RETROSPECTIVE STUDY OF MANAGEMENT AND OUTCOME OF CUT THROAT INJURY IN A TERTIARY CARE CENTRE

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ABSTRACT

BACKGROUND

Cut throat injuries are potentially devastating type of injuries with associated emotional, physical and financial burden on community and hospital resources. As per definition, cut-throat injuries are incised injuries or those resembling incised injuries in the neck inflicted by sharp objects. In developing countries, the incidence is increasing at a rapid rate partly because of increasing conflict over limited resources, poor socioeconomic status, poverty, alcohol and substance misuse and increased crime rates. This study was conducted in our setting to describe the aetiology, patterns and treatment outcome of these injuries. Multidisciplinary approach is required for the effective management of these patients.

MATERIALS AND METHODS

This study was carried out in the department of otorhinolaryngology of a tertiary care centre of North Bengal. The demographics of the patients, site, cause, nature of the cut throat injury, treatment received, and outcome were analysed.

RESULTS

This study showed that young men from rural areas were most susceptible to cut throat injuries. There were 32 (72.7%) males and 12(27.27%) females with a male to female ratio of 2.66:1. The age of victims ranged from 16 to 48 years with a mean age of 31.13 year. The peak age of incidence was in the age group of 21-30 years and accounted for 54.54% of cases. The majority of patients, 32(72.7%) were from low socioeconomic classes. The commonest causative factor was suicidal attempts.

CONCLUSION

Cut throat injuries are increasing rapidly in this region. Almost all the patients presented at emergency and needed urgent surgical intervention. Thorough clinical examination, restoration of airway, where the patient is in shock, fluid and blood transfusion, repair of the injury and close follow up these patients, give good outcome and prevent complications and death.

KEYWORDS

Cut throat injury, airway restoration, resuscitation, urgent surgical intervention.

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BACKGROUND

Cut throat injuries are potentially devastating type of injuries with associated emotional, physical and financial burden on community and hospital resources.[1] Cut throat injury and associated death are common in our society. Its incidence varies in different regions. As per definition, cut-throat injuries are incised injuries or those resembling incised injuries in the neck inflicted by sharp objects.[2,3,4] Globally, these injuries account for approximately 5% to 10% of all traumatic injuries with multiple structures being injured in 30% of patients.[5-9] However, in developing countries the incidence is increasing at a rapid rate partly because of increasing conflict over limited resources, poor socioeconomic status, poverty, alcohol and substance misuse and increased crime rates.[10] Familial troubles, psychiatric illnesses and poverty are major triggering factors in suicidal attempts.

Fatalities resulting from sharp force injuries can be of suicidal, homicidal or accidental origin. It poses a great therapeutic challenge as multiple vital structures are vulnerable to injuries in the small, confined unprotected area.[11] Exposed vital structure, haemorrhage, shock and asphyxia from aspirated blood are the leading cause of death following a cut throat injury.[4] This study was conducted in our setting to describe the aetiology, patterns and treatment outcome of these injuries. Multidisciplinary approach is required for the effective management of these patients.

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MATERIALS AND METHODS

This prospective study was carried out in department of otorhinolaryngology, in a tertiary care centre of North Bengal. In this study the hospital record of 44 such cases were reviewed in last 2 and 1/2year (Sept. 2014- Mar. 2017). The demographics of the patients, site, cause, nature of the cut throat injury and outcome of treatment received were recorded and analysed. Minor trauma to neck, blunt injury to neck and brought dead patients were excluded from the study.

RESULTS

This study showed that young men from rural areas were most susceptible to cut throat injuries. The peak age of incidence was in the age group of 21-30 years and accounted for 54.54% of cases (Figure 1).

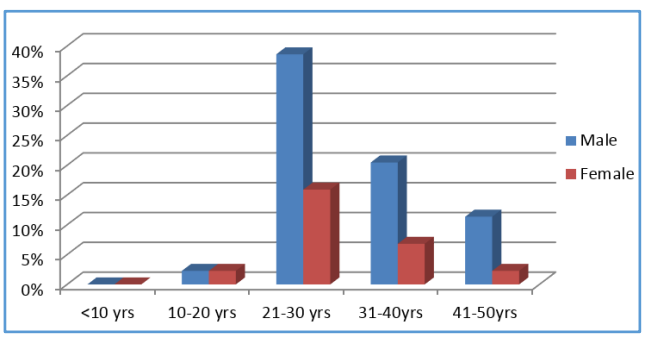

Figure 1. Distribution of Age Group According to Sex

The vast majority of patients, 34 (77.27%) had primary or no formal education. 39(88.6%) were from rural area. 72.7% were unemployed. The majority of patients, 32(72.7%) were belong to the low socioeconomic class. Regarding the causes and motivating factors for cut throat injury, 34(77.27%) patients were due to suicidal attempt, 7(15.9%) patients were due to homicidal injury and 3(6.81%) were due to accidental injury. Psychiatric illness and substance abuse were the most frequent motivating factors of suicidal attempt whereas interpersonal conflict was the most common motivating factor for homicidal injury. The majority of injuries were in Zone II and most of them had laryngeal injury as shown in Table 1.

Variables		Frequency	Percentage
Anatomical Site	Zone I	1	2.27%
	Zone II	41	93.18%
	Zone III	2	4.54%
Structures Injured	Skin, platysma, fascia, muscle	44	100%
	Laryngeal framework	19	43.1%
	Hypopharynx	0	0
	Trachea	0	0
	Major vessels (common carotid, internal carotid, IJV) and nerves	4	9.09%

Table 1. Anatomical Site and Structures Injured

All patients in this study underwent surgical procedures as depicted in Table 2. 14 patients required endotracheal intubation at the time of repair. Primary repair without tracheostomy was the most common surgical procedures performed accounting for 56.8% of patients. Airways were secured, breathing and circulation were maintained. Patients were primarily assessed along with clinical survey. Wound explorations were done, arterial and venous bleedings were secured. Primary repair of cartilage and mucosa were done. Postoperative follow ups were done along with psychiatric consultation. The overall length of hospital stays ranged from 8-21 days. Of the survivors, 24 patients were discharged well, 4 patients were discharged with permanent disabilities i.e. one with brachial plexuses injury and 3 other patients had persistent voice change. Of the survivors, only 17 patients were available for follow-up and the remaining 24 patients were lost to follow-up.

Variables	Frequency	Percentage
Presentation of Patients		
Open Wounds	42	95.4%
Active Bleeding	29	65.9%
Inadequate Wound Management	7	15.9%
Haemorrhagic Shock	15	34.09%
Respiratory Distress	16	36.36%
Primary Repair Without Tracheostomy	25	56.8%
Primary Repair With Tracheostomy	19	43.18%
Blood Transfusion	16	36.36%

Table 2. Presentation of Patients at the time of Injury and Type of Wound Repair

Full recovery without any disabilities	41(93.1%)
Recovery with permanent disability	4(9.09%)
Death	3(6.81%)

Table 3. Outcome of Injury

Figure 1. Intra and post-operative Picture of Patient

Figure 2. Intra and Post-Operative Picture of Patient

DISCUSSION

Cut throat injuries are challenging for the surgeons as these patient come in emergency. These patients usually have respiratory problems, aspiration and haemorrhagic shock. Early management of patients by a team of specialists can save the life of the patient most of the time. The predominance of zone II injuries in this study may be attributable to the fact that unlike zones I and III, zone II is not protected by bony structures making it more vulnerable to injuries. Zone I injuries occur at the thoracic inlet. This zone extends from the level of the cricoid cartilage to the clavicles. Zone II injuries are those occurring in the region between the cricoid cartilage and the angle of the mandible. Injuries in this zone are the easiest to expose and evaluate. Zone III injuries occur between the angle of the mandible and the base of the skull. In our study none of the patients suffered from injury to the carotid vessels mainly due to its unique protection by different anatomical structures. There is a need for the collaboration of the otorhinolaryngologist, anaesthesiologist and psychiatrist in the effective management of these patients. Socioeconomic improvement is needed as a way of reducing the incidence of these injuries.

Aich et al. studied 67 cut-throat cases; 47 were males, mean age was 28.8 year. 77.61% were from a rural community, and 79.10% were from low socioeconomic class. This study resembles with our study. In our study 34(77.27%) patients were due to suicidal attempt which is similar to the study of Adoga et al.[12] Mohanty et al.[13] studied 588 suicide victims, financial burden (37%) and marital disharmony (35%) were the principal reasons for suicide attempts. Our study was in agreement with the above study. The majority of injuries were in Zone II (93.18%) which is similar to the Study of Bhattacharjee et al.[14] All patients in this study underwent surgical procedures and they required endotracheal intubation or tracheostomy at the time of repair. Primary repair without tracheostomy was the most common surgical procedures performed accounting for 56.8% of patients. Blood transfusion was given in 36.36% of cases. The overall length of hospital stays ranged from 8-21 days. In this study, three patients died. Of the survivors, 41 patients were discharged well, 4 patients were discharged with permanent disabilities i.e. one with brachial plexuses injury and 3 other patients had persistent voice change.

CONCLUSION

Cut throat injuries are increasing rapidly in this region. All the patients usually present at emergency and need urgent surgical intervention. Thorough clinical examination, restoration of airway, where the patient is in shock, fluid and blood transfusion, repair of the injury and close follow up of these patients give good outcome and prevent complications and death. Treatment of psychiatric illness and family support prevent repeated suicidal attempts.

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