

Clinical Management of Cutaneous Myiasis Wound Due To Post Traumatic Horn Injury in a Bull: A Case Report

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Abstract: A 3 year-old semi-intensively managed Friesian Cross bull weighing 500kg was presented to Universiti Veterinary Hospital, University Putra Malaysia with primary complains of broken left horn. Physical examination revealed a foul smelling necrotic wound around the left cornual region measuring 5cm×5cm in radius and 2cm in diameter and flies eggs were seen on the surface of the wound. All other vital parameters were within the normal range. The clinical diagnosis for this case was cutaneous myiasis wound due to post traumatic injury. The case was managed by wound debridement and flushing with hydrogen peroxide and diluted hibiscrub followed by dressing with tincture of iodine. Dermapred was administered topically and Woundsarex was sprayed around the wound. Parenteral administration of Flunixin Meglumine (1.1mg/kg) intramuscularly and Multivitamin injection (10mg/kg) were instituted for 5 days. The outcome of the wound was good after 10 days of post treatment.

Keywords: Wound, myiasis, horn, bull, clinical, management.

I. Introduction

Myiasis refers to the infestation of living vertebrate animals by larvae of the order Diptera (true flies) that feed for varying periods of time on the dead or living tissue, body substances of the host, or ingested food causing a broad range of infestation depending on the relationship of the larvae with the host and the location [1,2]. Cutaneous myiasis is the infestation of the skin by the larvae of certain fly species. The majority of cases of myiasis are categorized based on relationship with their hosts which could either be obligatory, facultative or accidental myiasis [3]. Obligate parasites grow only on healthy tissue of live hosts while facultative parasites are usually associated with carrion, fecal materials, or decaying plant material. Cutaneous myiasis can equally develop on necrotic tissue of living animals. The third type is accidental myiasis at which the egg or larvae of saprophagous flies are inhaled or swallowed inadvertently with contaminated food. Clinically, a more useful classification scheme is based on the area of the body affected by the maggot or subsequent development in the host [4]. These include gastrointestinal, urogenital, ocular, nasopharyngeal, auricular and cutaneous myiasis. Cutaneous presentations include furuncular, migratory, and wound myiasis depending on the type of infesting larvae.

Although cutaneous myiasis is the most commonly reported form of the disease in the tropics, cutaneous myiasis at the base of the horn of cattle is rarely reported. Knowledge of the disease is imperative from the preventive, diagnostic and curative point of view even though the disease is not a lethal disorder. This case reports a case of cutaneous myiasis at the base of the horn in a bull.

II. Case Report

History

A 3 year old Friesian Cross bull weighing 500kg was presented to the Universiti Veterinary Hospital, Universiti Putra Malaysia with broken left horn. The bull was managed semi-intensively where the vaccination and deworming status were up-to-date. Upon physical examination, the wound at the base of left horn was necrotic with foul smelling with the diameter of 5 cm. Maggots and fly eggs were also found on the wound surface (Figure 1)

Diagnosis

Based on the presence of fly's eggs at the wound site, the case was diagnosed as cutaneous myiasis due to post traumatic injury.

Treatment

The therapeutic plan for this case was to perform wound cleaning using hydrogen peroxide which act as chemical debridement agent. The wound was flushed with hydrogen peroxide followed by flushing with diluted hibiscrub and followed by tincture iodine. During this procedure, the dead maggots and necrotized tissues were removed. Finally, Dermaped cream was applied topically. This wound cleaning procedure was repeated daily and the woundsarex spray was also applied around the wound (Figure 2). The systemic treatment for this case was administration of Flunixin meglumine (1.1mg/kg) intramuscularly twice a day for 3 days as anti-inflammatory, anti-pyrexia and analgesic agent. Long acting antibiotic oxytetracycline (20mg/kg) was also given once deep intramuscularly to treat secondary bacterial infections.

Prognosis

The case was followed up where the bull was observed to have responded well to the medications after 10 days post treatment.

III. Discussion

Although myiasis is common in tropical countries, the location of cutaneous myiasis at the base of the horn in a bull as reported in this case is rare as there are no available references in the literature. Knowledge of the disease is vital from the preventive, diagnostic and curative point of view even though the myiasis is not a lethal disease. For animal with open wound as reported in this case, proper treatment of the wound needs to be done promptly and fly repellent should be applied to prevent further infestation where the eggs will develop into larvae which will then feed on the tissue, causing severe damage. Hygiene of the farm needs to be considered where proper management of fecal materials can be practised to prevent overproduction of flies [5].

The clinical presentation of myiasis is variable depending on the specific cause and the body part affected, which can include skin, ocular, nasal, oral, gastrointestinal, aural and genitourinary tracts [6]. In this case, the bull was presented with wound at the base of the left horn where maggots and fly's eggs were seen on the wound. Therapy for myiasis includes (1); the application of a toxic substance to the larva and egg, (2); the production of localized hypoxia to force the emergence of the larva, (3); mechanical or surgical removal of the maggots from the site of infestation, (4) surgical debridement was also indicated since removal of the larvae is curative in all types of myiasis [4]. Due to the location of the wound which makes it very difficult to treat, methods (3) and (4) were used for myiasis treatment in this case. Surgical removal enables the clinician to remove the death tissues and the larvae, thereby reducing the chances of complications by secondary bacterial infection [7]. Following removal of the larvae and death tissues, the wound was dressed daily with local antiseptic treatment; administration of effective anti-parasitic drug and systemic administration of antibacterial agent against secondary bacterial infection were done in this case and in agreement with Falish, (2001) [8].

IV. Figures



Figure 1: Necrotic wound on the corneal process of the skull with fly's eggs.



Figure 2: Wound cleaning of the necrotic lesion using hydrogen peroxide, hibiscrub and tincture iodine

V. Conclusion

Prompt diagnosis and treatment of myiasis is important, to prevent unnecessary losses in the ruminant industry.

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References

- [1]. K. Robbins, and A. Khachemoune, Cutaneous myiasis: a review of the common types of myiasis. *International Journal of Dermatology*, 49(10), 2010, 1092-1098.
- [2]. F. Francesconi, and O. Lupi, Myiasis. *Clinical Microbiology Reviews*, 25(1), 2005, 79-105.
- [3]. Nhm.ac.uk., Introduction to myiasis, Natural History Museum. Retrieved 5 October 2014, from <http://www.nhm.ac.uk/research-curation/scientific-resources/taxonomy-systematics/myiasis-larvae/intro-myiasis/index.html>.
- [4]. F. Francesconi, and O. Lupi, *Tropical Dermatology*, (Philadelphia, Elsevier, 2006).
- [5]. P. Bowler, B. Duerden, and D. Armstrong, Wound microbiology and associated approaches to wound management. *Clinical microbiology reviews* 14, 2001, 244-269.
- [6]. N. Kpea, and C. Zywojnski, "Flies in the flesh": a case report and review of cutaneous myiasis. *Cutis*, 55(1), 1995, 47-48.
- [7]. E. B. Droma, A. Wilamowski, H. Schnur, N. Yarom, E. Scheuer, and E. Schwartz, Oral myiasis: a case report and literature review. *Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology, and Endodontology*, 103(1), 2007, 92-96.
- [8]. G. Falish, Wound Management for Veterinary Technicians. In "Illinois State Veterinary Medical Association (ISVMA) Annual Conference Proceedings 2012". Illinois State Veterinary Medical Association (ISVMA), Westin Lombard Yorktown Center, 70 Yorktown Center, Lombard, IL 60148, Illinois, USA.