A Comprehensive Study of Cut Throat Injuries at a TertiaryCentre

Dr. Elango K.M.[1], Dr. Swetha H.R.[2], Dr. Metri Rahul[3], Dr. Vinuth K.Murthy[4]

[1]Associate Professor Department of ENT, Government Vellore Medical College and Hospital, Vellore Tamil Nadu, India
[2]Associate professor, Department of Anesthesiology, Nandi Medical College and Research Institute, Chikkaballapura, Karnataka, India
[3]Junior Resident, Kempegowda Institute of Medical Sciences, Bengaluru, Karnataka, India
[4]Assistant Professor, Department of Anaesthesia, Kempegowda Institute of Medical Sciences, Bengaluru, Karnataka, India.

Corresponding Author
Dr. Vinuth K.Murthy,Assistant Professor, Department of Anaesthesia, Kempegowda Institute of Medical Sciences, Bengaluru, Karnataka, India.

Abstract:

Background: The incidence of trauma to the neck is on a rising trend in our society. Traumatic neck injuries comprise 5-10% of all trauma cases. A cut throat injury is a type of penetrating neck injury with a breach in nature, continuity of skin, soft tissues, larynx, and vital structures. **Aim:** To study the age, sex, distribution, and complications of cut throat injuries of the neck during the study period. **Methods:** It was a prospective observational study of patients admitted in the emergency department with cut throat injuries under Anaesthesia during the study period. **Result:** A Total of 24 cases were studied. 22 cases were males and 2 cases were females. With age distribution between 19yrs-55yrs with maximum cases between 21-25yrs. Commonest was accidental 12 cases(50%) , suicidal 8 cases(33.3%), homicidal(16.5%) 4cases. Most of the cases were intubated with an endotracheal tube and the airway was secured by Anaesthetist. **Conclusion:** Cut throat injuries were most common among male population. RTA-road traffic accidents were the commonest cause. ZONE ll of the neck was the commonest site. Cause of death is the time lag between injury and treatment. Early intervention prevented complications.

Keywords: Cut throat injury, penetrating neck injury, tracheostomy, suicidal, laryngotracheal stenosis.

Introduction:

Different modes of cut throat injuries are accidental, homicidal, and suicidal. The pattern of injury is of great importance in determining the mode of injury.(16)

A cut throat injury is defined as a type of neck injury with breach or dissolution in natural continuity of skin soft tissue and vital structures(1) Accidental wounds may be present anywhere on the body of varying severity without any mark of resistance or struggle at the place(2) presence of tentative cuts at the beginning of wound may serve as guide to differentiate suicidal and homicidal injuries(3) The feature of homicidal wounds are defence cuts or incised cuts seen on forearm and palmar surfaces(4) Accurate evaluation and proper treatment reduces mortality and morbodity(5) zones of neck injuries are. ZONE-1-From cricoid cartilage inferiorly into thoracic inlet. ZONE-2-- From cricoid superiorly to angle of mandible. ZONE-3-from angle of mandible to skull base superiorly.(5)

Accidental wounds may be present anywhere on the body of varying severity without any mark of resistance on the body or sign of struggle at the place(6) Cut throat injuries are clinically important injuries because of the proximity to vital structures located within a very small space.Since multiple structures are involved early recognition accurate evaluation and proper treatment is vital and overall mortality of cut throat injuries are as high as 11 percent.(7) Cut throat injuries may present as airway compromise aspiration or acute blood loss with hypoxemia because of injury to airway and major blood vessels. With the involvement of major blood vessels like carotid and subclavian case fatality is almost high in involved cases.(8) Every case should be assessed based on the extent of injury, the expertise of surgeon and anesthetist, the resources available to handle airway ,vascular and neurological problems.(9)Almost all zone1 and zone2 injuries require angiography for further evaluation and surgical intervention.(2). The surgical exploration was done under General Anaesthesia. (11)Patient is premedicated with intravenous glycopyrrolate 0.2 mcg, then induced with

intravenous fentanyl 2mcg/kg, intravenous propofol 2 mg/kg, intravenous succinylcholine 1.5mg/kg.[12]Endotracheal tube was secured with help of laryngoscope and bougie by trained anesthetist.Tracheostomy remains the very important life saving procedure particularly in patients presenting late with cut throat injuries and upper airway obstruction.[10]

Aim of study:

1. To study the age sex distribution, and commonest cause of cut thraot injuries during the study period.
2. To Study the modes of presentation of cut throat injuries.
3. To study the distribution of cut throat injuries
4. To study the complications of cut throat injuries during the study period

Materials and methods:

Study Type: The study is a prospective observational study

Study period: June 2021 to November 2022.

Based on the patients admitted in the institution from June2021 to November 2022 All pre operative, operative and postoperative patients were included.

Inclusion Criteria: All patients with cut throat injuries were included in whom airway was secured by Anaesthesiologist. Both males and females were included. All ages above 13 years were included in the study

Exclusion Criteria:

- Patients with polytrauma were excluded
- Patients with severe comorbid conditions were excluded
- Severe head injury and death during transport were excluded.
- Children below 13 years were excluded.

Statistical Analysis:

Mean (sd) and percentage of frequency was used. Continues and categorical variables were analyzed. p value. less than 0.05 considered as statistical significance.

Results:

In our study out of 24 total cases of cut throat injuries the majority were young adults. Majority of patients were males -91.7percent and females were -8.3percent.

Among the modes of presentation of cut throat injuries accidental injuries -12(50 percent) suicidal injuries -8(33.3 percentage) and Homicidal injuries -4 (16.7 percentage).

Among the distribution of cut throat injuries ZONE-2 was the commonest-21 patients (87.5 percentage).

Surgical management were done for all the cases. Emergency tracheostomy, emergency neck exploration with primary closure Elective neck exploration and closure were the surgeries done.

General anaesthesia were used in majority of cases -15 patients (62.5 percent) Local anaesthesia -9 patients(37.5 percent)

Complications occurred in 3 patients on post operative regular follow up.

Graph 1

Age in Years	No. of Patients	Percentage
13-20	2	803
21-25	6	25.0
26-30	2	8.3
31-35	5	20.8
36-40	3	12.5
41-45	3	12.5
46-50	2	8.3
>50	1	4.3
Total	24	100.0

Table 1: Age Distribution of Cut Throat Injuries during the Study

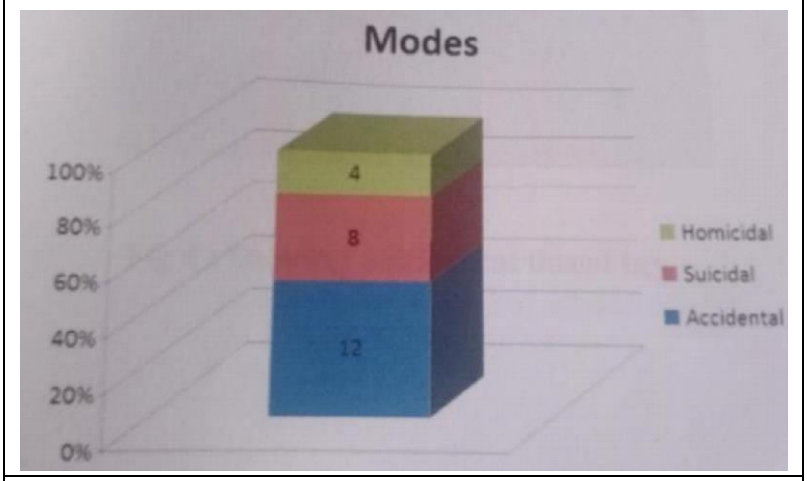
	No. Patients	Percentage
Male	22	91.7
Female	2	8.3
Total	24	100.0

Table 2: Distribution of Gender among Cut Throat Injuries

Graph 2

	No. of Patients	Percentage
Accidental	12	50.0
Suicidal	8	33.3
Homicidal	4	16.7
Total	24	100.0

Table 3: Distribution of cut throat injuries according to their modes of presentation

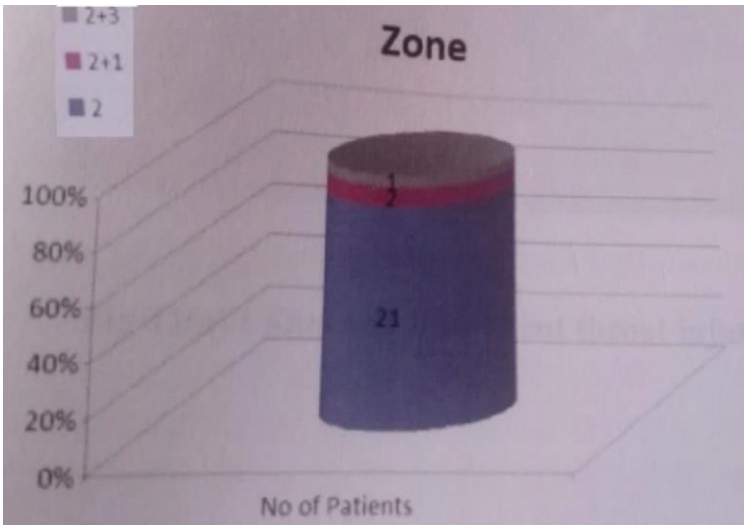


Graph 3

Zone	No. of patients	Percentage
Zone II	21	87.5

Zone I and Zone II	2	8.3
Zone III and Zone II	1	4.2

Table 4: Distribution of Cut throat injuries according to the zone of injury



Graph 4: Zones of cut throat injuries

	No. of cases	**Percentage**
Emerghency tracheostomy and primary neck closlure	9	37.5
Emergency neck exploration and primaryclosure without tracheostomy	13	54.2
Elective neck exploration and closure	2	8.3

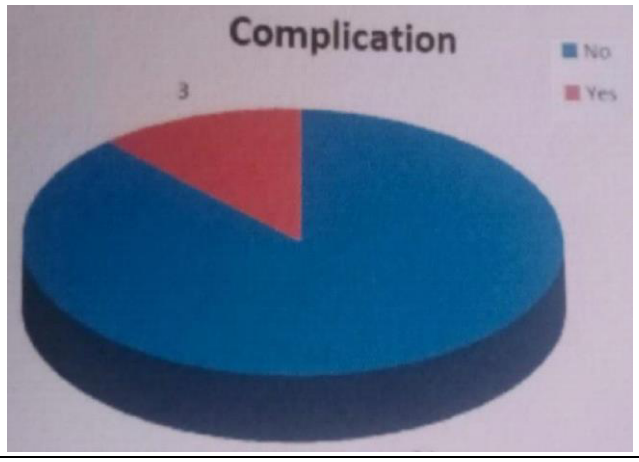
Table 5: Surgical Management

	No. of patients	**Percentage**
General Anaesthesia	15	62.5
Local Anaesthesia	9	37.5
Total	24	100.0

Table 6: Anaesthesia used

Total no. of cases	Vocal cord plasy		Persistent dysphagia	Stiffness of neck	Thyroid dysfunction	Others
	Unilateral	Bilateral				
24	1	1	1	0	0	0

Table 7: Complications



Graph 5

Discussion:

During the study period 24 cases were observed and treated. Most of the cases (91.7percent) were males indicating it is more prevalent among males than females because RTA -road traffic accidents were more among males than females. Majority of the patients were YOUNG adults with peak incidence of cases (66.6 percent) between 21-40 years with majority between 21-25 years (25 percent) indicating again RTA was more common among the younger moving population than the older and others. Accidental Cut Throat injuries were more common accounting for 50 percent of all cases followed by suicidal cut throat injuries - 33.3 percentage followed by Homicidal cut throat injuries-16.7 percentage indicating Road Traffic Accidents accounts for the majority of neck and cut throat injuries.

In our study 8 cases of suicidal cut throats occurred. Among the suicidal cut throat injuries DEPRESSION with suicidal intention was the commonest.

Among all the patients with cut throat injuries ZONE 2 injuries were the commonest Evaluation of airway was the primary priority Unstable airway due to edema haematoma flooding of air passages with blood slit tissue and fractures were causes for whom emergency tracheostomy was done. Among complications one patient had bilateral vocal cord paralysis and one had right vocal cord paralysis.

Accidental cut throat injuries were the commonest cause of cut throat injuries.Homicidal cut throat injuries need proper evaluation medico legaly.[5] Subanstance abuse (alcohol) are more found among the accidental cut throat injuries. Alcohol produces reduced impulse control, aggravation of emotional distress, reduced judgement and motor skills during driving responsible for many road traffic accidents Absence of seat belt usage is a contributing factor.[9] Familial conflict ,poverty, lack of job leading ro major depression is more common than preexisting psychiatric illness like Schizophrenia.[9] Cutting ones own throat in the form of suicide is more common in men than women.[2] Hemodynamic instability and shock may indicate a suspected vascular injury.[3] Meticulous

repair of hypopharynx, larynx, trachea and restoring the continuity was always needed to prevent post operative complicarions.[1] Unstable patients may require preoperative intubation and general anaesthesia for effective surgical procedure.[5]Our study was in par with the studies done earlier.

Conclusions:

Cut throat injuries were more common male population commonest cause being accidental injuries to the neck. Among the accidental cut throat injuries Road traffic accidents were common compared to other forms of trauma. ZONE 2 injury was the commonest zone involved. The complications of cut throat were most commonly seen when the time lag between the injury and initiation of treatment is delayed. Depth of injury is the main cause of complications. Voice disability due to vocal cord palsy and hoarseness of voice was the commonest complication. Early intervention in an improved setup with adequate and appropriate surgical management may avoid mortality and morbidity.

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