



## Analysis of previous pediatric tracheostomies

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### Description

One of the most common planned therapeutic or emergency surgical treatments in patients with serious illness is tracheotomy. The first paediatric tracheotomy was carried out in 1620. Trousseau performed over 200 tracheotomies in 1833 as a result of diphtheria and airway blockage. Pediatric tracheotomy indications, procedures, and problems have evolved throughout time and in response to demographic changes. In our patients, hereditary problems like neuromuscular or metabolic disorders, for instance, increased the likelihood of tracheotomy. This is due, in part, to the high number of consanguineous unions in our area. Additionally notable as indicators are car accidents and suicide attempts. Indications, decannulation, and complications did not significantly differ between emergency and planned tracheotomies. These findings point to a rising need for intubation in paediatric patients.

Numerous institutions from all over the world reported shifting tracheotomy indications between 1968 and 2005, ranging from upper airway obstruction to prolonged intubation. According to our study,

tracheotomies for upper airway blockage are becoming more common. Our findings agree with those of earlier research. For instance, tracheotomies were frequently carried out in the 1970s for acute upper airway involvement brought on by viral illnesses. The reasons for tracheotomies for acute infectious diseases have significantly decreased as a result of the widespread use of antibiotics, advancements in intubation, and the Haemophilus influenzae type B vaccination in the treatment of acute epiglottitis or diphtheria. As a result, levels of different indications may fluctuate throughout time. As can be observed from the table, and in contrast to the literature, our study found that general physical damage connected to traffic accidents, electric shock injury, and early suicide attempt were particularly notable indications for tracheotomy. In children, upper airway obstruction is a frequent reason for tracheotomy. The primary causes of upper airway obstruction in our patients were head and neck cancer, including respiratory papillomatosis and subglottic hemangiomas, attempted suicide and hanging, electric shock, laryngeal web and stenosis, and the presence of foreign bodies. A tracheotomy may be necessary for some craniofacial syndrome patients due to severe glossptosis, macroglossia, or microretrognathia. Early identification of congenital laryngeal anomalies like web or stenosis is crucial. Therefore, a flexible endoscopic examination is essential. Prior to tracheotomy, the majority of our patients received flexible endoscopic evaluation. An incorrect diagnosis or a delayed tracheotomy procedure could be lethal. Even though tracheotomies are not frequently performed, serious complications could arise if the surgical guidelines are not followed. Depending on the study's methodology, the extent of patient follow-

up, and the type of complications, problems occur in anywhere between 5% and 40% of tracheotomies. In the literature, early complication rates range from 5.6% to 15%, whereas late postoperative rates also vary widely (7%–63%). In comparison to other studies, the rates in this one were significantly different. This might be as a result of the various patient counts, indications, and neonatal care clinic capacities. The paediatric and anaesthesia intensive care units were the most often used departments for tracheotomies. Access to the trachea and proper anatomic orientation are crucial for preventing early problems. The reasons for late complications vary. For instance, laryngeal injuries sustained in auto accidents can result in subglottic stenosis. Stenosis may result from blunt trauma to the larynx caused by tracheotomy. One of our patients had suprastomal granulation. This issue could arise from an infection or a foreign body reaction to the tracheotomy tube. A tracheoesophageal fistula is a rare discovery.

Due to erosion by the high-pressure tracheotomy cuff, the majority of tracheoesophageal fistulas are caused by human intervention. We believe that tracheotomy that is

monitored while being performed is crucial for avoiding issues like this. No further surgery was necessary after our original esophageal closure. Tracheocutaneous fistula were seen in two cases. This could happen if the tracheotomy tube is left in the same place for a long time, allowing the skin and tracheal mucosa to epithelialize. With surgical closure, this problem was satisfactorily resolved.

### **Conclusion**

As a result, we can say that, in our experience, paediatric tracheotomies differ in terms of the indication, the problems, and the length of the decannulation process. Upper airway obstruction was the most typical reason for juvenile tracheotomies in our investigation. Tracheotomy-related complications mirrored those previously described in the literature. The most frequent surgical complication in our patients was accidental decannulation. This can be avoided by increasing the number of beds in intensive care units, hiring more experienced staff, and appropriately educating families. Age groups under 18 will also require immediate and ongoing follow-up.