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PENETRATING CHEST TRAUMA BY BISON GORE AND ITS SURGICAL MANAGEMENT

General Surgery

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ABSTRACT

Bull horn injuries are commonly seen in rural clinical practices . (1)
Bull fighting is very popular sport in Spain. It is also common in Southern India (Jallikattu) in Tamil Nadu.(1) Cases of injuries by wild animals are less reported but the number of cases is increasing with increased deforestation in recent times(9) here we present a case of penetrating chest trauma by bison horn (wild animal) (3)

KEYWORDS

INTRODUCTION –
The wild bison is a medium to large-sized animal with large head/front end.

An adult bison can measure anywhere from 90-200 cm (6-7 ft) in length and around 800-1300 kg in weight. It can sprint at over 56 km/hr generating a considerable force to inflict injury. The horns are sharply rounded and 20-25 cm long. Bison horns have a bony core with hard outer epidermal sheath(3)

BACKGROUND-
bull horn injuries are seen commonly in rural clinical practice (1). but injuries by wild animals are less commonly seen the range of injuries varies from affected areas involving neck, chest, abdomen, groin and perinium. they differ from usual injuries seen in emergency here we present a case of penetrating chest trauma by bison horn (wild animal).

CASE REPORT: -
our case is of a 55-year female, an employee at Radhanagari forest dist. Kolhapur was attacked from behind by a bison when she was working. she was gored and tossed in the air three times by the bison. she landed on her back with avulsion of left side of chest wall anteriorly with extension to the back, exit wound at the infraclavicular region with laceration at the submandibular region and right arm, with fracture of left forearm bones and scapula.

Evaluation at emergency room- HR-140/min, B.P.-90/60mmhg, pallor+++.

R.S.- air entry reduced on left side

CVS- s1 s2+

P/A-soft, non-tender

CNS- she was drowsy, responding to verbal stimuli, pupil's B/L equal reacting to light.

She was shifted to operation room directly, anesthesia induced and intubated. right lateral position given.

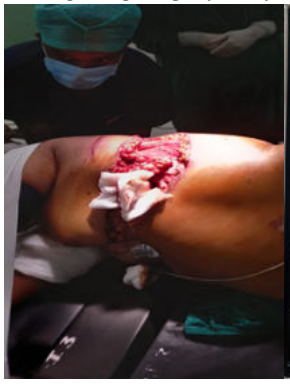
Under all aseptic precautions, chest wound was explored.

Local examination- Avulsion flap lacerated left chest wall anterior up to spine of about 40x12cm irregular in shape, pectoralis major muscle fibers were cut with rents in it. left breast tissue was separated from chest wall along with anterior and lateral chest wall muscles with shattered left rib cage with multiple ribs fracture involving 4th to 7th ribs and exposed left lung lobes and pericardium. exit wound in infraclavicular region.

Emergency exploration done with removal of foreign bodies like grass and debris. Irrigation done with lukewarm water. debridement of devitalized tissue done. intercostal muscles mobilized from the en mass content of avulsed tissues. chest closed with approximation of intercostal muscles over intercostal drain. pectoralis major approximated over the intercostal muscles. breast tissue fixed to the chest wall. wound closed in layers with crd in subcutaneous plane. skin closed with ethilon no.2-0. Exit wound at infraclavicular and submandibular region and right forearm wound closed. dressing done. From operating room, she was extubated without any complications and shifted to the surgical ICU. Post operatively she was complaining of pain along the vertebral column and all over back.

She was investigated further after stabilization to rule out blunt abdominal or retroperitoneal trauma and spinal injury.

Her forearm bone fracture was treated with closed reduction and scapular fracture with conservative management. ICD removed on post-op day 3, followed by vacuum dressing for 7 days i/v/o discharge from crd site indicating superficial surgical site infection. Also, for the same escalation in her antibiotic regimen was done. She was discharged on post op day 16th by which time her SSI recovered.



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DISCUSSION –

The bison is a medium- large size 800-1300 kg and can create a minimum of 55 km/hr velocity and its repeated nature of attack which can cause multiple penetrating and blunt injuries. (4)

When a bison or other horned animal charges, the head is held low with the horns leading. The horns are, thus, at the level of an adult victim's thighs, perineum, or lower abdomen. At the moment of goring impact, the animal extends its head, with the horn tracing an upward arc, and tosses the victim into the air . The deep penetrating large puncture or avulsion injuries from bison gorings , we report are similar to those described in studies from India , describing gorings by homed animals such as bulls (5)

In our case probably due to un prepared victim, the injury sustained was of severely of high intensity which included extensive injury to left anterior chest wall, muscles, ribcage, and exposed lung and pericardial sac, without injury to any vital organs

In our experience, as well as others, chest trauma from bison or bull goring is less common than is trauma lower on the body . In a case study of 56 patients of Bison injury, only 2 had goring injuries involving the chest(6). Chest trauma from goring by Mrican buffalo in Uganda has been reported by Shattock (.10)

In comparison with previous case reports, most of the trauma by wild bison are blunt and penetrating trauma , most common site afflicted are the abdomen and the perineum , chest wounds caused by horn goring are closed chest injuries , but in our case , it is penetrating chest injury with open wound with vital structures like lungs and pericardium involved.

Goring injuries by horn injuries produce a wide variety of complex wounds. Because of the unique characteristics, the wounds caused by bull horn are infected in most of the cases because of foreign particles like dirt/sand. SSI are most common after bull horn injuries.

Post operatively infected wound is treated by higher antibiotics and vacuum dressing and post SSI was treated by sterile dressing. (9)

The apparently lower rate of infection from bison goring than from other types of wild animal attacks may be attributed to absence of bite wounds. Injuries from bears, cougar or allegators often involve contamination of wound by oral flora. (7,8)

Interestingly a recent study of impalement injuries describes contamination with multiple soil pathogens, including bacillus species and fungi which can be covered with broad spectrum antibiotics.

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CONCLUSION –

From Knowledge gained from this case report and review of literature suggest that injury by animals need to manage extensively and aggressively.

Goring injuries present with a wide variety of complex wounds. Because of their unique characteristics, they deserve a special mention especially in the post -op management.

Even though bull horn injuries are severe, but mortality, but mortality is very minimal.

In this case, there is also hight suspicion of abdominal blunt injuries to abdomen / chest/spine. This was ruled out by MRI spine /HRCT chest / CECT abdomen. Post op ssi had to be taken care of

Patient Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request

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Ethical Consent
Ethical approval has been exempted by our institution.

AUTHOR CONTRIBUTION
Case report concept and design was contributed by Dr. Sheetal A Murchite . Case report analysis was done by Dr. Rekha Khyalappa.

Data collection and case report writing was done by- Dr. Sheetal Patil , Dr. Kasi Vishwanath.

Conflict Of Interest
NONE

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