

Surgical management of weird horn recurrent growth and self-inflicted laceration in muturu cow, *Bos taurus brachyceros*: A case report

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ABSTRACT

Successful surgical management of a recurrent self-inflicted facial laceration caused by abnormal horn regrowth in a 6-years-old Muturu cow (*Bos taurus brachyceros*) presented with a circular right facial wound infested grossly with house fly larvae and microscopically with bacteria (*Staphylococcus aureus*). The resultant friction between the malformed tip of the horn and facial muscles induced the laceration. Physical examination revealed lacerations involving the Masseter, Zygomaticus, Buccinator, Orbicularis oculi and Levator labii superioris muscles. Surgical intervention included regional anaesthesia using 2% lignocaine with adrenaline, horn trimming, wound debridement, lavage with tincture of iodine and oxytetracycline spray and post-operative dressing. Supportive therapy comprised systemic antibiotics, anti-inflammatory drugs and multivitamins. The wound showed complete healing within nine days. The case underscores the importance of early detection, regular horn trimming and proper management of malformed horns to prevent self-inflicted injuries and secondary complications in cattle.

Keywords: Muturu, Horn, Laceration, Surgery, Cattle

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Introduction

The Nigeria's cattle population is approximately 20.9 million heads in 2022 (FAO, 2023). Nigeria's cattle population consists of two main breed categories: Zebu and Taurine. Zebu Breeds consist of: Bunaji (White Fulani): milk production and adaptability, Rahaji (Red Bororo): beef production and heat tolerance, and Gudali: beef and dairy production (FMARD, 2020). Taurine Breeds consist of: Muturu (draft purposes and trypano-tolerance), Kuri: distinctive horns and milk production, Keteku: trypano-tolerance and size (Muturu x Zebu cross), and N'dama: resistant to trypanosomiasis, suitable for tsetse-infested areas. These breeds demonstrate Nigeria's rich cattle diversity, adapted to various environments and purposes (Adebambo, Gwaza *et al.*, 2018, Adeniji, 1985 and Agyemang *et al.*, 1997).

The exact population of Muturu cattle in Nigeria remains uncertain due to limited data and declining numbers. Estimates range from 115,172 in 1992 to 75,000 in 2005, with a notable decline by 2018 attributed to crossbreeding and reduced rearing practices due to increase pressure on land (FAO, 2009, Gwaza & Momoh, 2016 and Aminu *et al.*, 2021).

Horns are distinctive features composed of keratin and living bone, growing from the skull of domestic ruminants like cattle. They serve multiple functions, including defense, intimidation, establishing social hierarchy, thermoregulation, and protection, helping animals protect themselves and establish dominance. Horns can vary in presentation depending on breed and may be removed in cases of intense aggressiveness (Taylor & Field, 1999 and Ahamefule *et al.*, 2007).

Cattle can sustain various types of head wounds, including lacerations, puncture wounds, abrasions, avulsions, and skull fractures. Other injuries include degloving injuries, bite wounds, and horn-related trauma. These wounds can be caused by accidents, fights with other animals, or

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environmental hazards, with vulnerable areas including the trunk, limbs, neck, and head (Rani *et al.*, 2000 and Salisu *et al.*, 2018).

The head of a cow plays a crucial role in its survival, social interaction, and overall well-being. It enables the cow to sense its environment through sensory organs, facilitate eating and drinking, communicate via vocalizations and facial expressions, and defend against predators or rivals. The head also maintains balance and coordination through the vestibular system, making it essential for the cow's daily life (Oakes 2001, Senger 2003 and Setchell *et al.*, 1993).

The head's anatomy consists of multiple layers, including the skull bones, meninges, cerebrospinal fluid (CSF), and brain. The scalp provides outer protection, while the skull bones act as a critical barrier against external trauma. The meninges envelop and cushion the brain, and CSF circulates between these layers to absorb shocks and maintain brain health. Injuries reaching the meninges or brain can be life-threatening, and prompt veterinary attention is essential to prevent serious complications or fatalities, particularly if the brainstem is damaged (Rani *et al.*, 2000, Salisu *et al.*, 2018 and Ameh 2000).

Horn-related injuries are common in cattle, particularly in breeds with curved or malformed horns. These injuries can lead to secondary complications in the victims being man or other animals such as infections, infestations, and chronic pain. This case report describes the management of a recurrent horn self-inflicted laceration infested with house fly's larvae and *Staphylococcus aureus* in a 6-year-old female Muturu cow (Rani *et al.*, 2000, Salisu *et al.*, 2018 and Ameh 2000).

Clinical history and observations

The case of right facial Laceration in a 6-Year-Old Muturu Cow, *Bos taurus brachyceros*; due recurrent self-infliction of regrowth of weird horn was present on Oracle farm visit for treatment (Fig. 1)..

Two days prior to clinical presentation of the cow, the cow was observed with bleeding of the facial area in contact with the horn due to recurrent injury at the right facial region caused by regrowth of the weird-presented horns on the right side.

Physical Examination

Physical examination revealed a circumscribe laceration on the right facial region affecting majorly Masseter (involved in jaw movement), Zygomaticus (moving the lips and mouth) and Buccinator (compressing the cheeks), Orbicularis

oculi (surrounding the eyes) and Levator labii superioris (elevating the upper lip) were mildly affected with the previously cut tip of the horn touching the right cheek, causing injuries. Larvae of flies were sighted on the wound and were housed inside the horn, which had a foul odour, bloody discharges, serous and purulent exudates (Fig. 1-5).

Surgical management

The cow was restrained in a standing position by two handlers holding the base of the horn. A ring block was administered at the base of the horn using 3ml of 2% lignocaine hydrochloride with adrenaline for regional anaesthesia. Surgical intervention was performed on the right horn by involving trimming before the abnormal curvature (Turner & McIlwraith, 2013). Clinical examination revealed a partial-thickness, deep lacerated wound on the skin and muscularis, with mild swelling, hemorrhages, purulent and serous discharges. The laceration was surgically corrected through debridement with tincture of iodine, followed by lavage with oxytetracycline spray and dressing with gauze (Rani *et al.*, 2000, Salisu *et al.*, 2018, Ameh 2000 and Turner & McIlwraith, 2013). The right horn was trimmed at the distal one-third portion using a saw, and the stump was irrigated with antibiotic spray and dressed with a bandage. Upon inspection of the tip cult portion of the horn, 73 larvae were found and sent to the lab for identification. Swabs from the laceration wound were also sent for culture and sensitivity testing. Post-surgical treatment included antibiotic spray (oxytet spray) applied for one week, penicillin-streptomycin P-STREP NOR by Jubaili animal health Ltd, Nigeria. (1ml/20kg body weight daily for 5 days), Dexamethasone, Dexanor 0.2® by Jubaili Animal health Ltd Nigeria. (1ml/25kg body weight daily for 5 days and vitamin K was administered). Multivitamin injection (VMultinor® by Jubaili Animal health Ltd, Nigeria) at the dose rate of 1ml/10kg of live body weight intramuscularly for 5 days. The wound showed swift healing, and the cow's recuperated within 9 days post treatment

Laboratory Results: The laboratory results revealed that all other parameters were normal. But there was presence of larvae of house flies on gross and microscopic evaluation.

Discussion

Head injuries due to horn self-infliction are rare in cattle. The case report documented first recorded



Fig 1. Photograph showing Muturu curve horn, Fig 2. Muturu curve cow restrained during horn trimming procedure, Fig 3. Photograph showing laceration post horn trimming, Fig 4. Photograph showing laceration undergoing treatment, Fig 5. Post horn trimming of muturu, Fig 6. Horn section showing larva of flies.

instance of horn self-inflicted head injury in a Muturu cow *bostancus*, highlighting the potential dangers of weird abnormal horn growth (Umayange *et al.*, 2025).

Horn injuries are common in livestock farms, often affecting other animals or handlers (Rani *et al.*, 2000, Salisu *et al.*, 2018, Ameh 2000 and Ikhatua, 2010). In ruminants like Muturu cows, weirdly presented horns can cause lacerations, deep cuts, punctures, or other injuries to the animal itself, others, or handlers.

Horn-Related Injuries due to abnormal horn growth can cause injuries to cows themselves, other animals, or handlers. One case report documented a West African dwarf bull cow with a self-inflicted head injury caused by a malformed horn, which was treated with surgical trimming and post-operative care; the animal was healed (Ikhatua, 2010). Das *et al.* (2021) also reported Surgical management of cutaneous horn (cornu cutaneum) in a buffalo.

Successful surgical management of lacerations were reported by Rani *et al.* (2000) and Salisu *et al.* (2018) in crossbred cows involving debridement, suturing and post-operative care with antibiotics

and anti-inflammatory medications.

To prevent such injuries, management practices like trimming or removing horns are essential. Disbudding or dehorning, when performed professionally, can help avert potential dangers of systemic infections. However, improper horn trimming can lead to complications like infections or regrowth, emphasizing the need for proper technique and care (Rani *et al.*, 2000).

In the present case, the laceration was acute in a circular form affecting multiple facial muscles, including the Zygomaticus, Buccinator, Orbicularis oculi, Levator labii superioris, and Masseter. The injury pierced the skin, resulting in haemorrhages, purulent discharges, and serous discharges with inflammatory areas, posing a potential risk of the brain infection (Fig. 1-6).

Surgical intervention was performed on the right horn by trimming of the horn with saw prior to the abnormal curvature. Clinical examination revealed partial thickness mud lacerated wound on skin and muscularis with mild swelling on the wound edges, haemorrhages, purulent and serous discharges. Surgical correction of laceration was performed by debridement of the laceration and

cleaning with tincture of iodine. The stump and lacerations were lavages with oxytetracycline spray and dressed with gauze. The treatment approach facilitated swift healing, with noticeable recovery within 9 days.

Regular horn trimming was recommended as part of farm management to prevent self-inflicted injuries and potential harm to handlers and other animals. Prompt surgical intervention and proper post-surgical care are essential for treating such injuries and promoting healing, highlighting the importance of proactive management and timely treatment in livestock care (Ikhatua, 2010).

The case highlighted the importance of regular horn trimming and monitoring in cattle with malformed horns. The presence of larvae and bacterial infection complicated the case, requiring a comprehensive treatment approach. The use of antibiotics, anti-inflammatory agents, and parasiticides led to a successful outcome.

Recurrent horn self-inflicted lacerations can be challenging to manage, but a combination of surgical trimming, antibiotics, and parasiticides can lead to a successful outcome.

Recommendations

- Regular horn trimming and monitoring should be performed in cattle with malformed horns.
- A comprehensive treatment approach should be adopted in cases of horn related injuries with secondary complications.
- Farmers should be educated on the importance of regular veterinary check-ups and horn care to prevent such cases.

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