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# Management of Atypical Suicidal Cut Throat Injury in a Private Tertiary Hospital

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**Abstract:** Cut throat injuries are potentially life threatening due to the peculiarity of the structures traversing this region of the body. These injuries could be accidental, homicidal or suicidal and the use of a sharp weapon is the least frequent suicidal method in most cases reported. In cases of attempted suicide, hesitant marks are a common finding. Attempting suicide by cutting the throat without hesitant marks is a very rare occurrence. Generally, cases of cut throat injuries are largely under reported as many are fatal before presenting to the hospital therefore a definite incidence is not available. These patients need emergency multidisciplinary care to prevent rapid deterioration, avoidable morbidity and mortality. Adequate airway management skill in intubating and securing the airway to allow for wound exploration and surgical repair is essential for a good outcome. We present to you a rare case of suicidal cut throat injury in a 38 year old male with depressive type of schizoaffective disorder not associated with hesitant marks at Babcock University Teaching Hospital, a private tertiary hospital in south west Nigeria. The rarity of the case is the reason for presenting this case report.

**Keywords:** Suicidal Cut Throat Injuries, Incidence, Morbidity, Mortality, Hesitant Marks

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## 1. Introduction

Suicide is a major cause of mortality worldwide. It is a human tragedy that accounts for an estimated one million deaths annually [1]. The incidence of attempted suicide is about twenty times more than that of completed suicide [2]. There are several methods of attempting suicides. According to some reports from studies done in Nigeria, the most popular methods of attempting suicide includes hanging, use of firearms and ingestion of poisonous substances in that order. [3] Throat cutting remains a rare method [4]. More rare is attempting suicide by throat cutting without hesitant marks as seen in the case report[5]. Several risk factors have been implicated in suicide and attempted suicide and some of these includes mental illnesses, physical health problems, drug and alcohol abuse, interpersonal difficulties as well as socioeconomic problems among others. [6] WHO mortality

base shows that 85 per cent of the world's suicides occur in low and middle income countries. [7] The prevalence of attempted suicide in Nigeria is 0.7 per cent. [8] When suicidal cut throat injuries occur, a multidisciplinary approach is required in the effective management of the victim and requires the close collaboration of the otorhinology, anesthesiology and the psychiatrist.

The diagnosis is based on history and examination of the pharynx, larynx, oesophagus and other contiguous structures to determine the extent of the injury. The neck accommodates vital structures like neurovascular bundles, larynx, trachea and oesophagus. Injuries to these structures are varied and depend on the site, pattern and depth of the cut on the neck.

## 2. Case Report

Patient is a 38 year old single unemployed male of Yoruba ethnicity who was being managed for severe depressive

illness at a neuropsychiatric hospital with poor medication compliance since two years prior to presentation. He attempted suicide by slitting his throat with a razor.

Patient was found in his room in the pool of his blood with a blood stained razor in his right hand. Family members present rushed him to a general hospital where first aid treatment and anti-tetanus prophylaxis was given before referral to our facility. He was brought to our emergency unit with a wide open gaping wound on the anterior neck at the level of the cricoid cartilage. A roll of gauze was used to pack the wound, it was soaked with blood and bubbles of air were seen on it. He was breathing through the retracted end of the larynx evidenced by the gush of expiratory air coming out of it. He presented with cough, dyspnea, aphonia, breathlessness and tachypnea. He had a pulse rate of 120 per min, blood pressure of 90/60mmHg and respiratory rate of 32 per minute with oxygen saturation between 68 and 72 percent. He had coarse pulmonary crepitations in the middle and lower lung zones bilaterally. At the emergency room, two wide bore cannulas were placed, volume resuscitation was carried out with two units normal saline. Blood sample was taken for urgent Packed Cell Volume (PCV), blood grouping and cross matching. High risk informed consent was obtained and patient was admitted under ASA IV for emergency surgery.

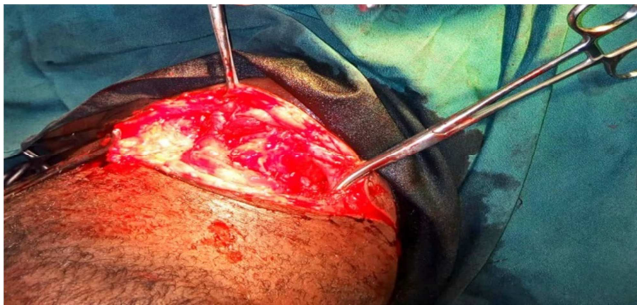


Figure 1. Patient in the theatre before intubation.

In the operating theatre, continuous electrocardiogram, non-invasive blood pressure and pulse-oximeter monitoring were carried out. (Heart rate was 80 beats per minute, blood pressure was 140/80mmHg, and saturation ranged between 74% and 85% (on oxygen by face mask)).

Patient was positioned supine and premedicated with intravenous atropine 0.6mg, metoclopramide 10mg and midazolam 1mg. Induction was carried out with intravenous ketamine 100mg, using pethidine 1mg/kg body weight for analgesia while atracurium was used for muscle relaxation, maintained with oxygen and isoflurane. Attempted intubation with a size 7.0mm endotracheal tube through the oropharynx failed as a result of the disconnection from the laceration preventing adequate exposure into the larynx to secure the airway.

The size 7.0mm cuffed endotracheal tube was routed through the wound, checked and position confirmed. With Magill's forceps, the endotracheal tube was pulled on the proximal end through the wound via the oropharynx and into the oral cavity and airway was secured. Anaesthesia was

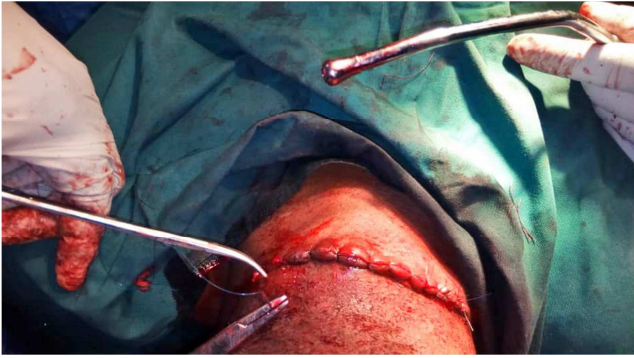
maintained with oxygen, isoflurane and intravenous atracurium as muscle relaxant. Monitoring with non-invasive blood pressure, oxygen saturation, heart rate, Electrocardiogram, end tidal carbon dioxide, temperature and urine output were done.



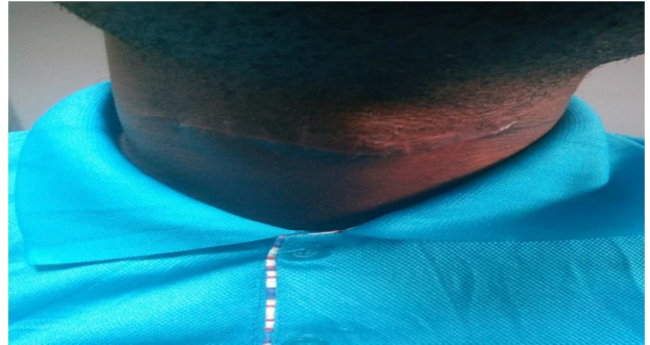
Figure 2. Patient in the theatre after intubation.

With the patient maintained in the supine position, the neck extended using a shoulder roll to adequately expose the wound site. The head was stabilized with a head ring. Appropriate scrubbing and draping was done. Exploration of the wound revealed a transverse laceration to the anterior neck over the region of the cricoid cartilage. It was 7cm below the mandible and 7cm above the suprasternal notch. Left lateral end was 4.5cm below the tip of the left mastoid while the right lateral end was 5cm below the tip of the right mastoid. The laceration was 2.5cm deep on the left lateral end and 1.5 cm deep on the right lateral end (this can be explained by patient's right handedness) and measured 12cm in length spanning through the medial borders of both sternocleidomastoid muscles. The laceration was a single transverse one with no hesitant marks. Angles of the injury at both ends were acute. It traversed the skin, subcutaneous tissue, superficial fascia, platysma muscle, strap muscles, pretracheal fascia and the anterior wall of the larynx in the region of the cricoid cartilage about 2cm below the laryngeal prominence. The laryngeal lumen was communicating with the exterior via the wound. The major blood vessels of the neck (internal and external carotid arteries and internal and external jugular veins) were spared. Wound site was debrided and devitalized tissues including small fragments of cartilages were carefully removed.

The surgical repair of the transected larynx was first carried out using 3.0 vicryl via simple interrupted suturing technique. The strap muscles were repaired layer by layer via a similar technique using 3.0 vicryl. The undersurface of the skin was under-run with the muscle fascia to reduce dead spaces which could lead to haematoma formation and subsequent infection with 3.0 vicryl. Skin edges were apposed with nylon 2.0 using simple interrupted technique. Wound was subsequently cleaned and dressed. Patient lost about 400mls of blood (intraoperative loss and blood suctioned from the airway). He was transfused with one unit of whole blood intraoperatively.



*Figure 3. Patient in the theatre after completion of repair.*

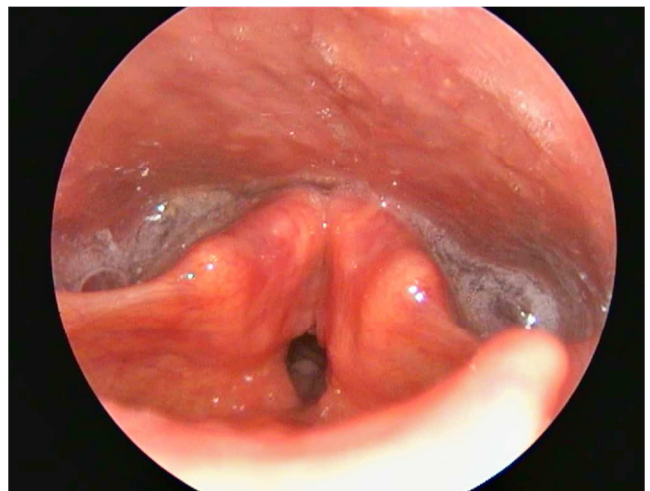


*Figure 4. Patient at follow up two weeks after repair.*

### 3. Results

On completion of the surgery, patient was transferred to the ICU where anaesthesia was reversed with endotracheal tube in situ and oxygen provided at the rate of 4L/min with oxygen saturation maintained at 95-99 percent. Patient was placed on antibiotics and steroid (IV dexamethasone for 24 hours). Post-operative pain was adequately managed with analgesics. Patient responded very well and was extubated on the second post-operative day and commenced graded oral feeding afterwards which was well tolerated. He was assessed by the psychiatrist on the second post-operative day and the review revealed that the act was premeditated with previous behavioral changes like withdrawal to self and reduced appetite. He attested to auditory hallucinations and reduced mood, reduced energy and loss of interest in previously pleasurable activities. An assessment of depressive type of schizoaffective disorder was made. All sharp and potentially harmful objects were removed from his bed side and nurses and family members were always at his bed side to monitor him. He was commenced on anti-depressants and anti psychotics. He also had individual psychotherapy sessions with the clinical psychologist. Over the period of a week, patient's speech and appetite improved, delusions began resolving and he became remorseful about attempting suicide.

The nylon sutures were removed on the seventh post-operative day and patient was discharged from the hospital on the eight post-operative day with residual hoarseness for follow up at the ENT clinic. Patient presented at our clinic two weeks after discharge (three weeks after the incident) for follow up. Anterior neck wound had healed leaving a transverse scar. Residual hoarseness persisted. Fiberoptic laryngoscopy done showed grade 1 glottic and sub glottic stenosis (see figure 5). Patient became compliant with his antidepressant and antipsychotic medications and was subsequently referred back to the neuropsychiatric hospital for continued psychiatric care based on care givers request and proximity and has been regular with his clinic visits. He is still being followed up in the ENT Clinic of Babcock University Teaching Hospital.



*Figure 5. Fiberoptic laryngoscopy done three weeks after repair.*

### 4. Discussion

The incidence of suicidal cut throat injuries in our country may be fortunately rare or grossly under reported in literature.

However, when they occur, a multidisciplinary management between the otorhinolaryngologist, the anesthetist and the psychiatrist is required. Assessment of these patients begins with the ABCs of resuscitation.

Our patient presented in respiratory distress and the management of the airway was via the use of endotracheal tube to secure a reliable airway and through which anesthetic gases were administered to allow for proper surgical repair of the lacerated anterior neck structures under general anaesthesia.

The anesthesiologist secured an intact airway, the otorhinolaryngologist explored the wound, assessed the injury and surgically repaired it to restore breathing, swallowing and phonation while the psychiatrist managed the underlying depressive illness.

Suicide is one of the ten leading causes of death with more than a million deaths occurring annually [1]. It is about 20 times more common in individuals with major depressive illness than in the general populace and as such, these patients will require psychiatric evaluation and intervention [9] There is a need for close psychiatric care and supervision in the immediate post-operative period and discharge from

otorhinolaryngologist care.

Unemployment and relationship breakdown are stressful life events that can lead to suicide as seen in the index case. Previous studies have demonstrated an increase in the rates of suicide and attempted suicide among unemployed individuals than in the general population [10] There is a bidirectional relationship between mental illness and unemployment as individuals with mental illness are less likely to be employed than those without mental illness and the lack of employment in those with mental illness can aggravate the illness [11] The need to screen the general populace for mental illness and adequately treat affected individuals cannot be overemphasized. Since about 85% of all cases of suicide occur in the middle and low income countries, improvement in the socioeconomic status of the populace will translate into a reduction in the rate of suicide and attempted suicide.

## 5. Conclusion

Suicidal cut throat injuries though seen in our environment are rare.

A close collaboration between the otorhinolaryngologist, anesthetist and the psychiatrist is essential for a favourable outcome.

Adequate screening for mental illness and provision of adequate psychiatric care is essential for preventing suicide and parasuicide including suicidal cut throat injuries.

## Competing Interests

All the authors do not have any possible conflicts of interest.

## Author's Contributions

i. Adeyeye Rachael Adetola: literature review, writing of otolaryngological aspect of case report and discussion.

ii. Akinola Michael Ayodele: proof reading and editing of manuscript.

iii. Fasesan Oluwatoyin: writing of the psychiatry aspect of case report.

iv. Ogundare Emmanuel: writing of the anaesthesia aspect

of case report

v. Agbaakin Adewale Daniel: Otolaryngological aspect of case report

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