

# Primary Tracheal Reconstruction in Cut Throat Injury of a 4 Years Old Child

Suman Arasikere Panchappa\*, Rajaganesh Kuttuvu Swamirao, Dhinakaran Natarajan

Department of ENT, Madurai Medical College, Madurai, India  
Email: [rajsuman91@yahoo.com](mailto:rajsuman91@yahoo.com)

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## Abstract

Cut throat injuries in children are rare, but they constitute a significant management challenge. Such injuries are rarely reported in the literature. Evaluation and treatment of such injuries is a tough task. Cervical tracheal injuries are relatively uncommon and are frequently associated with esophageal, vascular or spinal injuries. We hereby report a case of cut throat injury with incomplete transection of trachea and its management in a four years old male child.

## Keywords

Paediatric Cut Throat, Homicide, Tracheal Transection, Primary Tracheal Reconstruction

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## 1. Introduction

A cut throat injury which is inflicted by sharp objects such as knife, razor, glass pieces, etc. may be superficial or penetrating. The cut throat injury may involve soft tissue, cartilage, bones or neurovascular bundles. In a case of cut throat injury, there may be possibility of injury to the vital structures that may become rapidly fatal from profuse haemorrhage by damaged major blood vessels, air embolism or airway obstruction.

## 2. Case Report

A four years old male child was received at ENT department of Madurai medical college at 5:25 am from Sri-valliputhur government hospital, with the history of slashing his throat by his father with a sickle at 3:00 am on the same day. Father was a known patient of psychiatric illness on irregular treatment. Child was immobilized with chest and neck splint. On admission child was conscious. There was no respiratory distress, noisy breathing or cyanosis. Child was breathing from the cut stoma. There was no active bleeding or aspiration. Bilateral caro-

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\*Corresponding author.

tids were palpable above the cut. No neurological deficit present. Child's pulse rate was 134/min. Blood pressure was 90/60 mm of Hg. SpO<sub>2</sub>-98% in room air.

Immediate resuscitation started. Emergency wound exploration and primary closure of the trachea along with tracheostomy was planned under general anaesthesia. Under GA with endotracheal intubation, an uncompromised airway secured.

Wound examination under GA done. A horizontal contused lacerated wound of 10 cm × 2 cm in the anterior part of the neck just above the suprasternal notch, extending between two sternomastoid muscles falling in ZONE 1 present [1].

- It was cutting through the skin, subcutaneous tissue, infrahyoid muscles, medial half of both the SCM.
- Trachea cut between 3rd and 4th tracheal rings for about 270 degree. Sparing the post wall of trachea.
- The carotids, IJV, thyroid gland, pharynx, oesophagus narrowly missed the injury.

Thorough betadine washes given. As there was clean cut ends of trachea, almost like a surgical cut and approximation was fair enough, on table decision of abandoning tracheostomy was taken. Transected trachea was sutured extramucosally with interrupted 3 - 0 vicryl taken through perichondrium to perichondrium externally [2]. Sutures placed at an interval of 3 - 4 mm. Cut ends of infrahyoid muscles sutured and sternomastoid muscles sutured. Wound closed in layers with Drain. Skin closed by subcuticular sutures.

Child was sedated, paralysed and shifted to PICU for ventilation: PR-120/min, RR-28/min, SpO<sub>2</sub>-99% with FiO<sub>2</sub>-100%. In PICU connected to mechanical ventilator, SIMV-VC mode, IV cefotaxime, amikacin, metrogyl started pre op and continued post op along with analgesics and dexamethasone.

On post operative day 1, child self-extubated. Child was comfortable with no stridor and excellent voice production. Oxygen support through nasalkanula given. There was no soakage of dressing, no air leak and no surgical emphysema. On day 2 shifted to ENT ward and on day 3 drain removed, when there was no collection. Days 4, 5, 6 went uneventful. On day 7 sutures removed and Video laryngoscopic examination was normal. Child was discharged on day 8. On discharge child was near normal returning to daily routines.

### 3. Discussion

Penetrating neck injury constitutes 5% - 10% of all trauma cases. Three types of cut throat injuries are suicidal, homicidal and accidental. Suicidal cut throat injuries are more common. Male to female ratio is 2:1. Most common in young adults from rural area. Risk factors are mental illness, socio demographic status, familial and situational. The diagnosis is based on good data and clinical checkup [3].

Tracheal trauma is an uncommon occurrence in children because of their anatomy. Their short neck, increased elasticity of tissues, and compressibility of the upper sternal area provide for the ability to absorb blunt forces without trauma. Tracheal disruption is a rare occurrence and is seen in only 14% of penetrating neck trauma cases. In general, there is good bony protection of the trachea, but the cervical trachea is exposed anteriorly and laterally. Lesions at this site are not common. This is probably because the lower jaw affords some protection and because the trachea itself is elastic and mobile [4] [5].

The neck injuries possess a great challenge. The Neck contains vital structures like neurovascular bundles, pharynx, oesophagus, larynx, trachea present in small confined unprotected area. Hence these injuries are life threatening and present as emergencies. Neck is divided into ZONES which helps to assess the injuries [6] [7].

The assessment of the patient begins with the ABC of the resuscitation clearing the airway, evaluating breathing and circulation securing an uncompromised airway by ET tube or tracheostomy cervical spine stabilization assessing the injury and repair of the injury. The site of the injury suggests zone & structures involved. Injuries to the larynx and trachea can be asymptomatic or present as hoarseness, stridor, or dyspnea secondary to airway compression or aspiration of blood. Bubbling of air through the neck indicates penetrating injury of larynx & or trachea. Injury to the great vessels causes visible external blood loss, neck hematoma formation and shock. Retropharyngeal air in lateral neck X-ray indicates injury to pharynx or Oesophagus.

### 4. Conclusion

Every case should be assessed individually. Any penetrating injury in larynx & trachea, repair is done primarily following a tracheostomy. In our case, considering the injury & age of the patient tracheostomy is not done during repair. Primary airway repair without tracheostomy is still possible, when injuries are minimal & repairable to near anatomy [8]-[10].

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