

Surgical Management of Evisceration due to Horn Gore Injury in a Buffalo calf

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Abstract

A buffalo calf was presented with complaint of protrusion of abdominal viscera from left ventrolateral abdomen resulted after horn gore injury. The area around the injury was debrided and protruded abdominal mass was flushed properly. After stabilizing the animal, the protruded mass was replaced into abdominal cavity and abdominal wound was closed in routine manner. The buffalo calf had an uneventful recovery.

Keywords: Buffalo; evisceration; gore injury; omentum

Introduction

Horn gore injuries are commonly seen in rural India. Horn of bull are long, curved directed forwards with smooth tapering ends that produces lacerations and can also penetrate the body cavities (Rau, 1982). The injuries caused by horns are of various shapes, sizes and directions and are goring and violent in nature. Goring occurs when the horn penetrates deeply into the muscles as well as body cavities. The wounds produced are contusions, lacerations, penetration of body cavities and rarely fractures (Senthilkumar *et al.*, 2014). Such injuries sometimes might lead to evisceration. Evisceration is defined as protrusion of contents of abdominal cavity through a defect in body wall exposing viscera to the environment (Cigdem *et al.*, 2006). Immediate surgical intervention is crucial in such cases regardless of the cause, exposure and contamination of the abdominal viscera. The present case report describes the surgical management of evisceration due to horn gore injury in a buffalo calf.

History and Clinical Observations

An eight months old male buffalo calf was presented with history of traumatic injury acquired due to horn goring on the left abdomen the previous day (Fig. 1). A hanging protruded mass was seen on the left ventrolateral abdominal wall from detached abdominal muscle and skin. Closer examination revealed perforation of eviscerated mass from where ruminal content was leaking out. The eviscerated mass was contaminated

due to prolonged exposure to external environment (Fig. 2). The animal was depressed, with temperature of 102° F and slightly pale mucus membrane. The case was diagnosed as evisceration of omentum and rumen due to horn gore injury. Immediate stabilization with fluid electrolyte and emergency surgical intervention was planned.

Treatment

The injured area was prepared aseptically. The animal was restrained in right lateral recumbency and surgical intervention was carried out under local infiltration anesthesia using 2 percent Lignocaine hydrochloride solution. The injured area was cleaned with normal saline solution and mild Potassium permanganate (KMnO₄) solution to exert microbicidal effect and all devitalized tissues were debrided. The wound edges were extended to allow easy reduction of the eviscerated mass. The perforation in the rumen was closed with inversion suture pattern using catgut No.1. The eviscerated mass was examined thoroughly for any other perforation, contamination and viability before replacing into the abdominal cavity. 200 ml of Metronidazole solution was administered into the abdominal cavity to check further contamination and as a prophylactic measure to control peritonitis. The torn layers of abdominal muscle were sutured separately. The inner muscle layer was sutured using Vicryl (Polyglactin- 910) No. 1 suture material in simple interrupted pattern anchoring the last rib to provide strength and support to the muscle layer. The outer muscle layer was sutured in continuous

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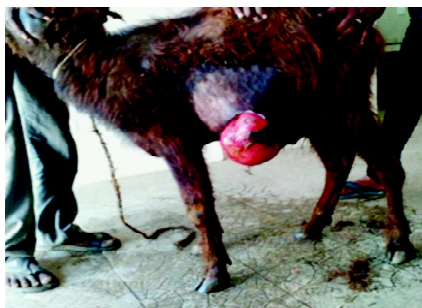


Fig.1: Protruding eviscerated mass from injury site

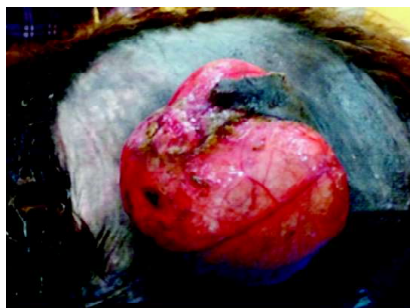


Fig. 2: Contaminated and perforated viscera



Fig. 3: Surgical site after reduction of eviscerated mass and closure of defect by interrupted cross mattress sutures

lock stitch pattern using catgut No. 2. The skin edges were closed using silk in cross mattress suture pattern. Post-operative management included daily antiseptic dressing of surgical wound using Povidone iodine for 10-15 days, antibiotic Streptopencillin at 10 mg/ kg intramuscular injection once daily for 5 days and anti-inflammatory drug Meloxicam^a at 0.2 mg/ kg intramuscular injection once daily for three days. The owner was strictly advised to provide small quantity of feed including milk replacer, coarse fodder and straw at frequent intervals to prevent suture dehiscence. Skin sutures were removed on 12th post-operative day and the animal showed uneventful recovery.

Discussion

Horn gore injuries produce wounds of different size and depth, sometimes injuries might be penetrating further leading to evisceration. Horn gore injuries leading to evisceration pose a serious threat to life,

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as the exposed organ might quickly get contaminated and infected resulting in shock and death. Prognosis of such cases depends on severity of injury, location, organ exposed, bleeding, contamination, stabilization, strangulation, antibiotics therapy and early surgical intervention. In humans, horn injuries caused lacerated and penetrating wounds (Senthilkumar *et al.*, 2014) and evisceration of small intestine (Borse, 2018). Kumar *et al.* (2018) have reported intestinal evisceration due to horn gore injury in a doe and stated that the horn first tears subcutaneous tissues and later muscles and further punctured the peritoneum if violence is more. In the present case, rumen got punctured after tearing the skin, subcutaneous tissue and muscles due to horn goring, which will affect the health, longevity and productivity of the animal if immediate attention not given. Eviscerated mass covered by omentum, decreased the possible complication that might have occurred generally during delayed presentation (Kumar *et al.*, 2017). Similarly, no serious complications have been noticed in the present case as the eviscerated mass was protected by omentum. Maheshwari *et al.* (2015) opined antibiotic therapy, wound cleansing with saline and antiseptic solution with proper debridement in horn gore injuries. In the present case, proper wound cleaning with copious saline solution and diluted potassium permanganate solution was done to remove all foreign contaminants while exerting microbicidal effect on the wound. Potassium permanganate solution being a strong oxidizing agent eliminates anaerobic micro-environment and accelerates wound healing process (Delgado-Enciso *et al.*, 2018). Kumar *et al.* (2017) have reported the use of Ciprofloxacin and Metronidazole into abdominal cavity to prevent development of peritonitis similarly, no peritonitis was

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observed in the present case. The most frequent complication in bull gore injury is infection of the site (Maheshwari *et al.*, 2015) which has been controlled successfully with antiseptic dressing and antibiotic therapy in the present case. Other probable post-operative complications such as incisional hernia due to weakening of abdominal muscles at surgically repaired site was prevented by anchoring abdominal muscles to the last rib while suturing. Absence of any gastrointestinal upset might be due to the feeding schedule advised. The case was presented within a day of occurrence, thus proper surgical intervention and slight modification of the feeding practice during post-operative care resulted in early return to normal gastrointestinal health which aided in the uneventful recovery. So, present case report concludes that conditions with history of horn gore injury and evisceration of abdominal organs require immediate attention, timely surgical intervention and appropriate post-operative care to avoid any further complication.

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Received on: 28.09.2020
Accepted on: 05.01.2021

Andhra Pradesh CM flags off 175 Veterinary Ambulances

Andhra Pradesh Chief Minister, Shri Y. S. Jagan Mohan Reddy on 19th May, 2022 flagged off 175 Veterinary ambulances costing 143 crore INR in the first phase under the Dr Y.S.R. Mobile Veterinary Ambulatory Clinical Services. Andhra Pradesh plans to have a total of 340 Veterinary ambulances across the state at a cost of 278 crore INR in two phases.