

Case Report: Injury over Neck - ? Cut Throat / Bullhorn

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ABSTRACT:

At times autopsy surgeon may be in dilemma while giving opinion regarding probable weapon / causative agent after examining the injury. Then it becomes difficult for him to make a comment on manner of injury- whether suicidal / homicidal / accidental. Situation becomes worse when wound is handled by surgeon before examination by a forensic expert. Here, a case of injury over neck is discussed. A dead body of male aged 65 year was brought for autopsy with alleged history of injury over neck by Bull-horn. Patient was treated and was hospitalized for 31 days in private hospital, developed septicemia and died. After completion of autopsy there was doubt in mind about the causative agent and manner of death - whether suicidal, homicidal or accidental?

Our aim is to highlight the importance of correlation of autopsy findings with ante-mortem record, circumstantial evidence, alertness and foresight.

KEY WORDS: – Injury over neck, bullhorn, cut throat, manner of death. Importance of record keeping.

INTRODUCTION:

Though the Bull is a domestic animal but at times may behave in dangerous way producing injury to human beings, whatever may be the reasons, and such injury may prove fatal. Bull horn injuries are rare in urban area while such injuries are comparatively common in rural areas¹. They are different in many ways from other injuries such as blunt trauma, stab injuries, road traffic accidents, etc.

Bull horn injuries have been classified in four grades as: Grade I- contusions only, Grade II- lacerations or bony injury, Grade III- visceral and/or serious cavity injury and Grade IV- death².

They are very unique due to typical characters of bull horn and mechanism involved. The bull horn is long, hard, curved with smooth tapered ends. Depth of wound depends on the force of the penetrating of horn into the body and that depends on weight and speed of the animal. There is an additional force because of the effect of the bull's strong neck muscles when it raises its horn. This force causes upward tears at right angles to the ground. They are prone to infection as they are commonly contaminated with cow dung. Fatality depends on the site of body region involved. Because of the bull's horn size and structure, 25% of all bull horn injuries are fatal³. The injuries caused by horn of bulls, cows or buffaloes are of various shapes, size and directions and are goring in nature and violent⁴. They may be in the form of contusions, lacerations, fractures, and penetrating injuries involving body cavities. They are commonly seen on abdomen and perineal region. Predominantly seen on right side of abdomen^{5,6}.

Here a case of injury over the neck is discussed. There were no other injuries on body. As patient was hospitalized and treated for 31 days, the wound over neck was already surgically manipulated. Now question was - 1. How the deceased sustained injury over neck? 2. What was the probable weapon or kind of weapon? 3. What was the Manner of injury?

The basic aim to report this case is to highlight the importance of correlation of autopsy findings with examination of ante-mortem record, circumstantial evidence, alertness & foresight and to highlight importance of record keeping in medical field i.e. documentation.

CASE REPORT:

A dead body of 65 year old male was brought for autopsy by police with alleged history of injury over neck by Bullhorn. The deceased was hospitalized and was under treatment for 31 days, died due to septicemia in private hospital. Person was poorly built and nourished. On examination at the time of autopsy a irregular, vertical, non infected wound of size 07 x 3.5 cm. x cavity deep was noted on anterior side of neck (Photo No.1). Trachea was open exposing posterior wall. Margins of wound were irregular with evidence of necrotic tissue, no evidence of pus discharge. There was evidence of 07 cm. vertical surgical sutured wound on epigastric region in midline with six stitches with an opening at lower end of surgical wound. Wound was healthy without gaping (Photo No.2,3). There were no other injuries on body. On neck dissection, all neck structures were intact and normal. On internal examination all other organs in body were intact and were showing mild congestion. Lungs were oedematous and congested. Meninges were intact, congested with mild cerebral oedema.

After completion of autopsy some questions strike to our mind that- 1. How the deceased sustained injury over neck? 2. What was the probable weapon? 3. What was the manner of injury-suicidal, homicidal or accidental?

To find out these queries, hospital record of deceased was called for further study. After going through hospital papers, it was noted that the deceased sustained injury over neck, alleged bull-horn injury in late night at 11.30 PM and was admitted early morning at 4.30 AM. There was transverse incised looking lacerated open wound of size 8x4cm, tracheal deep present on anterior side of neck. There was splitting of thyroid lamella and thyroid membrane with vertical fracture of tracheal rings. Patient was unconscious and having difficulty in breathing. Other parameters were within normal limits. Emergency tracheostomy through the same wound was performed. There was evidence of distortion of Vocal cords and vertical fracture of tracheal rings. Fractured cartilage segments were replaced back and were sutured together. There was no injury to major blood vessels. Tracheostomy tube was kept. CT neck showed comminuted fracture of thyroid lamina bilaterally with depressed fracture segments with gross soft tissue oedema with severe narrowing of glottis and infra glottis space and surgical emphysema. Patient gained consciousness; all parameters were within normal limits. Flexible Bronchoscopy and Laryngoscopy done on third day which showed depressed anterior commissure and vocal cord oedema. Tracheostomy tube was replaced by flexometric tube with nesotracheal intubation on forth day. As wound gaping was noticed with open laryngopharynx with necrotic changes, it was again re-sutured. He was also operated for gastrostomy. Deceased was receiving feeding through Ryles tube during hospitalized period and was under broad spectrum antibiotic cover and received Fresh Frozen Plasma transfusions SOS. He developed septicemia and died after 31 day's survival. No dying declaration was recorded till death.

The ante-mortem photograph of injury was (Photo No. 4) showing, the transverse incised looking lacerated open wound of size 8x4 cm, tracheal deep on anterior side of neck. Margins of wound were red with skin tags along the margins. History from close relatives was taken. As per the history from son and relatives, deceased was staying in cottage in their farm with his wife and in the night, he sustained the said injury while feeding their cattle's.



Photo No.01: Injury over neck-External and Internal (at time of autopsy)



Photo No.02, 03: Gastrostomy Operation-External, Internal (at time of autopsy)



Photo No. 04: Injury over neck (at the time of admission)

DISCUSSION:

An injury over neck has a special importance of its own, because of the situation and circumstances relating to it. The distinction of importance is usually between suicidal or homicidal, as cut throat injury is rarely accidental⁷.

The Bull, OX and cow are domesticated animals that are normally docile. Rarely, the animal may become aggressive and attack man either to defend itself or it's younger to ward off intruders. Injuries may be sustained from the horns of these animals either accidentally or as the result of an attack⁸. Such possibility is more from stray cattle.

Deaths due to bull horn injuries are rare as compared to other trauma cases. They are comparatively common in rural areas. Swarnkar Manish et.al.¹ in his epidemiological study of pattern of trauma in central India noted only 1.37% cases due to bull horn injuries. Upper airway injury with blunt and penetrating trauma is rare but life threatening and 78% of patients die before reaching to hospital⁹. Mortality among admitted patients was found to be 21%¹⁰.

In this case as deceased was under treatment for 31 days and wound was surgically intervened, so no definite opinion regarding wound was concluded after autopsy. As per hospital records and photographs, there were no other injuries over body except injury over anterior aspect of neck. It was present in the middle of neck, transverse, 8 cm. long with splitting of thyroid lamella and thyrohyoid membrane. Margins of wound were relatively clean without any contusions.

Such findings are usually present in cut throat injuries^{8,12,13}. Both carotids were spared which is again commonly seen in suicidal cut throat. These findings in present case were suggestive of cut throat injury. But after going through hospital records and CT scan findings it was noted that there was comminuted fracture of thyroid lamina bilaterally with depressed fracture segments, vertical fracture of tracheal rings with distortion of Vocal cords, gross soft tissue oedema with severe narrowing of glottis and infra glottis space and surgical emphysema. There were no hesitation cuts, struggle marks or defense wounds. These findings were not in favor of suicidal or homicidal cut throat injury. They were in favor of hard and blunt impact, but the wound was transverse with relatively sharp margins to which we can label as cut/incised looking laceration. So most likely it might be a hard and blunt and probably pointed impact. Incised looking lacerations are caused by not-so-sharp end/edge of weapon^{13,14,15}. It can very well occur due to bullhorn as it is hard and having tip. Bull horn injury over neck is very rare as neck is not at the eye level of bull and out of reach of its horn. They occur more commonly on the abdomen and perineum as head of bull is at the same level^{2,3,4,5,6,8}. Martinez-Ramos D. et al.¹¹ noticed only 3.1% bull horn injuries over head and neck region. Wasadikar P. P. et al.⁵ recorded 2% cases over neck region. In this case dying declaration was not recorded till death. We are well aware that if injury is below the level of vocal cords and involves trachea, no speech will be possible¹⁶. However Dying declaration can be recorded in the form of questions put to person and answer recorded in yes or no in the form of gesture or means.

Although bull horn wounds are incisive and contusive, they have special characters: 1. the entry opening is usually small and surrounded by an erosion zone. It may not correlate with the gap in the aponeurosis. 2. One or more in-depth may be present, usually with important muscular destruction. 3. These wounds are contaminated and multiple foreign bodies may be found at the bottom of the wound tract, including cloth fragments, dirt and horn chips¹⁷.

In the field of forensic science, reconstruction of crime incidence carries immense importance. If we try to reconstruct the incidence in this case keeping all above things in mind, then possibly deceased might be in bending position in front of the bull with his face upwards as both carotids not injured due to hyper extension of neck. Most probably he might have sustained that injury by the tip of bull horn accidentally, and not due to an attack by animal as injury was not so deep and was the only injury on body. We must also consider anatomy of neck and trachea while reconstruction of incidence. It was transverse injury and might be due to side to side jerk of bull horn. This was the only explanation about injury in this case.

Thus, after thoroughly studying the autopsy findings, antemortem photographs, hospital records, history from police and relatives, and circumstantial evidence we ruled out possibility of cut-throat injury. The clear, precise documentation with photographs of injury before surgical intervention, thorough examination and meticulous study of a case by application of knowledge of Forensic Medicine helped to arrive at conclusion.

CONCLUSION:

Cause of death - **Septicemia** due to injury over neck.

Type of injury over neck is **incised looking laceration**.

Probable weapon as most probably is **bull-horn injury**.

Natural of injury is **Un-natural**.

Manner - **Accidental**

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