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CASE REPORT: MYIASIS CLINICAL TREATMENT OF 2 MONTH OLD DAIRY CALF

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Abstract

This case study reports the treatment of a 2 month old dairy calf that has myiasis on its right hind leg. The myiasis was first noticed by the farm that stated the calf had an open wound with maggot infestation and a noticeable foul odor. On examination, the calf limping due to an open wound. Clinical examination palpation was performed and there was obvious pain in the wounded area followed by high body temperature, and rapid heart rate. Treatment consists of removing maggots from the wound, cleaning the wound site with H_2O_2, Rivanol®, and diluted povidone iodine. Debridement of the wound by excising the edges of the injured skin with a scalpel was done to expose surrounding healthy tissue. Antibiotic powder applied to the wound before suturing. Wound suturing was done with simple interrupted sutures with 2.0 silk sutures. After suturing process was completed, injection of Intramox®, Biopros®, and Dexapros® was given for 3 days. Then followed by oral antibiotics Sulfapros® until day 7. External wound care was done with regular monitoring and spraying of Intra Repiderma® for 21 days. The prognosis was good and suture removal performed 5 days after the procedure.

Keywords: *Health, clinical treatment, debridement, myiasis, open wound.*

INTRODUCTION

Myiasis is a condition where fly larvae invade open wounds that can occur in humans and animals where fly larvae use the living tissue, necrotic tissue, and body fluids of the host as a source of nutrition (Jesse *et al*., 2016). Myiasis cases can be found on both commercial and traditional farms and can occur at any time of the year (Wardhana *et al*., 2014). The primary predisposing factors in myiasis cases are open wounds, injured eyes, skin ulcers, and broken horns.

Female flies can lay eggs in open wounds and when the larvae are hatched, they will live and eat on the host's wound tissue (Juyena *et al*., 2013). Larval feeding activity towards open wounds can lead to wound enlargement and as a result of more serious tissue damage causing pruritus, irritation, pain, discomfort, and an increased risk of secondary infection (Francesconi and Lupi, 2012). In general, the condition of livestock affected by myiasis will be disturbed due to discomfort in the wound, reduced appetite, depression, risk of anemia, and death due to septicemia (Sotiraki *et al*., 2012).

Field diagnosis can be determined from patient history and close examination of the wound where fly larvae, foul odor presence, hemorrhage, and exudation may be observed (Sayhood *et al*., 2021). The aim of this case report is to share the clinical management and treatment of myiasis cases that are not uncommonly encountered in the field and with this case report it is hoped that it will also be useful for practicing livestock veterinarians.

MATERIAL AND METHOD

Case History and Clinical Examination

Myiasis occurred in a 2 month old calf with an open wound with maggot infestation on the right hind leg. Clinical treatment performed on the wound included cleaning and suturing the wound closed followed by administration of medication and routine wound monitoring. Anamnesis and case history are obtained from farm owner information and observation of clinical symptoms that appear. General clinical examination includes body temperature checking, auscultation examination, and hydration examination.

Open Wound Treatment

In an initial step of clinical management of a myiasis case, maggots are removed from the wound with tweezers and the wound is cleaned with H_2O_2, Rivanol®, and diluted povidone iodine. This is followed by wound debridement by trimming the edges of the injured skin with a scalpel. Sulfadiazine and Trimethropim antibiotic powders were applied to the wound before suturing was performed. Suturing was done with 2.0 silk sutures with simple interrupted sutures.

After the suture procedure to close the wound was completed, then continued with the administration of Intramox® Amoxicilin intramuscular injection (1 ml / 25 kg body weight), Multivitamin Biopros® (1 ml / 25 kg bodyweight)with intramuscular administration, Dexapros® (1 ml / 20 kg body weight) with intramuscular administration for 3 days. Then followed by oral antibiotic Sulfapros® that contain sulfadiazine and trimethropim until day 7. External wound care was maintained with regular monitoring. Intra Repiderma® spray were administered for 21 days on the

RESULT

2 month old dairy calf weighing 90 kg was brought to the Livestock & Pet Veterinary Practice at Malang Regency at May, 2024 for examination and treatment due to an open wound with maggots on its right hind leg. According to the owner, the calf had been showing signs of limping when walked since the previous day and a foul odor was present. The calf was also showing signs of loss of appetite. It was learned that the calf sustained the injury after hitting a cage divider in the cowshed which resulted an open wound. Palpation examination was done and there was obvious sign of pain in the wound area.



Figure 1. Open wound with maggots infestation in right hind leg of dairy calf.

General examination of a 2 months old calf weighing 90 kg showed symptoms of fever with body temperature of 41˚C. Auscultatory examination revealed normal heart sounds but rapid heart rate of 150 times/minute. In calves, normal temperature is 37.7˚C - 38.8˚ C and normal heart rate is 100-140 beats/minute. Respiratory frequency appears to be 60 breath/minute, which was relatively high for normal respiratory frequency in calves 30-60 breath/ minute. The mucosal condition of the gums and conjunctiva were pink and shiny indicating a normal mucosal condition of the calf without any signs of paleness. A general hydration check was also performed with CRT results within 2 seconds and normal skin turgor which showed no signs of dehydration.

Field diagnosis is made upon wound history, clinical examination, and the typical myiasis characteristics of maggot infestation of the wound which usually present with a foul odor (Sarker *et al*., 2016). Prognosis of this case appear to be good because calf responded well to the treatment and show some progress of healing the damaged area. Right management and proper after care are important to support the healing process (Jesse *et al*., 2016).

Treatment of the open wound includes removing maggots from the wound, cleaning the wound site, wound debridement, adding antibiotic powder before suturing, and suturing

the open wound with simple interrupted sutures. After suturing was completed, intramuscular injection of antibiotic, vitamins, and antihistamin was given for 3 days, followed by oral antibiotics until day 7. External wound care was done with regular monitoring and topical spraying for 21 days. The prognosis was good and suture removal performed 5 days after the procedure. The sutured wound showed progress and healing over time and no recurrence was reported.



Figure 2. Intra Repiderma Spray is applied after the suturing procedure has been completed.

DISCUSSION

Clinical treatment includes removing maggots from the wound, cleaning the wound area with H_2O_2, Rivanol®, and diluted povidone iodine, use of antibiotic powder, and debridement of the wound edges before suturing is performed. H_2O_2 is a topical antiseptic that can clean wounds by killing pathogenic bacteria (Zhu *et al*., 2017). Rivanol contains ethacridine lactate which is also used as an anteptic (O'Meara *et al*., 2014). Povidone iodine is used as an important active component of antiseptic agents to prevent the spread of infectious agents (Sufyan *et al*., 2018). Antibiotic powders can be used for topical administration to reduce the risk of secondary infection in wounds without too much systemic exposure (Fleischman and Austin, 2017).

Debridement is the process of removing devitalized tissue to reach surrounding healthy tissue and also remove foreign bodies imbedded in the wound. Necrotic tissue delays wound healing so a sharp debridement procedure can be applied to excise devitalized tissue using scissor or a scalpel to promote healing and finally allow the wound to granulate and epithelialize (Bottosso *et al*., 2023). Medications given to the calves consisted of amoxicillin, multivitamins and dexametasone injection for 3 days followed by oral antibiotics that contain sulfadiazine and trimethropime until day 7 to minimize secondary infection from the open wounds and reduce signs of inflammation due to the high body temperature of the calves when examined.

After procedure performed regular checking is done resulting good progress of healing and suture removal was performed 5 days after procedure. Intra Repiderma® topical spray was applied for 21 days after procedure. Intra Repiderma® is antibiotic free topical spray containing 6% chelated zinc and copper that has been proven can improve clinical sign of footroot wound (Loosli *et al*., 2023).

CONCLUSION

This case of a 2 month old 90 kg dairy calf with myiasis in its hind leg had a good prognosis with improved wound healing and suture removal was done just 5 days after the procedure. Effective healing process was supported by proper wound cleansing, debridement, and administration of appropriate medications. Aftercare management and monitoring must done to support healing process.

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