

## A CASE OF ADULT TRACHEO CUTANEOUS FISTULA

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| <b>Dr. Shiva Lakshmi*</b> | Post graduate, Department of Anaesthesiology MVJ Medical college and Research hospital hosakote *Corresponding Author |
| <b>Dr Prasad kulkarni</b> | Professor & Head of the department, Department of Anesthesiology, MVJ Medical college and research Hospital, HOSAKOTE |
| <b>Dr Shailesh Kumar</b>  | Associate professor Department of Anaesthesiology, MVJ Medical College And Research Hospital, HOSAKOTE                |

**ABSTRACT**

Tracheo-cutaneous fistula, or persistent tracheal stoma, is a potential late complication of a tracheostomy. It commonly occurs in children due to a failure of spontaneous closure after decannulation. In adults, however, this is relatively less common. Described is a case of a 22-year-old female who, despite undergoing early and successful decannulation, presented with a persistent tracheal stoma with past history of dengue meningoencephalitis and MODS.

**KEYWORDS :** Tracheo-cutaneous fistula, persistent tracheal stoma

**BACKGROUND**

Tracheostomy is a general procedure in which a surgical airway is created in the cervical trachea. A tracheostomy orifice closes by second intention in many routine cases. However, the orifice sometimes epithelializes and develops a trachea cutaneous fistula, especially if the healing course is prolonged or the patient poor nutritional status, immunosuppression (high-dose steroids, etc.), radiotherapy, infection, granulomatous disease, distal obstruction due to bilateral vocal cord paralysis, and tracheal stenosis

**CASE PRESENTATION**

A 22-year-old woman was scheduled to undergo surgery to close her trachea cutaneous fistula. The patient had previously undergone tracheostomy with an inverted U-shaped tracheal incision and mechanical ventilation for Dengue meningoencephalitis and MODS with sepsis 3 months earlier. Although she recovered from her previous condition after 1.5 months of tracheal cannulation, she subsequently developed a trachea cutaneous fistula due to the prolonged course of healing and poor nutritional status and infection. On examination, heart rate was 90 beats/min and blood pressure 120/70 mm of Hg. Airway examination showed mouth opening of three finger breadth and normal neck movements.

There was a fistula present in the lower part of the neck in the midline below the level cricoid cartilage. Surrounding skin was normal. There was no discharge seen regional nodes were not enlarged. Air leak test performed-positive. Investigations CBC, RFT, RBS, ECG were done and in normal limits



**Figure 1:** Shows air leak test performed with cotton swab

The patient was explained about the risk associated and plan for awake fibre optic intubation if required. Informed consent

and consent for fibreoptic intubation were taken.



**Figure 2:** Fibreoptic bronchoscope performed after endotracheal intubation

In the OT, non-invasive blood pressure, pulse oximeter and 5 lead electrocardiography were connected and vitals noted. Pre medicated with Intravenous (IV) glycopyrolate 0.2 mg and fentanyl 2mics/kg/BW was administered. Airway was prepared with nasal and oropharyngeal sprays with 10% lignocaine, induced with 2mg/kg BW propofol and relaxed with vecuronium 6mg and intubated with a size 7 endotracheal tube fixed at 20cm after confirming bilateral air entry equal. Then fibreoptic bronchoscopy was performed through endotracheal endotracheal tube and patient was maintained on oxygen, nitrous oxide and volatile agent Vitals were maintained within normal limits. At the end of the surgery, muscle relaxation was reversed with injection neostigmine 0.05mg/kg BW and injection glycopyrolate 0.01mg/kgBW and patient was extubated after thorough oral suctioning vitals were stable.

**DISCUSSION**

Tracheostomy is a procedure in which a surgical airway is created in the cervical trachea. It is commonly done in patients who have difficulty when removed from a ventilator, an inability to protect the airway because of trauma or severe neurological damage, an upper airway obstruction that needs to be emergently bypassed a life-threatening infection of the upper airway, or congenital upper airway anomalies Persistent Tracheo-cutaneous fistula, or persistent tracheal stoma, is a potential late complication of a tracheostomy. It commonly occurs in children due to a failure of spontaneous closure after decannulation. In adults, however, this is relatively less common. The incidence rate of TCF from studies

of children undergoing a tracheostomy varies from 3.3 to 43%. The incidence of persistent tracheal stoma is 70% if the cannulation period is 16 weeks or more.

The predisposing factors are Persistence and failure of closure is the duration of cannulation, other factors are Poor nutritional status, Immunosuppression (high-dose steroids, etc.), Radiotherapy, Infection Granulomatous disease, Distal obstruction due to bilateral vocal cord paralysis, Tracheal stenosis problems associated with TCF are recurrent aspiration and subsequent respiratory infection, difficulty in phonation, difficulty in clearing secretions, ineffective cough, difficulty swallowing, skin irritation and/or ulceration, cosmetic and social issues and intolerance to swimming

Anesthetic implications are to avoid force and trauma, difficult Laryngoscopy, difficulty Tube insertion, reduced coughing Awake intubation and awake extubation, Avoid positive pressure. Recommend drain insertion and Monitor for 24 hours

### CONCLUSION

Our case demonstrates a rare occurrence of trachea cutaneous fistula in adult age because of the failure or delayed closure of a tracheostomy even after early decannulation. The likely mechanism for TCF is persistent infection.

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