

Management of cut-throat injuries

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Introduction

Cut-throat injuries (CTIs) are defined as incised injuries or those resembling incised injuries in the neck inflicted by sharp objects. This may result from accident, homicide, or suicide. CTIs are potentially life threatening because of the many vital structures in this area. These patients need emergency and multispecialty care. In this part of the world, suicide is the major cause of CTIs. Exposed hypopharynx and/or larynx following a cut throat, hemorrhage, shock, and asphyxia from aspirated blood are the most common causes of death following a CTI.

Materials and methods

This retrospective study was carried out in the Department of Otorhinolaryngology and Head Neck Surgery, Government Medical College, Srinagar, J&K, India, and included 26 CTI patients who were brought to our department for treatment. The demographics of the patients, site, cause, and nature of the CTI, and the type and outcome of treatment received were recorded and analyzed.

Results

This study showed that young men from rural areas were most susceptible to CTIs. The leading cause of a CTI was a suicide attempt. Among patients who attempted suicide, the reason was psychiatric illness most of the times. The majority of the patients in our study had a cut in the center of the neck, with injury to skin, soft tissue, and the larynx/pharynx. Of 26 patients, 24 recovered completely, whereas two patients died. In our study, 15 out of 26 patients were managed without tracheostomy.

Conclusion

All patients with a CTI should be referred immediately to hospital; early management of patients by a team of specialists can save the life of the patient most of the time. All patients who have attempted suicide should undergo a psychiatric evaluation. This is because the act of suicide is a sign of an underlying mental illness and there may be a possibility of a second attempt. Not all patients with CTIs require tracheostomy. The majority of patients with CTIs can be managed without tracheostomy.

Keywords:

cut throat, hemorrhage, homicide, psychiatry, suicide, tracheostomy

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Introduction

Neck injuries are potentially dangerous and require emergency treatment. The location of the injury can predict risk and management. Open or incised injuries or those resembling incised injuries in the neck inflicted by sharp objects such as razor, knives, or broken bottle pieces or glasses that may be superficial or penetrating in nature may be described as 'cut-throat injuries' (CTIs) [1–3]. This may result from accident, homicide, or a suicide attempt. CTIs are potentially life threatening because of the many vital structures in this area. There may be a possibility of severe hemorrhage from damaged major blood vessels, air embolism, or airway obstruction. The common causes of CTIs in this part of the world are suicide attempts. Family problems, psychiatric illness, unemployment, and poverty may be the triggering factors in suicide attempts. The motives for homicide may include land-related disputes, sex-related crimes, familial disharmony, etc. Exposed

hypopharynx and or larynx, hemorrhage, shock, and asphyxia from aspirated blood are the common causes of death following a CTI. It is known that appropriate measures can save lives in the majority of cases [3]. Prevention of these complications depends on immediate resuscitation by securing the airway by tracheostomy or intubation. The value of tracheostomy in the management of CTI has been highlighted in the literature [4,5]. Prompt control of external hemorrhage, blood replacement, and prompt intervention or operative treatment should be performed when indicated. All patients who have attempted suicide should undergo a psychiatric evaluation. This is because the act of suicide is a sign of an underlying mental illness and there may be a possibility of a second attempt. Victims of homicidal CTIs need psychological support to overcome the trauma to their psyche, which may remain long after the neck wounds have healed [6].

Assessment of patients with CTI begins with the ABCs of resuscitation, that is, checking the airway, and evaluating the patient's breathing and circulation. Resuscitation of individuals should be commenced immediately.

When the victims present to hospital, the anesthesiologist secures an uncompromised airway and ensures that the patient is breathing and the otorhinolaryngologist assesses the injury and surgically repairs the severed tissues with the aim of restoring breathing, swallowing, and phonation. The psychiatrist provides adequate care and supervision during and after the surgical repair of severed tissues.

Materials and methods

This retrospective study was carried out in the Department of Otorhinolaryngology and Head Neck Surgery, Government Medical College, Srinagar, J&K, India, and included 26 patients with CTIs who were brought to our department for treatment. Informed consent was obtained from the relatives of all patients for this study. This study was approved by the institutional ethics committee. All patients were resuscitated; depending on the condition of the patient, tracheostomy was performed when required and blood transfusion was administered in patients who had severe bleeding. After stabilizing the vitals, the wound of the patients was examined and depending on the condition of the wound, primary or secondary repair was performed. Subsequently, the cause of the CTI was enquired. Patients who made suicidal attempts were referred to the psychiatrist for evaluation.

Results

The results are displayed in Tables 1–5.

Discussion

CTIs are reported scarcely in the medical literature. CTIs and associated deaths are not uncommon in our society. There are reports in the medical literature of CTIs from West Africa on the complication and principles of management of such wounds, with an emphasis on the forensic implications [2]. An article on open neck injuries stressed on surgical airway problems [5]. In our study, 26 CTI patients were brought to the Department of ENT and Head Neck Surgery, Government Medical College, Srinagar, for

Table 1 Demographics of the patients

Parameters	n = 26 [n (%)]
Residence	
Rural	16 (61)
Urban	10 (39)
Sex	
Male	23 (88)
Female	3 (22)
Age	
≤20 years	5 (19)
21–35 years	7 (27)
36–50 years	8 (31)
>50 years	6 (23)
Age (years) (mean±SD)	36 ± 7.2

Table 2 Type of wound repair

	n = 26 [n (%)]
Primary repair without tracheostomy	15 (58)
Primary repair with tracheostomy	9 (34)
Secondary repair without tracheostomy	0 (0)
Secondary repair with tracheostomy	2 (8)

Table 3 Outcome of injury

	n = 26 [n (%)]
Full recovery without any defect	20 (77)
Full recovery with permanent defect	4 (15)
Death	2 (8)

Table 4 Days of hospital stay

	n = 26 [n (%)]
1–7 days	17 (65)
8–14 days	6 (23)
15–21 days	2 (8)
>21 days	1 (4)

Table 5 Psychiatric ailments in patients who had attempted suicide

	n = 15 [n (%)]
Major depression	5 (33)
Minor depression	1 (8)
Schizophrenia	2 (13)
Bipolar disease	2 (13)
None	5 (33)

treatment. Aich *et al.* [7] studied 67 cut-throat cases; 47 were males and 20 were females, between 7 and 73 years of age (mean 28.82±11.38 years). The majority of victims were young adults [41 (61.19%)] between 21 and 30 years of age, 52 (77.61%) were from a rural community, and 53 (79.10%) belonged to the low socioeconomic class. In our study of 26 patients, the majority were males (88%) from rural areas (61%), and patients in the age group 36–50 years were most vulnerable, similar to the results of the above-mentioned study. Adoga *et al.* [8] published a

case series of three patients with CTIs; all three of these patients had attempted suicide. In terms of the cause of injury in our study, attempted suicide was the cause in 58%, homicide in 38%, and accidental in 3% of patients. Mohanty *et al.* [9] studied 588 suicide victims, financial burden (37%) and marital disharmony (35%) were the principal reasons for suicide attempts. In our study, the causes of suicide were psychiatric illness, unemployment, and family troubles, which was in agreement with the above study. The causes of homicidal injuries were land-related disputes and sex-related crimes. One patient had an accidental CTI because of a fall on broken glass. Modi and Pandey [10] observed that in India, suicidal wounds of the throat are rare. In contrast, CTIs were reported to be caused by suicide attempts in the majority of cases in western studies [11,12]. In our study males with CTI were more in number than females with CTI.

As CTI is a major neck injury, most of the victims were sent to the nearest available medical facilities as early as possible. Majority were referred to the tertiary hospital for appropriate intervention within 24 h. Poor communication, inadequate first-aid knowledge and facilities, and lack of skilled manpower in peripheral centers were responsible for delayed presentation to hospital. Very few had been managed properly outside. A number of victims presented with an open wound and active bleeding. Onotai and Ibekwe [13] concluded that CTIs require a multidisciplinary approach and can be managed with a better prognosis if patients present early to the hospital and receive prompt attention.

In our study, the majority of patients (65%) had injury in the center of the neck and a cut was the most common type of injury. Five patients had only skin and soft tissue injury, 19 patients had skin, soft tissue, and larynx/pharynx injury, one patient had injury to the skin, soft tissue, and major vessel (external jugular vein), and one patient had injury to the skin, soft tissue, larynx/pharynx, and major vessel (left common carotid and internal jugular vein). In our study, primary repair of the wound was performed in 24 patients, out of whom nine patients required tracheostomy in view of upper respiratory obstruction. Secondary repair of the wound was performed in two patients; both these patients had a necrotic wound and upper respiratory obstruction. Tracheostomy was performed in both these patients. In all patients who had attempted suicide, psychiatric evaluation was sought. This was because the act of suicide is a sign of an underlying mental illness and there may be a possibility of a second attempt. A study reported 25% of patients as having made a second attempt at suicide

[6]. Nock *et al.* [14] concluded that mental disorders predict suicidal behaviors similarly in both developed

Fig. 1



Homicidal cut-throat injury.

Fig. 2



Cut-throat injury during repair.

Fig. 3



Suicidal cut-throat injury.

and developing countries. Our study showed that 66% of attempted suicide cases had some form of psychiatric ailment; 33% had major depression. Two patients had schizophrenia which includes a patient with history of 3 suicidal attempts. Venkatachalam *et al.* [15] reported on a case of a penetrating cervical tracheal injury because of 'chain snatching' in a young female. The young female patient presented to the Emergency Department with a bleeding neck wound. Orotracheal intubation was performed after resuscitation, indicating a transected trachea. There was no injury to the major vessels or nerves; thus, the wound was debrided and closed in layers and a tracheostomy tube was placed through the transected trachea. Postoperatively, the patient was ventilated for 72 h, after which she recovered completely. In our study, 20 patients out of 26 achieved full recovery without any permanent defect, four patients recovered with some permanent defect (three patients had hoarseness of voice and one patient had upper airway stenosis/web formation), and two patients died, of whom one 15-year-old male with a homicidal injury had a stab injury on the left side of the neck, with injury to the left common carotid and the internal jugular vein; in this patient, 6 U of blood were transfused and major vessels were ligated. He developed hemiplegia and hypotension in the postoperative period. Subsequently, the patient went into shock and died on the second day of admission to the hospital. The second patient who died had an injury because of attempted suicide; this patient was a 50-year-old man with a cut in the center of the neck. He died because of cardiac arrest on the second day of admission. Hospital stay was prolonged in tracheostomized patients and patients in whom additional wound care was needed (Table 4).

Acknowledgements

Conflicts of interest

None declared.

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