempted to introduce enteral feeding via trans anastomotic feeding tube and assess the outcomes in terms of complications. The duration of TPN use has also been noted which is indirectly related to the cost of surgery. Trans anastomotic tubes have been used in European countries with moderate success.<sup>[3,6]</sup>

Its goal has been to introduce early feed, reduce TPN and central line sepsis.<sup>[6]</sup>

Interestingly, in our study, there have not been significant differences between the control and experimental group with respect to surgical site

infections, sepsis, anastomotic leaks and pneumonia. However, patients in the control group had a higher incidence of central catheter site infection. The duration of putting the baby on total parenteral nutrition was two days for the tube fed babies as compared to nine days for the babies in the control group. The cost of the surgery was higher with increased TPN use. We derive that trans anastomotic tube feeding is a favourable option and also with no significant rise in complication rates in primary repair of tracheo esophageal fistula. It also offers better cost effectiveness. Gut motility improves in early Tube feed and it provides better nutritional support to the babies. The early tube feed method if implicated Will useful in improving mortality rates and bring down the surgical costs.

## CONCLUSION

This study concludes that early transanastomotic tube feed in Tracheo-esophageal fistula postoperative newborn babies is safe and cost effective by reducing TPN duration and sepsis due to central line

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