

A case report on attempted suicide by self-slitting resulting in laryngeal fracture

Reporte de un caso de intento de suicidio por autocorte con resultado en fractura laríngea

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SUMMARY

Introduction: Laryngeal fractures cause significant problems with airway patency, vocal production, and swallowing function. The mechanism of injury can be sharp or blunt and can occur in the supraglottic, glottic, or infraglottic regions. Blunt external trauma to the neck caused by motor vehicle accidents, sports-related trauma, assault, and strangulation are the most frequent causes of laryngeal ruptures and fractures. Penetrating trauma is the second leading cause, often due to gunshot or stab wounds to the neck. The immediate goal in patients presenting to the emergency department with laryngeal rupture is to secure the airway. One of the indications for tracheostomy placement includes acute respiratory failure with the need for prolonged mechanical ventilation. **Case report:** A 64-year-old male patient presented with an open wound on the front neck after a suicide attempt using a machete. The patient was referred to our hospital after receiving first aid at a local hospital.

There was a \pm 8 cm long transverse open wound on the front of the neck with exposed laryngeal structures and active bleeding at the wound site. The patient was rushed to the operating room to perform a tracheostomy and stop the source of bleeding. The patient's condition was stable during treatment. **Conclusion:** Laryngeal fracture is a rare but potentially life-threatening traumatic injury. Maintaining airway patency is the main goal of laryngeal rupture management. In this patient, the laryngeal fracture occurred due to direct sharp trauma. An emergency tracheostomy was performed immediately to maintain the patient's airway and prevent aspiration of the patient.

Keywords: Attempted suicide, self-slitting, laryngeal fracture.

RESUMEN

Introducción: Las fracturas laríngeas causan problemas significativos con la permeabilidad de las vías respiratorias, la producción vocal y la función de deglución. El mecanismo de lesión puede ser agudo o contundente y puede ocurrir en las regiones supraglótica, glótica o infraglótica. Los traumatismos externos cerrados en el cuello causados por accidentes automovilísticos, traumatismos relacionados con deportes, agresiones y estrangulamientos son las causas más frecuentes de rupturas y fracturas laríngeas. El traumatismo penetrante es la segunda causa principal, a menudo debido a heridas de bala o de arma blanca en el cuello. El objetivo inmediato en los pacientes que acuden al servicio de urgencias con rotura laríngea es asegurar la vía aérea. Una de las indicaciones para la colocación de traqueostomía incluye insuficiencia respiratoria aguda con necesidad

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*de ventilación mecánica prolongada. **Caso clínico:** Paciente masculino de 64 años que presenta una herida abierta en la nuca posterior a un intento de suicidio con machete. El paciente fue remitido a nuestro hospital después de recibir primeros auxilios en un hospital local. Había una herida transversal abierta de ± 8 cm de largo en la parte frontal del cuello con estructuras laríngeas expuestas y sangrado activo en el sitio de la herida. El paciente fue trasladado de urgencia al quirófano para realizar la traqueotomía y detener el origen del sangrado. La condición del paciente fue estable durante el tratamiento. **Conclusión:** La fractura de laringe es una lesión traumática rara pero potencialmente mortal. Mantener la permeabilidad de las vías respiratorias es el principal objetivo del tratamiento de la rotura laríngea. En este paciente, la fractura de laringe se produjo debido a un traumatismo cortopunzante directo. Inmediatamente se realizó una traqueotomía de emergencia para mantener la vía aérea del paciente y evitar la aspiración del paciente.*

Palabras clave: Intento de suicidio, autocorte, fractura de laringe.

INTRODUCTION

Laryngeal fracture is a rare traumatic injury with a high mortality rate. The incidence of laryngeal rupture is reported to be 1: 30 000 patients presenting to the emergency department (1). Laryngeal fractures cause significant problems with airway patency, vocal production, and swallowing function. The trauma process can be sharp or blunt. Penetrating trauma is the main cause of the sharp type of trauma, while blunt external trauma often occurs because of motor vehicle accidents (2,3).

Patients with prolonged depression tend to commit suicide. With the use of sharp objects, the person will make a trial slice on a vital part of the body that is easily accessible to find the least painful slice point (4). Traditional methods are often found in suicides using sharp weapons and slicing the neck. Another common location is the wrist or foot (4,5).

Signs indicating laryngeal injury are crepitus in the tracheolarynx, pain, voice changes (dysphonia), difficulty swallowing (dysphagia, odynophagia), haemoptysis, skin emphysema, and respiratory distress (dyspnoea) (6). Airway obstruction can be caused by oedema, haemorrhage, and injury to the vocal cords or recurrent laryngeal nerve (6,7). Ruptures of the mucosa and laryngeal wall cause emphysema of the scalp and nuchal region, with or without pneumomediastinum and pneumothorax. Injury can also lead to the creation of a tracheoesophageal fistula (7).

The main priority in the management of laryngeal trauma is to maintain the patient's airway patency (8,9). Measures that can be taken include endotracheal intubation and tracheostomy surgery (8). Once the airway is secured, anatomical reconstruction of the larynx is performed (3). Non-displaced laryngeal fractures usually do not require operative treatment, but displaced fractures should undergo open reduction internal fixation (ORIF) (5).

CASE REPORT



Figure 1. AP-lateral cervical x-ray showed a soft tissue defect at the anterior part of the neck (red arrow).

A CASE REPORT ON ATTEMPTED SUICIDE

A 64-year-old male patient presented with an open wound on the front neck after a suicide attempt using a machete. The patient was referred to our hospital after receiving first aid at a local hospital. There was a \pm 8 cm long transverse open wound on the front of the neck with exposed laryngeal structures and active bleeding at the wound site. The radiological X-ray of the neck from the local hospital showed a soft tissue defect

in the anterior soft tissue of the neck with thyroid cartilage fracture and cervical emphysema.

The patient was immediately taken to the operating room to perform a tracheostomy and stop the source of bleeding. The patient was evaluated in the intensive care unit (ICU) after the surgery was completed. The patient's condition was stable during treatment.

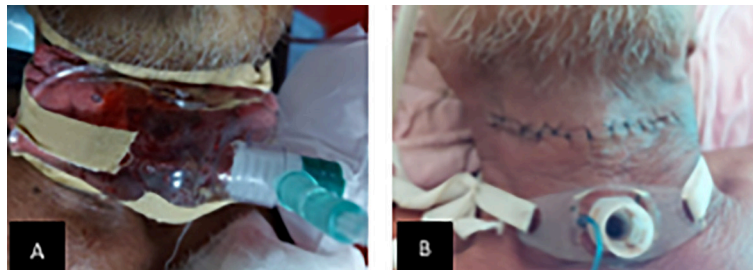


Figure 2. Clinical pictures of a patient with an open wound on the anterior neck with active hemorrhage (A), after tracheostomy and wound suturing (B).

Emergency tracheostomy was performed, with tube insertion at the second and third tracheal rings. After airway patency was assured, the bleeding source was stopped, and suturing was performed on the anterior neck wound defect. The patient was admitted to the ICU after surgery. The patient's condition was stable, airway patency was adequate, and no secondary bleeding occurred. The patient received broad-spectrum antibiotics, analgesics, and tetanus prophylaxis, and food was given through a nasogastric tube. The Psychiatry diagnosis was major depression with psychotic symptoms and treated with risperidone, chlorpromazine, and fluoxetine given orally through a nasogastric tube. The duration of hospitalization was 5 days, and the patient could continue treatment in the outpatient setting.

DISCUSSION

Laryngeal fractures are injuries that involve mucosal injury, fracture, or dislocation and have a mortality rate of 17.9 % (1). The mechanism of sharp trauma is most often due to penetration of

a sharp object, such as a gunshot or stab wound to the neck (3). Meanwhile, blunt trauma that causes laryngeal fractures is usually the result of a collision during a motorbike accident or an entanglement in the neck (2).

People with depression tend to commit suicide, and one way is to slice vital parts of the body using sharp weapons (4). In right-handed people who attempt suicide with a sharp weapon, the location of the wound is usually heavier on the left side. The opposite occurs in people who are left-handed (5). This patient had a history of depression and attempted suicide by cutting his neck using a sharp weapon (machete). There was an open wound on the front of the neck suggesting a larger left-sided defect than the other side.

CT scan of the neck is considered the gold standard for diagnosing laryngeal fractures. In addition to CT scan examination, endoscopy also provides useful information about the location and extent of the injury (10). A cervical X-ray may be an option if the local hospital does not have adequate radiological examinations. A plain X-ray of the patient's neck from the local hospital

showed a thyroid cartilage fracture and soft tissue defect in the anterior colli with emphysema.

The main therapy for laryngeal fractures is to maintain airway patency (8,9). Methods that can be used are endotracheal tube insertion, tracheostomy, or cricothyroidotomy if in an emergency airway condition (9). In this patient, an emergency tracheostomy was performed immediately to resolve airway obstruction and prevent aspiration. Once the airway is secured, laryngeal reconstruction using a mini plate can be performed as reported by Qiu et al. (2022) (3).

CONCLUSION

Although rare, laryngotracheal sharp trauma has a high mortality rate. Airway obstruction and aspiration are complications that can cause death to the patient, so early diagnosis and management are essential to avoid these conditions. Emergency tracheostomy as in this case should be performed immediately to maintain the patient's airway patency.

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