CASE STUDY

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Near-fatal Self-Inflicted suicidal Cut Throat Injury with open airway; a case report and review of the literature.

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ABSTRACT

Cut-throat injuries can be homicidal, suicidal, or accidental. Self-inflicting suicidal cut injuries in adults are less common than in the young age groups. It happens in adults after being neglected at home, frustration, financial crisis, anxiety, and depression. We present a 61 years old male who was brought to the emergency early in the morning immediately after a self-inflicted cut-throat injury with clinical features of aspiration, bleeding, and breathing from the neck. On examination, there was a 7 cm cut injury in between the thyroid cartilage and the hyoid bone. The whole anterior wall of the laryngopharynx and larynx were transected leading to the visualization of supra-glottis and the posterior wall of the hypopharynx. A computerized tomography scan of the head and neck was performed to rule out head injuries and extension of the cut injuries at the neck. Emergency tracheostomy, followed by primary repair of the injuries were done. During the postoperative period, patient had difficulty with speech and swallowing. After almost three weeks of rehabilitation by the team, the patient was discharged. The patient was able to speak and swallow with a reduced level of anxiety. This case report highlights the emergency management of open airway suicidal cut injury, its immediate surgical management, post-operative rehabilitation of speech and swallowing, and re-establishment in the society.

Keywords: aspiration, open cut-throat injuries, suicide and vocal fold paralysis.

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Introduction.

Cut Throat injury is one of the common emergencies which has an increasing incidence in developing countries due to poor socioeconomic status, unemployment, alcoholism, frustration, and dissatisfaction. Suicidal cut throat injuries may occur due to family conflict, poverty or ,neuropsychiatric illnesses.[1]This type of suicide is unusual among elderly population in the indian subcontinent.[2] Majority of the cases present with superficial wound and hesitation cuts but some present with very disastrous complications like hemorrhage and asphyxia that need to be intervened as soon as possible to prevent the death of the patient.[3] Immediate resuscitation has to be done by securing the airway with either, Endotracheal intubation or tracheostomy which is later followed by repair of cut injury of the neck. Multidisciplinary collaboration is required between Emergency physician, Otolaryngologist, Anaesthetists and psychiatrist.[4,5] Here We report a 61 years old male with self inflicted cut throat injury with open neck airway successfully managed with immediate resuscitation, emergency tracheostomy, repair of cut neck injury with post operative rehabilitation.

Case reports

A 61 year old male patient was brought to the emergency department of Gandaki Medical College with a history of self-inflicted cut throat injury early in the morning at 6:30 am. The patient was in a low mood, but conscious and co-operative. On examination of the neck, there was minimal bleeding from the wound in the neck. There was a 7 cm wound in the neck above the thyroid cartilage. (Figure.1) The wound was a clean cut wound.His vitals were stable as he did not have any respiratory difficulties and saturation was maintained at 96% in room air. His hemoglobin was 8.9 mg/dl . The patient was intubated from the inflicted site to secure the airway. There was minimal bleeding. So, packing was done around the intubation site in the emergency ward and blood transfusion was started. Computerized Tomography Scan was performed to see the extent of injuries (Figure.2 A and B) and to rule out any head injuries.

The patient was then transferred to the operation theatre for immediate tracheostomy and repair of cut throat injuries under general anaesthesia. The cut injuries above the level of the hyoid bone had completely severed the thyrohyoid membrane, suprahyoid muscle and some muscle of the floor of the mouth. The middle constrictor muscle was partially severed and there was cut just below the epiglottis at the supraglottic level. Anterior jugular vein was transected on the left side. The posterior walls of the hypopharynx was seen through the open wound and it was partially severed. (figure.1) These cut injuries were extended through the epiglottis and partially severed the aryepiglottic fold above the false cord. General anaesthesia was given to the patient from the same intubation tube initially. Next, the airway was secured via tracheostomy. and the endotracheal tube was removed. Copious irrigation and debridement was done on whole cut throat area. Bleeding was secured. Left anterior jugular vein was ligated and hemostasis was maintained.

Figure. 1. Showing the cut throat injuries in the neck

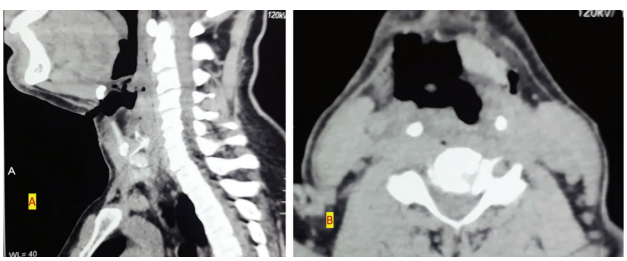

Figure 2 (A) CT sagittal and (B) CT axial view showing the extension of cut injury and its connection with laryngopharynx

The layer by layer tissue was sutured by vicryl 3-0 in order to realign the tissues and maintain the layer of neck accurately. It is important to maintain anatomic integrity of supraglottic part of laryngeal structure, so it was performed in two layers.Partially cut epiglottis

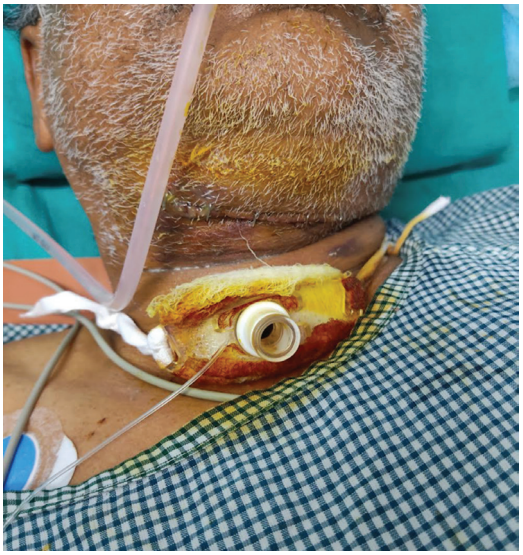

Figure. 3 showing the closure of wound and trachesotomy tube insitu.

was repaired with interrupted vicryl 3-0 sutures. The pharyngeal wall (middle constrictor muscles) and the base of the tongue were reconstructed with interrupted Vicryl 3-0 sutures in single layers, starting from the lateral aspect, taking care to oppose the mucosa. Suprahyoid muscle was repaired in mass. A few loose Vicryl sutures were made over the partially cut sternocleidomastoid muscles. Irrigation was repeated, single drains was placed, and the skin was closed with interrupted prolene suture. (Figure.3) the patient was kept on a nasogastric (NG) tube for feeding. The patient was observed in the intensive care unit for two day. Feeding was started via nasogastric tube on the 3rd Postoperative day(POD). Nasopharyngolaryngoscopy(NPL) was performed on the 1week which showed mild paresis of the left vocal cord.(Figure 4. A, B) Skin sutures were removed on the 7th Postoperative day. Oral feeding with sips of water was started on the 10th POD, but he developed severe cough. On examination of the neck, there was still some leakage from the stoma site. So, oral feeding was stopped for time being. He was taught about supraglottic swallow for oral feeding but his response was very poor. At the 15th POD, repeat NPL was done which showed closure of vocal cord with on adduction.Figure.4C) We encouraged to drink liquid and solid to improve the nutrition of patients. Neuropsychiatric consultation was performed right from the 1st post-op day. He was diagnosed with a case of mixed anxiety and depression which was managed by antidepressants, anxiolytics, and cognitive behavioral therapy.The tracheostomy tube was removed on 15th POD. Patient spoke normally but was in a low mood state. Both NG feeding and oral feeding were continued till the 16th pod then the NG tube was removed. The patient and his family members were counseled regularly. The patient was discharged on the 18th with closure of tracheostomy stoma (Figure.4) and where the patient went home in the daytime and came to the hospital in the evening for the next 3 days. Finally, the patient was discharged on the 21st POD. At one month's follow-up, he improved physically, mentally and socially.

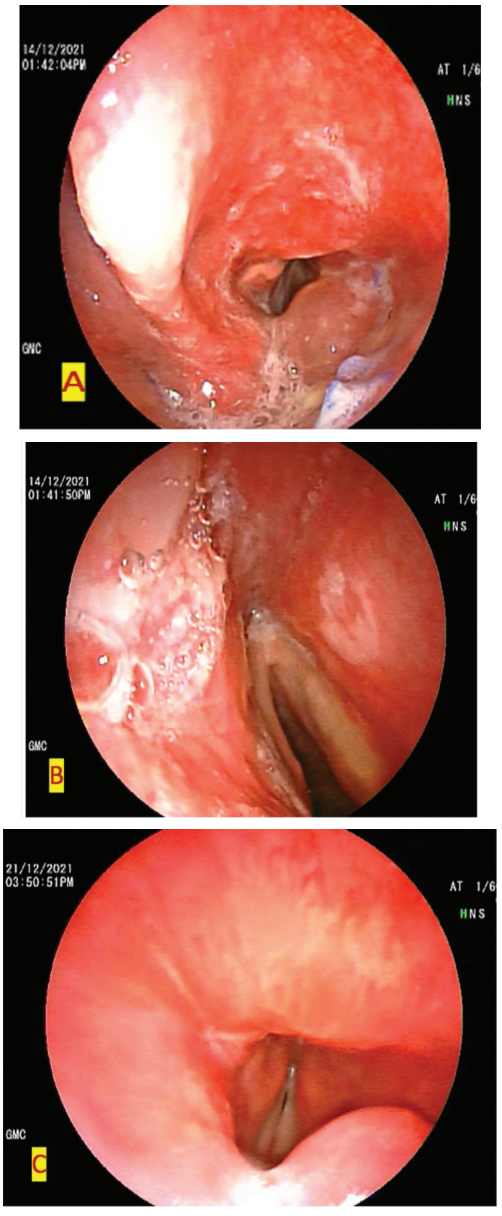

Figure.4 Nasopharyngolaryngoscopy(NPL) showing the (A) edema of supraglottic area with minimal aspiration at at 1week B. left vocal cord paresis at 1 week. C. near complete closure of vocal cord no adduction at 2 week.

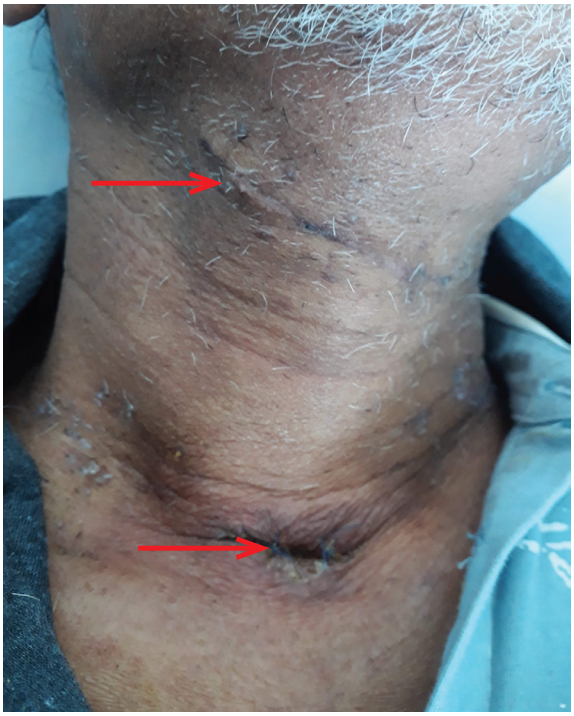

Figure.5 showing the healing cut injures site (black arrow) and healing of wound (Red arrow) at follow up at 4th week

Discussion

Cut-throat injury is one of the ways of committing suicide. self- inflicted cut-throat injuries are uncommon in the Indian subcontinent.[6] Usually, these are limited to superficial cuts with multiple hesitation marks at the neck. However, in our case, there was a single 7cm long horizontal cut injury just above the thyroid cartilage extending between anterior border of right sternocleidomastoid to the anterior border of left trapezius. The airway was opened and the patient was breathing from the neck. It was complicated by minimal bleeding and aspiration.

Nearly one million people commit suicide as per the data by World Health Organization. The incidence of attempting suicide is twenty times more than the actual incidence of suicidal morbidity and mortality.[7] Self-inflicted cut injuries that lead to the open airway is very rare and have strong suicidal intention. It occurs due to frustration at home, anxiety, depression, economic crisis, etc. Most of the patients with hidden pshyciateiric illnes like anxiety and depresion, economic crisis and lonliness in our society who needs aggressive treatment inorder to prevent suicide related morbidity and mortality.[8] Lack of Job opportunity also acts as a stressful life event which ultimately leads to suicide. [9] These patients are mostly found by family members ine either dead or severely injured stage. we do neuropsychiatric consultation to each patients as a part of routine management in suicidal cases in our hospital.

Management should be done urgently by the emergency physician in conjunction with an otorhinolaryngologist, anesthetist and psychiatrist. In our case the patient had severe cut injury however he was lucky that the major vessels were spared. Our patient had injury at zone II of Roon and Christensen's classification of neck injuries which is the most common of all.[1]Patient should be intubated through the same inflicted site first and later changed to proper tracheostomy. Anaesthesia was given through the endotracheal tube initially and was later through tracheostomy tube for proper surgical repair of the severed anterior neck structures under general anesthesia. However, in severe airway compromise, the airway can be maintained via endotracheal intubation.[10] In our case, we maintained airway by endotracheal intubation through the self-inflicted cut site. In open neck injury, it is mandatory to do tracheostomy which not only secures the airway but also helps to repair cut wound appropriately.[11] Open injury, vocal fold paresis, and aspiration lead to poorer outcome.[12]

Injuries that require repair of the pharynx should restrict oral feeding at least week . We started nasogastric tube feeding on the 3rd postoperative day. Feeding gastrostomy is the standard practice and has advantages especially in the patients who need for enteral nutrition for a longer period. For a short period of time NG tube feeding is a classic and time proven technique.[10,13] Our patient did not prefer feeding gastrostomy. We feel timely intervention can be life saving and further rehabilitation is necessary to improve the patient condition.

Conclusion

Prompt management by securing airway, maintaining haemostasis and proper post operative care decrease the morbidity and mortality of cut throat injury cases.

Social awareness, counselling, proper education and creation of opportunity for job may reduce the incidence of suicidal cut throat injury.

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