A Single Center Experience of Pediatric Tracheostomy

The feasibility and safety of pediatric tracheostomy care at home by parents is challenging. Many physicians are not confident of sending tracheostomized children home. We describe our experience with 12 children who underwent tracheostomy and were sent home. Nine children were successfully decannulated. With proper training of parents, the outcome of home tracheostomy seems good.

Keywords: *Domiciliary care, Outcome, Tracheobronchomalacia*.

With the availability of quality pediatric critical care across India, many children require elective tracheostomies. However, most pediatricians have concerns regarding safety, feasibility and outcome of home tracheostomy care. We aimed to share our experience with tracheostomy care.

Hospital records of tracheostomized children from September 2014 to January 2018 were analyzed retrospectively, and information collected with respect to age, gender, parent's education, indication for tracheostomy, duration, complications, and follow-up.

In the study duration, twelve patients (10 boys) underwent tracheostomy. The median (range) age was 2 years (1 month to 15 years). Four out of 11 (36%) parents had not completed their higher secondary education. Indications of tracheostomy and outcome are presented in ***Table* I**. Only tracheobronchomalacia cases required home ventilation and respective duration of home ventilation in each case was 3 months, 4 months and 1 year. The median (range) hospital stay post-tracheostomy was 15.5 (5-55) days and home tracheostomy were 88 (35-850) days. Eight events of non- elective hospitalization were required in four patients; five were infective (pneumonia) and three were due to accidental tube displacement yielding an incidence of 2.14 and 1.28 events per 1000 home tracheostomy days, respectively. All tube displacements occurred in children below one year of age and within two months of home care. No complications were observed during tube change apart from minor bleeding. Nine (82%) children were successfully decannulated, one child was lost to follow-up and one child died at home after 38 days. One child (still on tracheostomy) was awaiting surgical reconstruction for tracheal stenosis by the time of submission of this manuscript. No major problems were encountered post-decannulation.

TABLE I Demographic and Clinical Characteristics of Patients Discharged With Tracheostomy

Case No	*Age/Gender*	*Indication of tracheostomy*	*Post tracheostomy hospital stay (days)*	*Home tracheostomy days*	*Outcome*
1	8mo/M	Tracheobronchomalacia	55	850	Decannulated
2	1mo/M	Tracheobronchomalacia	30	178	Decannulated
3	3mo/M	Tracheobronchomalacia	39	790	Tracheal stenosis*
4	7y/M	Tracheobronchitis	15	60	Decannulated
5	5y/M	CP and Severe pneumonia	9	82	Decannulated
6	2y/M	Meningoencephalitis	7	94	Decannulated
7	2y/F	Severe TBI	21	148	Decannulated
8	3y/M	Severe TBI	16	-	Lost to follow up
9	15y/M	Bilateral abductor palsy	5	35	Decannulated[#]
10	2y/F	Posterior fossa tumor	10	38	Expired
11	1y/M	Severe TBI	7	62	Decannulated
12	3y/M	Tetanus	35	0	Decannulated

*CP: Cerebral Palsy; TBI: traumatic brain injury; *child still on tracheostomy and awaiting surgical correction for tracheal stenosis; [#]Decannulated after surgical correction.*

This study suggests that home tracheostomy care by parents seems feasible in similar settings. Other studies on pediatric tracheostomy have shown successful decannulation rate from 15% to 77% [1-3]. Physicians concerns regarding safety and tracheostomy care of child at home are major hurdles for sending these children home. However, in our experience, the parents managed home tracheostomy well, and there were few complications.

In conclusion, if parents are properly educated and trained in tracheostomy care, it may be feasible and safe to send these children on home tracheostomy care with good outcomes.

Contributors: PKS: conceptualized the study, collected data, written, critically edited and finally approved the manuscript; NV: collected data and finally approved the manuscript.
Funding: None; *Competing interest*: None stated.

PRADEEP KUMAR SHARMA* AND NIKHIL VINAYAK
Pediatric Critical Care and Pulmonology,
Sri Balaji Action Medical Institute,
New Delhi, India.
**drsharma025@gmail.com*

REFERENCES

1. Alladi A, Rao S, Das K, Charles AR, D'Cruz AJ. Pediatric tracheostomy: A 13-year experience. Pediatr Surg Int. 2004;20:695-8.
2. Challapudi, G, Natarajan G, Aggarwal S. Single-center experience of outcomes of tracheostomy in children with congenital heart disease. Congenit Heart Dis. 2013;8:556-60.
3. Almeida JC, Esteves SS, Rosa F, Coutinho M, José GS, Sousa AS. Pediatric tracheostomy: The experience from a tertiary center in Portugal. Acta Otorrinolaringol Gallega. 2017;10:144-51.