



Multidisciplinary Approach to Cut Throat Injury: Case Report

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ARTICLE'S INFO

Article No.:031022033

Accepted: 10/03/2022

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Keywords: multidisciplinary, cut-throat, injury.

Type: Case Study

Published: 25/03/2022

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Full Text: [PDF](#), [HTML](#), [EPUB](#), [PHP](#)

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INTRODUCTION:

Cut throat injury is referred to a laceration or a stab by a sharp object, which may be superficial or penetrating in nature. Cut throat injury can be classified into self-inflicted or non-self-inflicted which results from accident, homicides or suicide (reference). It may present as a single injury or along with multiple injuries^{1,2,3}. This case report addresses the multidisciplinary involvement in management of cut throat injury sustained by a young man following a homicide attempt

CASE PRESENTATION

The patient is I. U., A 28yr old male, from Benue State of the North Central region of Nigeria. He has Secondary level of education,(is a commercial tricycle driver by profession and also a mechanic).Patient was rushed to emergency room of the Rivers State University Teaching Hospital following a history of slit throat. A brief history taken at the emergency room revealed patient was found on his bedroom floor with multiple cuts to the throat and body with a sharp knife. Injuries sustained

were double horizontal linear slits to the throat approximately 4 cm apart. There were noticeable lacerations to the abdomen and also slits at the wrist bilaterally volar aspect of the fore arm. He was dyspneic with bloody frothing at the site of the cut throat and at the nose during respiration. Respiratory rate was noted to be 46cycles per minute, pulse oximeter gave a value of 89%. The pulse rate was 104bpm with a blood pressure of 90/56mmHg. Initial resuscitation was commenced in accordance with the ATLS protocol: The airway was cleared and debris suctioned off. Oxygen via nasal prongs was provided while the wound was bandaged and arrangements made for a definitive airway via an emergency tracheostomy. A preliminary exploration of injuries was made and active bleeding points arrested .Two large bore cannula were inserted and patient resuscitated with initial 2 liters of isotonic ringers lactate .A urinary catheter was also left in-situ to monitor patients tissue perfusion .SpO₂ monitoring was continued with O₂ saturation maintained at above 92% and 2 units of blood provided prior to surgery .Reviews were also obtained from the Surgical team on emergency call duty and also the anesthetics. Consent was obtained from the relatives (father) and patient post

haste to the operation room for an emergency tracheostomy, neck exploration and repair.

Patient was rushed into the operating room and an endotracheal tube inserted through the wound to the trachea directly and the cuff applied. The airway was suctioned and hemostasis around the exposed neck secured via pressure with sterile gauze and ligature with absorbable sutures. An emergency tracheostomy was done below the cut throat injury and a cuffed tracheostomy tube was inserted at the 3rd to 4th tracheal rings. The T-tube cuff was inflated to protect the tracheobronchial tree and exploration of the neck commenced under general anesthesia. The slits were irrigated using normal saline approximately 2 liters and careful exploration of the wounds done. Findings were; 2 horizontal anterior neck incisions about 10cm and 8cm in length exposing the hypopharynx and larynx, laceration of the thyroid cartilage, transection of the anterior aspect of the trachea with approximately 2cm of the posterior segment still intact and lacerations on both wrists with superficial abdominal. Examination of the larynx revealed adduction and abduction of the vocal cords with blood clots on the surface and airway.

Exploration of the injury was done with repair of the larynx and trachea done in layers using vicryl suture and careful tissue alignment to maintain adequate airway. The muscular layer was carefully opposed and skin closure done via interrupted nylon sutures. The lacerations on the wrist was repaired and wound dressing done on the superficial cuts on the abdomen.

Post operatively, vitals signs were closely monitored and management of cuffed tracheostomy tube care done. He was on nil per oral and administered anti-tetanus toxoid, antibiotics, analgesics, intravenous fluids and intravenous steroids.

By the 1st post-operative day, vital signs of the patient had stabilized with a pulse rate of 96 beats per minute and blood pressure of 120 / 80mmHg.

By the 3rd post-operative day, patient was noted to have started phonating despite the tracheostomy tube and was completely ambulatory. However, neck x-ray done showed mild soft tissue emphysema which was not palpable during cervical examination. He was able to tolerate fluid diet without aspiration, which was later advanced to semisolids and weaned off tracheostomy by the 5th postoperative day due to decannulation of the tube. By the 10th day post-operative period, patient had markedly improved and was able to phonate clearly and communicate with caregivers and relatives. Wound healing was adequate with planned skin suture removal. Every other system was adequate and patients recovery was satisfactory. A repeat X-ray of the neck of the neck done 2 weeks post procedure showed a well aligned airway as seen in Fig 3.

Patient was reviewed 8 weeks post operatively and the outcome was satisfactory following examination and direct laryngoscopy. He was referred to see the Neuropsychiatrist for review and further management due to his trauma and history of drug use.

Case review by the Neuropsychiatry team:

During the patients review by the neuropsychiatrist, He was said to have been in his usual state of health until about 2 months ago when he was ambushed by assailants who had broken into his apartment prior to his return that evening. He had returned to his room which was in a blackout and attempted to lie down on his bed to retire for the day when the assailants, 3 in number, pounced on him and immediately slit his throat with a sharp object. On further attempts to fight them off, they slit his wrist. This was the last he remembered. He woke up the next morning, crawled out of his apartment and called for help before passing out again.

Further interview revealed that he had been a user of cannabis of which he started using this substance 9 years ago at the age of 18years old after he was introduced to it by his elder brother. He started out by smoking a drag which made him feel good and able to concentrate properly. This feeling made him return for more as he increased use to about a wrap within the space of one month in order to attain the same effect. When substance is not in use, he feels as if time slows down and he cannot concentrate. He constantly craves substance and abandons other sources of pleasure to seek it. He funds his substance abuse from monies he makes from his hand work. He has not had conflicts with family, superiors or occupational hazards following use of substance. He currently makes use of 2 to 3 wraps daily. He claims he last used substance 2 days prior to the incident of his cut throat. He admitted to the use of other psychoactive substances such as tramadol and codeine. However, last use was 6 years ago.

He also gave a history of hearing of strange voices unheard by others in clear consciousness of 6 years duration. Voices are multiple, familiar recognized as his mother and childhood friends discussing his actions. This occurs infrequently about 3 to 4 times weekly with periods of quiescence lasting a month in between episodes. He says voices make him feel nervous but he has never acted on them. He last heard the voices about 3 weeks prior to incident.

No history of seeing of strange objects in clear consciousness or other perceptual abnormalities in other modalities. There's a positive history thought broadcast and thought insertion. He feels that his actions are occasionally controlled by forces external to him. However, he does not believe he is discussed or referred to in other media.

No history of low mood, loss of interest in previously employable activities, low energy, worthlessness or guilty feelings. He denied death wishes, suicidal ideations or attempts.

No history of decreased need for sleep, increased feelings of energy, talkativeness, elated or elevated mood. No history of excessive spending of monies except in purchase of cannabis. No history of undue fearfulness, tremors, dryness of the throat, excessive sweating or other features of autonomic overdrive.

This interview was done over the telephone as patient was unable to go for a clinic consultation due to financial reasons. A further review was required as certain key details could not be obtained over the phone interview. Based on the current review an impression of mental and behavioral disorder due to cannabis dependence, schizophrenia like (ICD 10 Diagnostic criteria) was made. The following psychiatric problems were elicited:

1. Prolonged use and dependence on a psychoactive substance (cannabis).
2. Psychotic Symptoms - 3rd person auditory hallucinations (discussing), thought insertion and broadcast, made volition (passivity phenomenon).

Patient was encouraged to attend the clinic for further management, of which he is yet to do.

DISCUSSION

This paper reviews the management of a young man with multiple cuts to the throat, wrists and abdomen. Cut throat injuries due to homicides and suicides usually require rapid and interdisciplinary treatment⁷. The anesthetist and psychiatrists working in conjunction with the Otolaryngologist should manage these patients⁷. Cut throat injury can be as a result of suicide, homicide or accidents. Most times self-inflicted cut throat injury are as a result of suicide⁸. Suicide is a known cause of death among individuals with psychiatric illnesses⁹, familial troubles and poverty¹⁰. However there are some instances where individuals who are intoxicated by substances and not in their right frame of mind resulting in self-harm which may involve cutting their throat with a sharp object¹¹. There is limited literature on multidisciplinary approach done on cut throat injury with patients with substance abuse, this is probably due to most cases being under reported or captured under suicide without the surrounding elements such as drugs /substance abuse as a predisposing factor to the self-inflicted cut throat injury⁸. Cut throat injury may be with associated multiple injuries as seen in this case or present as a single injury.

The neck is anatomically divided into 3 zones. The zones 1 and 3 have bony protection unlike that of zone 2 which is located between the cricoid and angle of the mandible, this area is devoid of protection by bone unlike the other zones and thus pose a higher risk of injury to structures of the neck^{2,3}.

Cut throat injury occurs at zone 2, of which injuries to the neck at this zone are potentially life

threatening due to the vital structures present. There is a possibility of damage of vital structures which may result in complications such as massive hemorrhage, asphyxia from aspirated blood, shock, major vessel damage can result in exsanguination, air embolism and death.

Prevention of these complications depend on immediate resuscitation by securing the airway via tracheostomy or intubation, prompt control of hemorrhage and blood replacement if necessary, prompt intervention or operative treatment when indicated⁷. There is a place for tracheostomy in the management of cut throat injury which was done in this case and its worth is highlighted in other studies^{4,5}.

The extent of surgical repair depends on the extent of injury. The injuries may be superficial or deep, which determines the extent of surgical intervention during management. In this case with multiple neck lacerations, a tracheostomy was inserted below the injury to protect the tracheobronchial tree and relieve upper airway obstruction which would have occurred due to edema following the trauma and laryngeal repair. This is similar to other similar cases of management in which establishing an airway either via endotracheal intubation or tracheostomy is done prior to surgical repair of the transected tissues^{5,6}. The exploration and repair of the trachea, larynx and soft tissues in this index case was done in layers to give a better outcome⁸.

Patients of cut throat injury due to homicide need psychological support to overcome the trauma which may linger long after the wounds heal⁶. In this case, the review yielded more insight to the possibility of substance abuse and generated further assumptions and questions. The patient has been on prolonged use and dependence on cannabis which is a psychoactive substance.

Cannabis has been associated with development of schizophrenia. A substantial body of observational evidence supports the hypothesis that cannabinoids play a role in the development of schizophrenia. Prospective observational studies, with decades of follow-up and accounting for a large number of potential confounding factors (such as demographic, family history, personal history, socioeconomic or other environmental markers) have consistently demonstrated that exposure to cannabis is associated with an increased risk of schizophrenia or related disorders. These findings have been reinforced by basic research experiments that point to cannabis altering various neurotransmission pathways linked to pathogenesis of psychotic disorders and by interfering with neurodevelopment in adolescents¹².

A systematic review on the relationship of psychosis and self-harm revealed that the experience of psychotic-like symptoms is significantly associated with a two-and-a-half to three-fold increased risk of suicidal behavior and, arguably, should be considered a risk marker indicative of vulnerability to both self-harming behavior and to suicide¹³.

There is a possibility that:

1. This patient was physically attacked by assailants
2. He might have acted under the influence of the substance following a distortion of his ego boundary
3. He might have acted under the influence of the psychotic phenomena such as obeying the voices heard in the hallucinatory experiences, the thought disorders or the influence of the made volition.

The review was necessary due to the psychological trauma he encountered from the incident and in this case substance abuse and drug addiction. The Patients' reluctance to follow up on medical review and management by the neuropsychiatrist despite his reason indicates he is unaware of the importance of this care, probably due to the absence of physical consequence to him at this time.

CONCLUSION

Cut throat injury is an emergency which requires a multidisciplinary approach for adequate management. This was appreciated in this case as all hands were on deck in management of this patient by the trauma surgeons in the accident and emergency room, the anesthetists, otorhinolaryngologist and neurophysiatrist. Their impact cannot be over emphasized as every aspect was critical in this patients care from ensuring adequate airway, securing hemostasis, repair of severed tissues with the aim of restoring swallowing, phonation and breathing as well as psychological review of the patient who survived a homicide attempt and has a drug addiction prior to the cut throat incident. The post-operative care for anxiety and drug addiction is very important as it is an invisible trauma. Awareness is paramount on the importance of a psychological review by the neuropsychiatrist of patients who have under gone traumatic events to ensure a general wellbeing long after the physical wounds have healed.

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Cite this Article: Oparaodu, UA; Jack, I; Ikenga, VO; Kue, D (2022). Multidisciplinary Approach to Cut Throat Injury: Case Report. *Greener Journal of Medical Sciences*, 12(1): 112-115.