



E-ISSN: 2616-3470  
P-ISSN: 2616-3462  
© Surgery Science  
www.surgeryscience.com  
2019; 3(3): 269-271  
Received: 09-05-2019  
Accepted: 11-06-2019

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## Cattle horn injuries in rural India: A clinical study regarding pattern of injuries and their management

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DOI: <https://doi.org/10.33545/surgery.2019.v3.i3e.180>

### Abstract

**Background:** Cattle horn injuries are common in rural India, where people make their living rearing the livestock for domestic and farming purposes.

**Methods:** A retrospective study of 40 patients with history of Cattle horn injury admitted to department of general surgery in S.S. Medical College, Rewa which is tertiary care hospital in central India. Study period was November 2016 and October 2018.

**Results:** The vast majority of patients were male (70%), with only 12 women (30%). Male: Female ratio was 2.3:1. Maximum no. of patients belong to age group above 50 years of age. The commonest site of injury was in the abdomen followed by the perineum, back and lower limb. Most common type of injuries were Penetrating injuries followed by Blunt injury. Early surgical intervention was done in 72% of cases.

**Conclusions:** Animals as cow, bull and buffalo are normally a docile and easily domesticated animals in rural parts of India. Injuries caused by these animals can be sometimes life threatening. Awareness in health care professionals about the mechanism of these injuries and a management protocol is necessary to avoid morbidity and mortality.

**Keywords:** Cattle horn injury, clinical study, penetrating injury, laparotomy

### Introduction

Cattle horn injuries are common in rural India, where people make their living rearing the livestock for domestic and farming purposes. These domestic animals can cause serious injuries by their various appendages, especially horns.

Fortunately, the majority of such injuries are minor. However, many injuries remain undocumented and many people die, primarily in third-world countries, before receiving adequate medical care. The effects of animal injury on the victims are many, and include trauma, wound infection, potential exposure to rabies, and psychological problems.

Bullfighting<sup>1</sup> is a very popular sport throughout Spain and in some parts of Latin America. It is also common in Southern India (*Jallikattu* in Tamilnadu). There are only few reports of bull horn injuries in literature. Unfortunately, these injuries are infrequently reported and evidence-based practice is lacking in this area.

The current study was designed to evaluate different patterns of injury with special reference to age sex distribution, operative intervention required.

### Methods

This study was conducted in patients with history of cattle horn injury admitted in Department of General Surgery, Shyam Shah Medical College, Rewa during the period of Nov 2016 to Oct 2018. The objective was to study the pattern of injuries and the various surgical treatments.

### Inclusion criteria

All the patients admitted in surgical ER at Shyam Shah Medical College Rewa with history of cattle horn injury during the study period.

### Exclusion criteria

Unwilling patients, patient who expired before admission were excluded from study.

Patients presenting to Emergency Department with history of cattle horn injury were admitted

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and evaluated, resuscitation done according to their vital status. A detailed history was obtained and clinical examination was done. Patients underwent relevant investigation like Blood investigations, USG, X-ray, CT scan according to clinical parameters and were managed accordingly. Penetrating injuries to abdomen were managed by Exploratory Laparotomy, perineal injuries involving loss of sphincter function were managed with colostomy followed by secondary repair, Lacerated injuries around perineum or other parts of body caused by animals were repaired primarily.

## Result

Total of 40 cases of patients with cattle horn injury who underwent conservative or surgical treatment were included in the study. Age, sex, operative findings, operative procedure performed were studied.

**Table 1:** Sex Distribution of patients under study

Gender	No. of patients	Percentage
Male	28	70
Female	12	30

As it is evident from above table that more number of male population presented with history of cattle horn injury.

**Table 2:** Age wise incidence of patients

Age Group	No. of Patients	Percentage
0-10	2	5
11-30	6	15
31-50	12	30
>50	20	50

It is evident that maximum no. of patients belong to age group above 50 years of age.

**Table 3:** Distribution of cases according to site of injury

Site	No. of Patients	Percentage
Face	2	5
Abdomen	24	60
Chest	3	7.5
Limbs	4	10
Back	2	5
Perineum	5	12.5

Most common site of injury is abdomen followed by perineum.

**Table 4:** Distribution of cases according to Type of injury

Type of Injury	No. of Patients	Percentage
Abrasions	6	15
Blunt injury	12	30
Penetrating injury	14	35
Laceration	8	20

Most common type of injuries were Penetrating injuries followed by Blunt injury.

**Table 5:** Distribution of cases according to their Management

Management	No. of Patients	Percentage
Primary Repair	11	27.5
Chest Drain	2	5
Laparotomy	16	40
Colostomy with secondary repair of tear	2	5
Conservative	9	22.5

Early surgical intervention in the form of Exploratory laparotomy and primary repair of laceration was done in maximum no. of cases

## Discussion

Cattle horn injuries have not been regularly documented in the literature. The mechanism of injury allows understanding of the complex wound patterns seen due to interaction of multiple distinct forces and the fact that the horn of the attacking animal follows a semicircular path sideways or upwards<sup>[2,3]</sup>. Cattle may sometimes endanger the life of passers-by. The commonest site of injury in bull or cow horn cases is the abdomen and perineal region. 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 encountered<sup>[4]</sup>. The maximum numbers of injuries are sustained in villagers while rearing the cows and bulls, during feeding, while tying them or milking the cows or buffaloes.

Bull horn injury is not uncommon, and during the study period, 40 patients presented with history of injury by cattle horn. The patients age ranged from two years to 90 years and the male to female ratio was 2.3:1. Sixty percent of the injuries occurred either to the abdomen and wounds were directed obliquely upward. Thirty five percent patients had penetrating injuries while thirty percent had blunt injuries. The abdomen suffers more commonly injury with more severity than any other site. This appears due to lack of bony shield over the abdomen permitting the horn to hook to engage and penetrate<sup>[5]</sup>. These injuries can be in the form of perforations of abdominal wall, and internal hemorrhages and perforations involving bowel and mesenteric tear<sup>[2,6]</sup>. Five percent cases had perineal injuries involving loss of sphincter function were managed with colostomy followed by secondary repair, chest injuries are in the form of multiple rib fractures and penetrating injuries involving lungs. Hemo-pneumothorax is a common accompaniment. Forty-five per cent patients required extensive surgical intervention in form of Exploratory Laparotomy and primary closure of lacerations.

## Conclusion

In India, cattle horn injuries are frequently observed in villages. Animals as cow, bull and buffalo are normally a docile and easily domesticated animals, may sometimes become angry for no obvious reason. Injuries caused by these animals can be sometimes life threatening. Awareness in health care professionals about the mechanism of these injuries and a management protocol is necessary to avoid morbidity and mortality.

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