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A Study of Sharp Weapon Injuries in Ranchi: An Autopsy Based Study.

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Abstract

Introduction: Medically injury means "breach of continuity of any tissue of the body", which could be possible as a result of impact of hard and blunt substances as well as sharp cutting weapons. Sharp weapons are one of the most violent and abhorrent means of deaths. This study assesses to document the prevalence of most frequently injured part of the body by sharp weapon deaths in Ranchi.

Methods: This was an autopsies based study conducted in the Department of Forensic Medicine and Toxicology at Rajendra Institute of Medical Sciences (RIMS), Ranchi for a period of 1 year from 1st July 2012 to 30th June 2013. The variables considered were gender, age, injury pattern, cause of death etc.

Results: This study reports that the frequency of death due to sharp weapons in Ranchi is similar to some other studies conducted in different states of India. Our study reported that out of 2540 medico-legal death, 120 (4.72%) death were due to sharp weapons, including 91 (75.83%) males and 29 (24.17%) females.

Conclusion: The study showed that injuries by sharp weapon trauma were common with age group 20-39 years with male dominance. In majority of the cases, cause of death was injury to vital organs. The onset of fatalities will be reduced by proper law enforcing agencies to apprehend the culprits for appropriate punishments according to the law.

Keywords: Autopsy, homicide, sharp weapon and death.

Introduction

Injuries caused by sharp or pointed weapons are common. The most common tool used is knife, dagger, ice picks, hatches, chopper and broken glass etc. An opinion on the following points: the type of injuries; the number and anatomical distribution of injuries; the shape, size, length, and depth of injuries; the object (weapon) used; the amount of force needed to inflict the injuries; the extent of internal injuries; the cause of death [1]. Fatal stabs wound are usually located in the precordial or cervical region. Dangerous weapon is any instrument used for shooting, stabbing or cutting, or any instrument which, if used as a weapon of offence is likely to cause death [2].

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It has been observed that these weapons are used in robberies, street-crimes, and snatching. Homicides are of great concern all over the world as they affect life and safety of the people. The frequency and the magnitude of such crimes induce a sense of insecurity and fear in the community. Some studies within India have reported that sharp weapons to be the second most important mean of homicidal deaths [3].

The pattern of homicides varies from country to country and is influenced by many factors which include method of killing depending on the availability of weapons as well as cultural influences which include family relationships, religious attitudes, criminal activity, drug culture, alcoholism and social, moral and political factors [3]. This study was conducted with the aim to highlight the weapons examined and their association with fatal injury inflicted on the body in fatal cases of assault [4]. Here external injuries look smaller but majority of them proves fatal due to damage of vital organs and major blood vessels [5, 12]. Survival of victim depends upon the extent of damage and promptness of medical services.

Materials and Methods

The materials for the present study were sharp weapon injuries death brought to the mortuary of Department of Forensic Medicine and Toxicology at Rajendra Institute of Medical Sciences (RIMS), Ranchi for post-mortem examination in a period of 1 year from 1st July 2012 to 30th June 2013.

The variables considered were gender, age, injury pattern, cause of death etc. Badly decomposed or skeletonised bodies were not included in the study. All the information related to medico-legal aspects of the cases was collected from the interrogation of relatives, friends and police officer accompanying the dead body and also from the inquest report. All the data are thus collected, compiled and presented in the table.

Results

In this one year study total number of sharp weapon injuries cases was 120. Injuries by sharp pointed weapons, knives and daggers, are found only in 42 (35%) of the cases. In majority of cases light sharp weapons were commonly used in 55 (45.83%) cases of assault followed by sharp pointed weapons 39 (32.5%) cases, combined of all 12 (10%) and heavy sharp weapons in 11 (9.16%)cases [Table-1]. Our study showed that motive of death involved, 51 (42.5%) cases quarrel over landed property, followed by family feud 32 (26.66%) in which 3 (2.5%) cases were suicidal, dacoity 25 (20.9), 9 (7.5%) cases motive could not be ascertained and no. of accident cases 3 (2.5%) [Table-2]. It was observed from this study that involvement of different body parts; neck 46 (38.33%), abdomen 30 (25%), chest 21 (17.5%), multiple injuries 12 (10%) and head 11 (9.16%) [Table-3]. Majority cause of death in fatal victims was shock and hemorrhage 72 (60%) followed by injuries to vital organs 35 (29.16%), septicemia 7 (5.83%) and coma 6 (5%) [Table-4]. Whether defense wound is seen or not [Table-5].

Table- 1: Showing involvement of types of sharpweapon.

Types of weapon	No. of cases	Percentage
Light sharp	55	45.9
Sharp pointed	42	35
Combined to all	12	10
Heavy sharp	11	9.16
Total	120	100

Table- 2: Showing motive of involvement of sharp

weapon.

Motive	Homicide	Suicide	Accident	Grand	Percentage
behind the				total	
cause					
Quarrel over	51			51	42.5
landed					
property					
Family feud	29	3		32	26.7
Dacoity and	25			25	20.9
robbery					
Motive could	9			9	7.5
not be					
ascertain					
Accident			3	3	2.5
Total	114	3	3 (2.5%)	120	100
	(95%)	(2.5%)			

Table- 3: Showing involvement of different body parts.

Body parts	No. of	Percentage
	cases	
Neck	46	38.33
Abdomen	30	25
Chest	21	17.6
Multiple injuries	12	10
Head	11	9.16
Total	120	100

Table-4: Showing cause of death in fatal victims of sharp weapon injuries.

Cause of death	No. of cases	Percentage
Shock and	72	60
haemorrhage		
Injury to vital	35	29.16
organs		
Septicemia	7	5.93
Coma	6	5
Total	120	100

Table- 5: Shows defense wound.

Defense wound	No. of cases	Percentage
Seen	92	76.76
Not seen	28	23.33
Total	120	

Discussion

Total number of 2540 medico-legal autopsies conducted during the study period from 1st July 2012 to 30th June 2013. Out of which 120 were sharp weapon deaths. These are mainly caused by sharp pointed objects such as knife, dagger, nails, spear, arrow, screwdriver etc. Besides these swords, scissors, chisels, razors etc. Our study findings were similar to observations by Shivakumar BC et al, Vij A et al, Mohanty S et al, Hugar BS et al, that sharp weapons were commonly used followed by blunt weapons in fatal assault injuries (45.9%) [6,7,8,9]. In total 120 cases of fatal assault, single weapon was commonly used in (35%) cases which are similar to study by Subba SH et al [10]. Among sharp weapons, light sharp weapons were commonly used. On the other hand, blunts weapons were commonly used than sharp weapons in studies conducted by Oberoi SS et al [11]. This observation could be due to variation in availability of weapons, motive and circumstances of assault. Sharp weapons (90%) were commonly used in assault cases followed by blunt weapons (9.16%). Out of 120 weapons examined, knife (41%) were most commonly used weapon by assailants in infliction of injuries followed by choppers (28%) whereas wooden sticks were commonly used in study by Subba SH et al. [10].

This observation is consistent with common use of choppers followed by knife by assailants to inflict injury. Overall face, neck and head (47.49%) was most commonly injured followed by abdomen (25%) and

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front of chest (17.6%). When blunt weapon was used; face (20.93%) was commonly targeted. When Sharp weapon was used, front of chest was targeted. Among sharp weapons, when light cutting weapon was used, front of chest was commonly injured but when heavy cutting weapon was used, head was commonly injured. This could be due to number of factors e.g. type of weapon used, position of victim as well as assailant, target site on the body, number blows, defense by victim etc.

Different perpetrators may execute multiple injuries on different body parts; in such cases it is prime responsibility of forensic pathologist to determine the fatal or non-fatal component of the injury. In current study, most common abdominal solid organs injured were liver (30.17%), spleen (17.24%), kidney (6.5%) and others organs like diaphragm, oesophagus (13.36%) [12]. Such findings are useful in the court of law while deciding punishment or penalty for various offenders in particular case of homicidal death [13].

If a blow is struck with a weapon having a projecting object, a much more severe wound is caused as all of the force will be delivered to the end of the projection. A victim on the ground, being attacked by a standing assailant, may have defensive wounds to the legs. In cases of suicide, typical defensive-type wounds to the hands and arms do not occur. In this study, the commonest cause of death was shock and hemorrhage (35.89%) followed by injury to the vital organs (27.06%), injury to brain (19.11%) and intracranial hemorrhage (17.94%) [12, 15]. This study is similar to the observations mentioned in standard text books. [2, 13, 14]

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Conclusion

Single weapon was commonly used in fatal cases of assault. Sharp heavy weapons like choppers were

commonly used in assault cases which prove fatal due to hemorrhage and shock involving the vital organs. Defensive wounds to the hands and arms are common. Most stabbing deaths are homicidal and the wounds are usually multiple some time suggestive of sadistic behavior. The onset of fatalities will be reduced by proper law enforcing agencies to apprehend the culprits for appropriate punishments according to the law.

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