

AIRWAY CHALLENGES IN CUT-THROAT INJURIES: A CASE SERIES AND REVIEW OF MANAGEMENT**Divya A¹, Jude Anselm Shyras D², Subramonia Biju C³, Suneer R⁴, Dhanalakshmi T⁴**

Received : 23/06/2026
 Received in revised form : 08/08/2026
 Accepted : 21/08/2026

Keywords:

Airway Management, Neck Injuries, Penetrating, Laryngeal Injuries, Tracheostomy, Wounds.

Corresponding Author:

Dr. Divya A,
 Email: divyambbs166@gmail.com

DOI: 10.47009/jamp.2026.8.4.252

Source of Support: Nil,
 Conflict of Interest: None declared

Int J Acad Med Pharm
 2026; 8 (4); 1509-1512



¹Junior Resident, Department Of ENT, Kanyakumari Government Medical College, Tamilnadu, India

²Professor, Department of ENT, Kanyakumari Government Medical college, Tamilnadu, India

³Associate Professor, Department of ENT, Kanyakumari Government Medical college, Tamilnadu, India

⁴Assistant Professor, Department of ENT, Kanyakumari Government Medical college, Tamilnadu, India

ABSTRACT

Cut-throat injuries are uncommon but fatal forms of penetrating neck trauma involving vital structures such as the airway, major blood vessels, oesophagus, and neurovascular tissues. Airway compromise remains the leading preventable cause of mortality, making early recognition and prompt airway stabilisation the cornerstone of management. The complexity of these injuries is increased by distorted anatomy, laryngeal disruption, bleeding, oedema, and subcutaneous emphysema, all of which may complicate conventional airway techniques. Management requires rapid assessment, careful selection of the most appropriate airway intervention, and timely surgical repair. Although orotracheal intubation is feasible in selected patients, tracheostomy or other surgical airway techniques are often required in severe laryngotracheal injuries. Clinical decision-making must therefore be individualised according to the pattern and severity of injury. This case series describes five patients with cut-throat injuries, highlighting their clinical presentation, airway management strategies, surgical treatment, and clinical outcomes.

INTRODUCTION

Cut-throat injuries are a type of penetrating neck trauma that occurs in the anterior part of the neck. Although rare, they present life-threatening emergencies involving main structures such as the airway, blood vessels, oesophagus, and important nerves within a very small anatomical space. All wounds, even minor ones, can lead to airway obstruction, significant bleeding, aspiration, or neurological damage, and a speedy, multidisciplinary approach is necessary to ensure early diagnosis and quick management. The distribution of these injuries differs between geographical regions and is affected by socioeconomic and cultural factors. Most injuries are caused by suicide and homicide, and recent studies in developing countries have shown that suicide attempts are the most common cause, especially in young adults.^[1,2]

Airway compromise is the most imminent and preventable cause of death among all complications. Major blood loss following vascular injuries can be dramatic, but if an adequate airway is not secured promptly, hypoxia, respiratory arrest, and death can occur before definitive treatment can be applied. Therefore, airway stabilisation is the priority in

trauma management, ahead of haemorrhage control and wound repair. The prompt identification of the airway lesion and the appropriate action have always been correlated with a better prognosis for both survival and functional outcome for penetrating neck injuries.^[3-5]

Respiratory management in cut-throat injuries is sometimes complicated by the alteration of normal anatomical features due to injury. Airway access may be difficult because of laryngotracheal disruption, exposure of laryngeal cartilage, bleeding, aspiration, soft tissue oedema, expanding haematoma, or subcutaneous emphysema. These changes will decrease visualisation of the larynx when laryngoscopy is performed and make subsequent attempts at laryngoscopy more likely to worsen the trauma. Thus, airway management should be quickly evaluated and the appropriate airway management technique selected according to the patient's condition and the severity of the injuries.^[6,7]

Orotracheal intubation is still the recommended approach in many instances; however, in patients with severe laryngeal disruption or distorted anatomy, it may be impracticable. In these instances, a definitive airway may need to be established using tracheostomy or cricothyrotomy. Selected patients with exposed trachea or larynx have also been

reported to have been intubated via the wound. Airway interventions should always be tailored to the pattern of injury and to the skill level present and to the expected technical challenge, and should not be repeated whenever intubation is unsuccessful.^[6,7] Although there has been improvement in trauma care and airway management, the best method for securing the airway in a cut-throat injury is not known, as the type of injury ranges widely.^{8,9} This case series reports the clinical profile and injury characteristics, evaluates the airway management strategies employed, and analyses the surgical interventions and clinical outcomes.

CASE PRESENTATIONS

Case 1: A 24-year-old male presented following a suicidal Zone II cut-throat injury with active neck bleeding and respiratory distress. Examination revealed a deep transverse neck laceration with exposed thyroid cartilage and a breached thyrohyoid membrane. Air bubbling through the wound during phonation suggested communication with the laryngeal airway. Considering the unstable airway and laryngeal framework disruption, an emergency tracheostomy was performed, followed by primary repair of the laryngeal structures. The postoperative course was uneventful, and the patient recovered with preserved airway and swallowing function [Figure 1A].

Case 2: A 34-year-old male presented after a suicidal Zone II cut-throat injury, with minimal bleeding. Clinical examination demonstrated a laceration over the anterior neck with exposed thyroid cartilage, tenderness, and subcutaneous emphysema without major vascular injury (Figure 1: B). Although oxygen saturation remained stable, progressive laryngeal oedema was anticipated. A tracheostomy was therefore performed before primary wound repair [Figure 1C]. The patient recovered uneventfully with satisfactory wound healing and normal airway function.

Case 3: A 68-year-old female was brought following a homicidal Zone II cut-throat injury with profuse bleeding, respiratory distress, and altered sensorium.

Examination revealed an extensive neck laceration exposing the thyroid cartilage with marked soft-tissue disruption and severe airway compromise. An emergency tracheostomy was immediately performed to establish a secure airway, followed by primary wound repair. Despite aggressive surgical management and postoperative intensive care, the patient deteriorated and succumbed, likely due to the severity of injury, physiological compromise, and advanced age.

Case 4: A 23-year-old male presented with a suicidal Zone II cut-throat injury associated with mild dyspnea and minimal bleeding. Examination revealed a superficial laceration involving the thyrohyoid membrane without cartilage exposure or subcutaneous emphysema. The airway was stable, oxygen saturation was maintained, and flexible laryngeal assessment showed preserved vocal cord mobility. As no airway compromise was evident, primary wound repair was performed without tracheostomy. The patient recovered completely with normal phonatory and swallowing function.

Case 5: A 42-year-old female presented following a suicidal Zone II cut-throat injury with mild respiratory distress. Examination revealed a deep transverse laceration involving both the thyroid cartilage and thyrohyoid membrane, with exposed laryngeal structures and air leakage through the wound during coughing. Because of the extensive laryngeal injury and high risk of airway obstruction, an emergency tracheostomy was performed before definitive primary repair. Recovery was uneventful, with satisfactory airway patency, wound healing, and restoration of laryngeal function [Figure 1D].



Figure 1: Representative clinical photographs of cut-throat injury management: (A) Post Tracheostomy, (B) intraoperative laryngeal exposure, (C) primary repair of laryngeal injury.

Table 1: Summary of cases

Age/Sex	Mech of Injury	Zone	Airway Status/Injured structure	Method of Airway Securement	Surgical Procedure	Outcome
24 M	Suicidal	2	Thyroid cartilage, Thyrohyoid membrane	Tracheostomy	Primary wound repair	Recovered
34 M	Suicidal	2	Thyroid cartilage	Tracheostomy	Primary wound repair	Recovered
68 F	Homicidal	2	Thyroid cartilage with extensive soft-tissue injury	Tracheostomy	Primary wound repair	Expired
23 M	Suicidal	2	Stable airway; thyrohyoid membrane injury	Nil	Primary wound repair	Recovered
42 F	Suicidal	2	Thyroid cartilage, Thyrohyoid membrane	Tracheostomy	Primary wound repair	Recovered

DISCUSSION

This retrospective case series included five patients with cut-throat injuries who were treated at the Department of Otorhinolaryngology, Government Kanyakumari Medical College, Asaripallam, between 1 January 2025 and 1 April 2026. Our findings showed that cut-throat injuries are commonly observed in young and middle-aged adults. Mahato et al. found the mean age of patients to be 31.13 years, ranging from 16-48 years with 54.54 % being in the age group of 21-30 years.^[10] Debnath et al. determined that the age group of 36-50 years was the most commonly involved group.^[11] Similarly, Gupta et al. found that 55% of 100 patients in their study were in the fourth decade, and Rajendiran et al. found that 48% of the 50 patients were in the fourth decade.^[12,13] These results suggest that head injuries are prevalent during the prime working age.

Mahato et al. reported male and female populations of 72.7% and 27.27%, respectively.¹⁰ Gupta et al. reported 69% males and 31% females, and Rajendiran et al. reported 72% males and 28% females.^[12,13] Debnath et al. reported a male-to-female ratio of 3.27:1, with approximately 76.6% males.^[11] Similar to previous studies, our study showed a male predominance.

The most common mechanism of injury in our series was suicide. Similar findings were observed by Debnath et al. (61.70%) and Rajendiran et al. (52%) out of 47 and 100 patients, respectively.^[11,13] Mahato et al. noted suicide as the leading cause, but without any percentage.¹⁰ De and Sarma reported the incidences of homicidal, suicidal, and accidental injuries to be 48.48%, 40%, and 11.51%, respectively, in 165 patients.^[14] According to Gupta et al., 75% of the accidental injuries were due to kite-thread accidents, while 47.4% were road traffic accidents, 34.2% were suicidal injuries, and 18.4% were attempted homicidal injuries among 38 patients reported by Shah et al.^[12,15] These differences are most likely regional and caused by different types of traumas. The distribution of injuries was the same as in other published series; all patients in our study had Zone II injuries. The Zone II injuries reported by Debnath et al., Gupta et al., Rajendiran et al., De and Sarma were 89.09%, 76.6%, 70%, and 80%, respectively.^[11-14] Since Zone II is the region in which important airway and vascular structures are located, injuries occurring in this area are likely to be serious and common.

In our series, the primary injured structures were the thyroid cartilage or in combination with the thyrohyoid membrane. Rajendaran et al. reported laryngeal injuries in 60% of the patients and De and Sarma reported laryngeal injuries in 43 out of 165 patients (26.06%).^[13,14] Two patients with Zone II laryngeal penetrating injuries were treated successfully without tracheostomy and were managed through awake fiberoptic intubation and

repair, as described by Lea et al.^[16] These studies highlight the need to carefully evaluate laryngeal injuries before selecting an airway approach. In our series, all patients' airways were secured, and primary wound repair was performed. Gupta et al. concluded that primary wound suturing was the best method to reduce complications.^[12] Rajendran et al. also reported the importance of early wound closure, while Shah et al. suggested meticulous repair of the airway layers with post-stabilisation.^[13,15] Lea et al. also reported good repair of thyroid cartilage fractures using the traumatic wound.^[16]

Airway stabilisation was the most important management issue. Tracheostomy was performed in cases of severe airway obstruction and/or severe laryngeal damage. Rajendran et al. reported tracheostomy in 72% of patients, while De and Sarma reported emergency tracheostomy in 46/165 patients.^[13,14] The majority of patients underwent primary wound suturing, according to Gupta et al., with five patients receiving laryngotracheal stenting.^[12] Lea et al. and Deporre et al. observed no significant difference in airway, swallowing, or voice outcomes at 6 months between surgically managed patients requiring tracheostomy and conservatively treated patients.^[16,17] The results indicate that airway management should be performed based on the level of injury and not a uniform strategy.

A total of 80% of patients recovered after treatment, including one who died despite aggressive treatment. De and Sarma reported three deaths among 165 patients (1.81%), and Debnath et al. reported an in-hospital mortality rate of 8.51% (4/47) and observed that 61.70% of the patients were able to resume normal life without morbidity.^[11,14] Shah et al. reported that 2 of the 38 patients in the study had postoperative voice changes and wound dehiscence.^[15] Widanage et al. successfully managed three patients with laryngotracheal injuries.^[18] These findings suggest that injury to Zone II is common, males are injured more often, and injuries are often the result of suicide attempts. Early airway stabilisation, selection of the right airway, and quick primary wound repair remain the most important factors for successful outcomes.

CONCLUSION

Although cut-throat injuries are rare, they are serious emergency situations that require quick evaluation and early, multidisciplinary management. Airway compromise continues to be the most important determinant of survival, and airway stabilisation is the initial step in the management of airway compromise. In most patients, the injuries were in the suicidal Zone II with involvement of the larynx and required emergency tracheostomy and primary wound repair. Airway injuries were recognised early in most patients, with prompt airway management and early surgical intervention leading to good

outcomes, whereas late presentation and severe airway injury had an unfavourable prognosis.

REFERENCES

1. Anas M, Mannan R, Khan ZM. Understanding the mode and factors influencing cut-throat injuries in a tribal-dominated population in Eastern India. *Cureus* 2023;15: e45481. <https://doi.org/10.7759/cureus.45481>.
2. Chirukandath R, Sulaiman SV, Sasi T, Suresh N, R AV, Syamsundar G, et al. A paradigm for optimal management: Traumatic neck injuries at a tertiary care centre in south India. *Cureus* 2025;17: e81311. <https://doi.org/10.7759/cureus.81311>.
3. Weale R, Madsen A, Kong VY, Clarke DL. The management of penetrating neck injury. *Trauma* 2019; 21:85–93. <https://doi.org/10.1177/1460408618767703>.
4. Go JL, Acharya J, Branchcomb JC, Rajamohan AG. Traumatic neck and skull base injuries. *Radiographics* 2019; 39:1796–807. <https://doi.org/10.1148/rg.2019190177>.
5. Thaware P, Trivedi S, Lakra A, Ankita, Yunus M. Life-saving multidisciplinary management of self-inflicted tracheal transection: A case report. *Cureus* 2024;16: e65174. <https://doi.org/10.7759/cureus.65174>.
6. Varghese K, Sharma P, Sahu S, Kumar A, Wadhwa G. Emergency lifesaving management of a homicidal cut-throat injury: A case report. *Cureus* 2023;15: e47789. <https://doi.org/10.7759/cureus.47789>.
7. Morvan J-B, Cotte J, des Deserts MD, Worlton T, Menini W, Cathelinaud O, et al. Operational consideration for definitive airway management in the austere setting: A case report. *J Spec Oper Med* 2022; 22:90–3. <https://doi.org/10.55460/WNNO-WIUG>.
8. Jenkins LN, Rezende-Neto JB. Current management of penetrating traumatic cervical vascular injuries. *Curr Surg Rep* 2020;8. <https://doi.org/10.1007/s40137-020-00258-2>.
9. DiGrazia GN, Aktan SL, Sechrist EM, Rehn J, Joyce C, Siddiqui MH. CT findings in laryngeal trauma and the clinical implications. *Clin Neuroradiol* 2023; 33:1123–31. <https://doi.org/10.1007/s00062-023-01323-w>.
10. Mahato R, Choubey T, Ray D, Das S, Manna G, Ghosh A, et al. Retrospective study of management and outcome of cut throat injury in a tertiary care centre. *J Evid Based Med Healthc* 2018; 5:1686–9. <https://doi.org/10.18410/jebmh/2018/354>.
11. Debnath T, Saha J, Chowdhury S. Cut throat injury - a critical emergency: review of 47 cases in a tertiary care centre in Eastern India. *Int J Sci Res* 2020. <https://doi.org/10.36106/ijssr/7420123>.
12. Gupta D, Shah C, Jain V, Ganvit N. Cut throat injury: A tertiary care centre experience. *Bengal J Otolaryngol Head Neck Surg* 2021; 29:60–5. <https://doi.org/10.47210/bjohns.2021.v29i1.381>.
13. Rajendiran D, Nedunchezhiyan LC, Guhasaravanabhavan SR, Mani G, Jayakumar AK. Our experience with cut throat injury cases in a rural tertiary care centre. *Med J Dr DY Patil Vidyapeeth* 2024; 17:566–71. https://doi.org/10.4103/mjdrdypu.mjdrdypu_921_22.
14. De DS, Sarma DM. Cut throat injuries at a tertiary referral hospital in guwahati: a review of 165 cases. *IOSR J Dent Med Sci* 2016; 15:36–41. <https://doi.org/10.9790/0853-1508113641>.
15. Shah B, Jaiswal SA, Thorawade V, Khan H. A retrospective study of anterior neck injuries presenting as cut throat emergencies-our experience. *Int J Creat Res Thoughts* 2023; 11:277–82. <https://ijcrt.org/papers/IJCRT2303377.pdf>.
16. Lea J. A case series of penetrating laryngeal trauma managed without tracheotomy. *Science Repository* 2018; 3:009. <https://doi.org/10.31487/j.SCR.2018.03.009>.
17. DePorre AR, Schechtman SA, Hogikyan ND, Thompson A, Westman AJ, Sargent RA, et al. Airway management and clinical outcomes in external laryngeal trauma: A case series: A case series. *Anesth Analg* 2019;129: e52–4. <https://doi.org/10.1213/ANE.0000000000003843>.
18. Widanage W. Laryngotracheal injuries: case series and review of literature. *Ceylon J Otolaryngol* 2023;12. <https://doi.org/10.4038/cjo.v12i1.5348>.