

## Pattern of Cut Throat Injuries in Lahore

MUHAMMAD MAQSOOD, MUHAMMAD KHALID CHAUDHRY, M. ZAHID BASHIR, AHMAD RAZA KHAN  
*Department of Forensic Medicine, Post Graduate Medical Institute, FMH College of Medicine and Dentistry and Shalimar Medical & Dental College, Lahore*

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### ABSTRACT

**Introduction:** Sharp weapon injuries were a common cause of death before the introduction of firearm weapons. They still cause a significant number of deaths. Sharp weapon injuries to the neck have to be differentiated as to the manner of death.

**Materials and Methods:** 85 cases where the cause of death was due to sharp weapon injuries to the neck were studied for various parameters like age, sex and indicators of manner of death.

**Results:** Deaths were primarily in 3<sup>rd</sup> and 4<sup>th</sup> decade of life with a male dominance. The spring season has the highest influence. An injury above the thyroid cartilage with tentative cuts and tailing was indicative of suicidal manner whereas an injury at or below the level of thyroid cartilage and involving the cervical vertebrae indicated homicidal manner of death.

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### INTRODUCTION

The neck is exposed to different types of injuries. Its prominence in forensic medicine is because of the presence of a large number of vital structures i.e. throat and larynx, major blood vessels, major nerve trunks, the spine and spinal cord and the fact that it is of a size that can be accessed, grasped and easily held.<sup>(1)</sup> Cut throat injuries are injuries to the neck with transection of the hypopharynx, larynx or trachea. These injuries may be suicidal, homicidal or accidental in manner.

The manner of infliction may be determined on the basis of the wound pattern. Suicidal injuries usually start high on the neck, below the angle of the jaw, opposite to the working hand and pass obliquely across the front of the neck to end at a lower level on the side of the working hand. These cuts are mostly deeper at the origin and tail off to surface cuts at the termination. Another pathognomonic feature is the presence of tentative cuts at the origin of the wound; these are multiple superficial cuts sometimes super imposed by the main cut. The presence of the weapon in the hands of the victim gives further credence to the opinion of a suicidal manner of death.

Homicidal manner of cut throat is determined by its being deeper, often cutting through the larynx to the vertebral column<sup>2,3,4,5</sup>. These may be present on any part of the neck. The presence of defense wounds and the absence of tentative cuts are also diagnostic<sup>7,9,10,11,12,16,17</sup>. The weapon is usually not present at the crime scene in these cases.

Accidental cut throat injuries are diagnosed by circumstantial evidence as these are sustained in

road traffic accidents by splintered glass or sharp broken pieces of metal detached from a vehicle or by glass mirrors<sup>6,9,13</sup>. In Pakistan, these may occur during kite flying as a result of chemically treated thread passing across the neck<sup>18</sup>.

In cut throat injuries death may be caused by hemorrhage, air embolism or respiratory obstruction / choking<sup>2,3,7,8</sup>.

### Objectives

1. To determine Age and sex distribution of victims dying of cut throat in the district of Lahore.
2. To determine any seasonal variation in the incidence of deaths due to cut throat injuries.
3. To verify the presence or absence of the classical parameters of manner of death in cases autopsied at our center

### MATERIALS AND METHODS

The study was carried out in the department of Forensic Medicine & Toxicology K.E.M.U Lahore. Findings were extracted from the autopsy reports, police documents and hospital records for a three year period from 1st January 2006 to 31st December 2008.

A total of 2979 autopsies were performed during the study period. Out of these 85 cases were selected where cut wounds on the neck were declared as the cause of death. These were studied for various parameters like age, sex, site & depth of wounds, presence or absence of tentative cuts, defense wounds, tailing of the wound, role of

intoxication, seasonal variation. Cases that had proceeded to the stage of putrefaction or where cause of death was other than the neck injuries in spite of having sharp weapon wounds on the neck were excluded from the study.

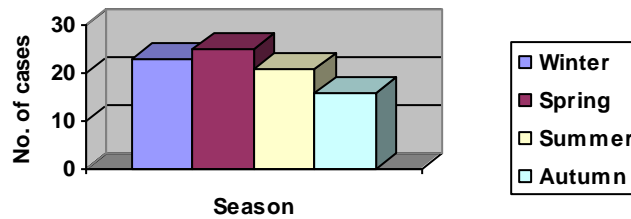
**RESULTS**

2.85% of the total autopsies performed at our department were deaths due to cut throat injuries. This constituted 33.20% of all deaths due to sharp weapons.

**Table 1:** Age and Sex distribution of deaths due to cut throat

Age	Male	Female	Total Cases
Up to 1 year	2	0	2
1 – 10 Years	7	7	14
11 – 20 Years	2	4	6
21 – 30 Years	15	10	25
31 – 40 Years	13	10	23
41 – 50 Years	5	2	7
51 – 60 Years	4	2	6
60 - Onwards	2	0	2
Total	50	35	85

**Fig I Seasonal variation in deaths due to cut throat**



**Table for Fig I:** Cut throat --- seasonal variation

Season	M	F	Total
Winter	13	10	23
Spring	12	13	25
Summer	15	6	21
Autumn	10	6	16
Total	50	35	85

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**Table 2:** No. of cuts and their relationship to thyroid cartilage

Relation to thyroid cartilage	Total	Homicidal (n = 78)			Suicidal (n = 4)			Accidental (n = 3)		
		Single	Multiple	Total	Single	Multiple	Total	Single	Multiple	Total
<b>Above</b>	13	3	6	9	3	0	3	0	1	1
<b>At level</b>	38	17	18	35	1	0	1	0	2	2
<b>Below</b>	34	18	16	34	0	0	0	0	0	0
<b>Total</b>	<b>85</b>	<b>38</b>	<b>40</b>	<b>78</b>	<b>4</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>3</b>	<b>3</b>

**Table 3:** Depth of wound in deaths due to cut throat

	Total	Homicide (n = 78) In %	Suicide (n = 4)	Accidental (n = 3)
<b>Hyoid Bone</b>	3	3.8	0	0
<b>C2</b>	1	1.28	0	0
<b>C3</b>	12	15.38	0	0
<b>C4</b>	14	17.94	0	0
<b>C5</b>	13	16.66	0	0
<b>C6</b>	2	2.56	0	0

Deaths due to cut throat were primarily in the prime of youth with 29.41% in the 3<sup>rd</sup> decade of life followed by 27.05% in the 4<sup>th</sup> decade. The extremes of age were relatively free of such deaths with 2.35% deaths in each decade. The male to female ratio was 1.42:1.

Deaths due to cut throat were predominantly homicidal in manner (91.76%). Four cases of suicide and three accidental deaths formed the other 8.24% of the cases. The accidental deaths were a result of chemically treated thread used for kite flying.

The injuries sustained on the neck in cases of deaths due to cut throat were mostly at the level of the thyroid cartilage or below it. In cases of suicidal deaths the injury was the above the thyroid cartilage in 75% of the cases and was always a

single cut as compared to multiple cuts in over 50% of the cases in homicidal and accidental deaths. This is shown in table II

The hyoid bone and the 2<sup>nd</sup> to 6<sup>th</sup> cervical vertebrae were involved in 57.69% of homicidal cases while there was no involvement of these structures in suicidal or accidental deaths. Thus involvement of these structures is indicative of a homicidal manner of death. This is shown in table III.

The phenomenon of tailing, the presence or absence of defense wounds and tentative cuts was studied. In addition the presence of sharp weapon injuries on other parts of the body was also elucidated. The association of sexual violence and toxic assault was also studied. The results are shown in table IV. It is evident that tailing and

tentative cuts were present in all suicidal cases, whereas no tentative cuts were present in homicidal cases. Tailing was however, noticed in 42% of homicidal cases. Injuries on the other parts of the body, sexual and toxic violence were only associated with homicidal deaths.

**Table 4:** Associated Injuries in Deaths Due to Cut Throat

	Homicide (n = 78)	Suicide (n = 4)	Accidental (n = 3)
Tailing	33	4	0
Defense	21	0	0
Tentative cuts	0	4	0
Head & Face	30	0	0
Chest	33	0	0
Abdomen	23	0	0
Upper limb	26	0	0
Lower limb	0	0	0
Sexual assault	14	0	0
Toxicology	4	0	0

In all cases in our study the mode of death was syncope due to cutting of neck vessels leading to extensive hemorrhage, shock and deaths.

## DISCUSSION

Deaths due to cut throat injuries were most common in 3<sup>rd</sup> and 4<sup>th</sup> decade of life with a male preponderance. This is consistent with other studies in other parts of the world<sup>9,10,17</sup> and in Pakistan<sup>18</sup>

In our study 91% (91.76) cases were homicidal in nature. A study in Bangladesh<sup>17</sup> has reported 42% incidence of homicide in deaths due to sharp weapons. [our study revealed 4.70 %cases of suicide while Malik SA(18) quoted 8%.our finding is inconsistent with Modi<sup>11</sup> who observed that in

India suicidal cut throat cases were rare while it was reported to be suicidal in majority of cases by<sup>2,13,14,15</sup>

The injuries in cases of homicide and accidental deaths were mostly at the level or below the level of thyroid cartilage. In case of suicidal deaths the injuries were above the thyroid cartilage in 75% of the cases. This is consistent with the generally accepted literature and has also been mentioned by Malik SA<sup>18</sup>.

The deeper structure of the neck i.e. cervical vertebrae was involved only in homicidal deaths (57.69%). C3 to C5 were the vertebrae primarily involved. This has also been reported previously by Malik SA<sup>18</sup>.

All cases of suicidal deaths exhibited tentative cuts and tailing opposite to the working hand. These two phenomenons can therefore be used as a parameter for determining the suicidal manner. Other studies have reported hesitation cuts in 50-74% of the cases in suicidal deaths<sup>19,20,21</sup>.

Homicidal deaths were accompanied by injuries on other parts of the body like the chest, face, abdomen and upper limbs. These findings are consistent with Bhullar. DS<sup>22</sup> Such injuries were absent in cases of suicide or accidental deaths. These associated injuries can therefore be used as a diagnostic criterion to rule out suicide and to confirm the homicidal manner of death.

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