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A Study of Cut Throat Injuries During COVID-19 Pandemic in a Tertiary Care Centre

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ABSTRACT
To comprehend the pattern, incidence and different types of cut throat injuries during the COVID-19 epidemic. This study is a retrospective analysis of patients with cut throats who received care at Jorhat Medical College's ENT department between June 2021 and May 2022. The majority of cases in our research were male, with a M:F ratio of 1.25:1. The common age group is between 20 and 30 years old, has a lower socioeconomic status and works as a farmer. The study examined 28 cases of cut throat injuries, including 8 homicides, 15 suicide attempts, and 5 injury-related incidents. During the epidemic, suicides were more prevalent than homicides. Every patient in our research had primary wound healing, with five of them needing a tracheostomy to maintain their airway. Anterior neck injuries, blood vessel, airway damage and rehabilitation.

INTRODUCTION

The extent, depth and causes of anterior neck injuries vary. They can be accidental, homicidal or suicidal[1]. Management of cut throat injury is difficult due to dense concentration of vital vascular, aerodigestive and nervous structures in the neck. Thorough anatomical knowledge of the neck is essential for proper management and to prevent any catastrophe during management[2,3]. In polytrauma cases, otolaryngologist should focus on identifying airway emergencies and maintaining airway patency. To avoid misdiagnosis and inadequate management, trauma cases must be approached in an organised and multidisciplinary manner.

Suicide attempts are often the result of family problems, mental diseases, poverty and broken relationships on the other hand, homicidal cut throat injuries are often the result of political upheaval, sex-related crimes and family and property conflicts[4]. Tracheostomy was done when there was a risk of airway blockage or blood aspiration[5].

The extent of the damage varies from superficial tissue damage and skin injuries to severe blood vessel and airway damage and even bone depth. All patients with cut throat injuries were evaluated by classifying the damage into one of three neck anatomical zones. Zone I is the space between the clavicle and the cricoid cartilage. Zone II is situated between the mandibular angle and the cricoid cartilage. Zone III is situated between the base of the skull and the mandibular angle[6].

For homicidal cutthroat victims to fully recover from the psychological trauma they have experienced which can last long after the scars on their necks have healed they need psychological care[7]. It was recommended that all individuals with suicidal cut neck injuries seek mental health counseling. This is due to the possibility that suicide is a sign of an underlying mental disorder that has to be treated. The patient's rehabilitation is the aim, which has the potential to save lives.

Aims and objectives: To determine the incidence and various modes of cut throat injury.

MATERIALS AND METHODS

This study is a retrospective analysis of patients with cut throat injuries who received care in the Jorhat Medical College ENT department over the course of a calendar year, from June-May 1-31, 2022. A comprehensive analysis was conducted on 28 instances, including all pertinent details including the history, epidemiological variables and clinical presentation. When a surgical intervention was necessary, the patient's guardians or family members gave their informed permission. It was possible to get a thorough history of drug usage, familial conflict and mental health problems. Age, sex, employment, manner of injury and anatomical zone with extent of injuries and results were among the variables taken for study. The socioeconomic categorization of Kuppusamy considers factors such as education, work level and family income. higher socioeconomic class is indicated by a score of 26-29, higher middle class by 16-25, medium class by 11-15, lower upper class by 5-10 and lower socioeconomic class by 0-5. Tables and charts were used to display the data.

Some cases arrive in shock but the majority arrived at the causality in serious condition. Advanced trauma life support (ATLS) which starts with a main assessment that focuses on the airway, breathing, circulation, disability and exposure, was used to examine all patients who had suffered a cut throat injury. Normal saline infusion, haemaccel or emergency blood transfusion were given to a patient who was in shock. Compressive bandage or digital pressure was used to stop active bleeding from a cervical incision until the patient got appropriate surgical care[8].

First, surgical repair was carried out after hemostasis and hemodynamic stability were preserved. Cuts on the neck surface were treated with a straightforward layered wound closure. Any damage to the vascular or aerodigestive tract were treated in an operating room following tracheostomy airway securing. Bleeding sites were examined and sealed or coagulated. Leopold claims that patients who underwent surgery within 24 hrs of their damage fared far better in terms of their voice and airway outcomes[9]. When a cut injury affected the hypopharynx, Ryle's tube was implanted. Postoperative wound care was given. X-ray soft tissue neck lateral and AP view, X-ray chest PA view and CT scan neck were the investigation done. Relevant haematological tests was done like R/E BLOOD, ESR, HBSAG, HCV, ICTC, PT-INR etc. To prevent infection, broad-spectrum antibiotics were administered. Dressings were applied on regular basis. The sutures were removed after 7 days. Following the patient's discharge a 6-month follow-up was performed, along with an endoscopic examination of the airway. In suicidal cut neck cases, psychiatric consultation was sought.

RESULTS AND OBSERVATION

In our study, according to site of cut throat injury zone II injury had highest incidence constituting 72% of cases followed by zone-III (18%) and zone-I (9%).

DISCUSSIONS

Twenty eight instances of cut throat injuries were treated over the course of a year, making up 2.7% of The M: F ratio in our study was 1.25:1, meaning that

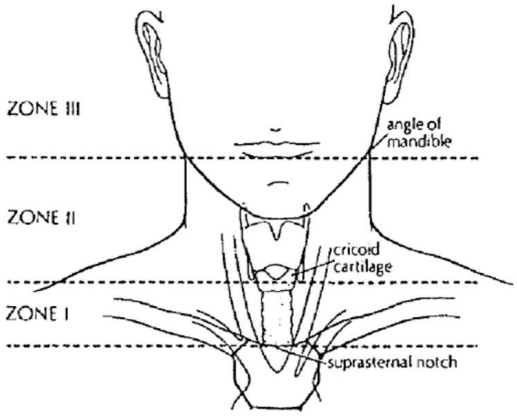

Fig. 1: Anatomic zones of neck trauma[10,11]

Fig. 2: Suicidal cut neck injury with tracheostomy before and after repair

Fig. 3: Suicidal cut neck injury with tracheostomy before and after repair

55.5% of the patients were male and 45.5% were female. It resembled a research by Aich *et al.* in which the proportion of men exceeded that of females[12]. The age range was 21-78 years old. Thirty-thirty years old was the most prevalent age group affected (36 per of cases). According to an Onotai *et al.* research the age group most frequently impacted was 31-35 years old[13]. In their investigation, Panchappa *et al.* discovered that every patient with a cut throat came from a lower socioeconomic background (Kuppuswamy class 5). Participants in the research ranged in age from 4-80 years old (mean 25.2). Young people between the ages of 20 and 40 made up the bulk of the patients[14]. Sachdeva *et. al* in their study found Every one of their neck trauma patients comes from a poor socioeconomic background. Of the cases, 23.5% came from urban regions and 76% came from rural ones[15]. Six patients (21%) and eighteen (64.2%) respectively,

Fig. 4: Cut neck injury following alleged history of physical assault

Fig. 5: Suicidal cut neck injury (anatomical zone II)

Fig. 6: Homicidal cut throat injury

belonged to the upper bottom (class 4) and lower (kuppuswamy class 5) socioeconomic classes in the current research. In the current investigation, it was also noted that patients with poor literacy rates had suicide cut neck injuries. In the Jorhat district the average literacy rate was 82.15%. Aich *et al.* in their study found that Sixty nine per of those who had cut throat injuries were young individuals, seventy seven percent came from rural areas and seventy nine percent were from lower socioeconomic groups[12]. In a study by Iseh *et al*., 10 (52.6%) injuries were from attempts at suicide, five (26.3%) from assaults by

Table 1: Distribution of patients according to age

Age in years	No. of cases	Percentage
10-20	0	0
20-30	10	36
30-40	8	29
40-50	6	21
50-60	1	3
60-70	2	7
70-80	1	4
≥80	0	0
Total	28	100

Table 2: Distribution of patients according to anatomical zones of injury

Anatomical site	No. of cases	Percentage
Zone I	3	9
Zone II	20	72
Zone III	5	18
Total	28	100

Table 3: Table showing mode of injury and motivating factors for cut throat injury cases

Mode of injury	Motivating factors	No of cases	Percentage
Homicidal	Interpersonal conflict	5	17.8
	Family dispute	2	7.1
	Robbery	0	0
	Sexual violence	0	0
	Others	1	3.5
	Total	8	29
Suicidal	Psychiatric illness	4	14.2
	Family issues	1	3.5
	Unemployment	2	7.1
	Substance abuse	8	28.5
	Total	15	53
Accidental	Road traffic accident	1	3.5
Fall over sharp object		2	7.1
	Accidental injury	2	7.1
	Total	5	18

Table 4: According to extension of injury of cut throat cases

Extension of injury	No. of cases	Percentage
Skin and subcutaneous tissue	19	68
Airway injury	6	21
Major vessel injury	3	11
Oesophageal injury	0	0
Total	28	100

Table 5: Showing socioeconomic status of patients according to kuppuswami's classification

Sex	Upper	Upper middle	Lower middle	Upper lower	Lower
Male	0	0	2	4	10
Female	1	1	0	2	8

Table 6: Table showing treatment provided

Treatment	Number of cases	Percentage
Primary repair and closure	20	71.2
Ligation of major vessels	3	10.7
Laryngeal repair	1	3.57
Supraglottic region repair	3	10.7
Tracheostomy	5	17.8
Blood transfusion	3	14.2
Psychiatric consultation	16	57.1

people that culminated in attempted murder, 2 (10.5%) from attacks by animals and the other two came from collisions with moving vehicles and falls onto sharp objects[16]. During the COVID-19 pandemic, there were greater rates of self-harm (9.63%) suicide thoughts (10.81%) and suicide attempts (4.68%) than in pre-pandemic research according to a study by Justin *et al*.[17]. In the current study the most frequent type of injury, accounting for 53% of instances, was a suicide cut throat, followed by homicidal cases (29%) and accidental cases (18%) which comprised injuries sustained in traffic accidents, falls over sharp objects and injuries from any object that happened to fall into the neck area accidentally. It was comparable to a study conducted by Simpson *et al*.[18]. Mohanty *et al.* in their study found that the two main causes of suicide were marital discord (35%) and financial strain (37%)[19]. In a study by Gilyoma *et al.*, For homicidal injury, interpersonal conflict accounted for the majority of motivational factors (24.4%). The most common causes of suicidal thoughts (16.2%) and accidental injuries (9.2%) were mental disorders and traffic accidents, respectively[20]. In the present study the most prevalent driving element for homicidal cut neck injuries was interpersonal conflict (17.8%). Substance misuse (28.5%) and psychiatric disease (14.2%) were the leading causes of suicidal injury. The primary cause of accidental injuries, which accounted for 18% of cases, was an unintentional blow from sharp objects. Based on the categorization of neck injuries by Roon and Christensen a research was conducted. Herzog *et al.* discovered that zone II is more vulnerable to injuries[21]. Manilal and Okayo *et al.* concluded that the majority of injuries in their study were in Zone II and that the majority of them had laryngeal injuries, which is consistent with our study[22].

According to the site of the cut throat injury, Zone II injury had the highest occurrence in the current research (72% of cases) followed by Zone III (18%) and Zone I (9%). Among the 28 cases of cut throat injury, skin and soft tissue involvement was seen in 19 cases accounting for 68 per. Airway injury was observed in 6 cases (21.4%) which included patients of polytrauma, physical assaults and accidental injury over neck. Among them injury to supraglottic region was seen in 3 cases. Trachea was injured in one case (4.87%). Injury to major vessel was seen in 3 cases (10.7%). In the present study the treatment provided to cut throat cases were studied. It was seen that simple wound closure was performed in 20 (71.2%) of the cases. Laryngeal repair was performed in 1 (3.57%) of the cases. In three (10.7%) cases, repair of supraglottic region was performed. Tracheostomy was performed in 5 (17.8%) of the cases. Blood transfusion was administered in 3 (14.2%) of the cases. Psychiatric consultation was obtained in 16 (57.1%) of cases. The study highlights the significance of tracheostomy in the management of cut throat injuries by Ezeanolue *et al*.[23] In our study, Suicide is an indication of an underlying mental illness and all patients who tried suicide required psychiatric evaluation since further attempts are probable.

CONCLUSION

Young male adolescents between the ages of 20 and 30 who came from lower and upper lower socioeconomic backgrounds made up the bulk of patients with cut throat injuries. A successful outcome

requires timely and correct management. Patients who present with laryngeal or upper tracheal injuries required an immediate tracheostomy. This enables the surgeon to perform primary wound closure and protection against aspiration. Furthermore the wound site receives the rest it requires for early healing. Cut throat injuries are more common in our culture if the underlying causes such as poverty, drug misuse, unemployment and illiteracy are addressed.

Limitation of our study: The research had a one-year duration and a modest sample size during the epidemic.

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