

Research Article

Bull Gore injury- Its impact and surgical management

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Abstract

Bull gore injuries are among the commonest accidents in rural India, where people make their living rearing the livestock. The injuries thus sustained include the direct penetrating injuries caused by horns of the animal and blunt injuries sustained like chest & spine injuries, long bone fractures. A thorough head to toe examination is therefore essential in evaluating such patients. The commonest site of injury in bullgore cases is the abdomen and perineal region. The reason for perineal involvement is its anatomical configuration. Injuries involving the perineal region pose a great challenge in management due to poorly understood anatomy and difficulty in accessing the injury site. Perineal injuries are associated with delayed complications like anovaginal fistula, urethrorectal fistula, loss of sphincter function due to injury to the anal canal. This paper describes the spectrum of five bull gore injury cases involving lower abdomen and perineum that presented to our emergency department and how they were managed efficiently in our hospital.

Keywords: Bullfight, Injuries, Abdominal trauma, Chest trauma, Cattle horn

1. Introduction

The commonest site of injury in bullhorn cases is the abdomen and perineal region. The injuries predominantly occur on right side of abdomen.^{1,2} The reason for perineal involvement is its anatomical configuration leading horn hook to engage and penetrate.³ The injuries caused by horns of bulls, cows or buffaloes are of various shapes, sizes and directions and are goring in nature and violent. The wounds produced are contusions, lacerations, penetration of body cavities and rarely fractures. Mostly subcutaneous tissues and muscles are affected but visceral injuries are also quite frequent. The condition is usually associated with high mortality and morbidity because of multiple injuries sustained. Injuries involving the perineal region pose a great challenge in management⁴. In this case series shows the spectrum of five bull gore injury cases involving lower abdomen and the perineal region and how they were managed.

2. Case Series

2.1 Case No. 1

A 40 yr old man came with the alleged history of bull gore injury while grazing the bull in the field and sustained injury to the perineum and blunt injury to chest. Per rectal examination revealed active bleeding per rectum and loss of external sphincter tone. Patient had a lacerated wound in the left thigh and penetrating injury in the right iliac fossa which revealed no breach in the peritoneum on exploring the wound. Patient developed pneumothorax on the left side with surgical emphysema for which ICD was inserted. Patient had cervical spine tenderness and MRI C-spine revealed C5, C6 spine fractures. Exploratory laparotomy was done and the breach in rectus closed from inside. Solid organ and hollow viscus were normal. Defunctioning colostomy using the sigmoid colon was performed. Anal canal was explored and the lateral wall laceration sutured in lithotomy position. Patient responded well to treatment and after performing a contrast enema study and clinically assessing the external sphincter restoration of continuity of the bowel was done after 3 weeks.

2.2 Case No. 2

A 60 yr old man came with alleged history of bull gore injury to the perineal region. Patient sustained rib fractures and lumbar Vertebral wedge compression as a result of fall. Patient had degloving injury to the scrotal skin with exposure of the left side testis there was no evidence of torsion. He also had a penetrating injury to the Left groin. Regional anesthesia could not be given because of the vertebral bone fracture. Prophylactic ICD was put on the side of rib fractures before intubation. Scrotal wound was debrided and sutured primarily. Exploration of the laceration in the thigh revealed inguinal canal wall involvement. Prolene 1-0 was used to repair the defect.

2.3 Case No. 3

A 56 yr old female came with alleged history of bull gore injury over anterior abdominal wall. Laceration over the left hypochondric region .on examination left hypochondric tenderness present, guarding + bowel sounds normal. Vitals stable CECT abdomen shows grade 2 splenic laceration. local wound exploration done no breach in peritoneum, thorough wash given. Wound was closed in layers. Splenic laceration managed conservatively.

2.4 Case No. 4

A 35 year old male came to emergency department with bull gore injury over the lower abdomen. Laceration over the suprapubic region measuring 6X1X2 cms. on examination suprapubic tenderness + minimal guarding present .local wound exploration done, no breach in peritoneum. Thorough wash and suturing done in layers.

2.5 Case No. 5

A 60 year old female with history of bull gore injury over abdomen .on examination deep laceration over the umbilical region present with bowel loops visible. Patient was taken for emergency exploratory laparotomy. Jejunal serosal tear 5 cms noted and sutured following thorough wash .no other organ injury present. Abdomen closed in layers.

3. Discussion

In India, Bull gore injuries are frequently observed in villages. The horn of bull are long, curved directed forwards with smooth tapering ends that produces lacerations and can also penetrate the body cavities^{1,4}.

Goring is taken when the bull horn penetrates deeply in the muscles as well as body cavities⁴. Goring is also described as a single injury which includes a mix of lacerated wound, contusion and infection by many researchers. Thus, wounds produced due to bull horn impact vary from contusions, lacerations, and penetrating wounds involving internal organs to fractures^{4,5}.

The patterns of injuries vary depending upon the height of the victim, the height of the bull and relative position of the animal at the time of attack. The injuries occur more commonly on the abdomen and perineum.^{1,2,4,6,7} In the abdomen, the horn first tears the subcutaneous tissues and later muscles and further if the violence is more, the peritoneum is punctured⁴. The head of bull is at the same level as victim's abdomen, this part of body is most exposed to the attack¹. Although the surface area of abdomen is same as that of the chest, the abdomen suffers more than any other site. The reason appears to be lack of bony shield over the abdomen permitting the horn hook to engage and penetrate². The frequency of injuries over the abdomen in other studies being 11.3%⁸, 3.7%⁹ and 64%¹. These injuries can be in the form of perforations of abdominal wall, and internally hemorrhages and perforations involving mesentery and bowels^{1,6}. Visceral injuries involving spleen and more frequently liver being situated on right region of body are commonly encountered.

Many times impact by the bull or other cattle involves the thoracic region of body. Atri and Mehdiratta¹⁰ in an analysis of 154 civilian chest injuries reported six cases from bullhorns with three cases of right and left side each constituting about 4%. According to other researchers and the present study chest injuries are in the form of multiple rib fractures^{1,6} and penetrating injuries involving lungs.¹⁰ Involvement of extremities is an uncommon finding in such a impact by bull.

The anatomy of the perineal region is complex and visualization and access to various structures in the region is difficult¹². Hence, the repair of injury in the area needs a complete knowledge about the anatomy of the region and expert surgical skills. Usually these injuries are associated with injury to abdominal and urological structures. In females the anatomy of the perineum is further complicated by the presence of the uterus, vagina and the various supporting ligaments¹¹. Most of the time when an injury is missed or when a patient undergoes primary repair the patients end up coming back to hospital with complications like anovaginal fistula⁴ and urethrorectal fistula³. Thus causing more morbidity to the patient in terms of physical, mental, social and economical sufferings.

4. Conclusion

Management of bull gore injury is a challenge and surgeon needs to assess the injury and take a call on type of management. Also surgical repair of the injury is also difficult because of the complex anatomy and the less accessibility.

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