ISRG Journal of Agriculture and Veterinary Sciences (ISRGJAVS)

ISRG PUBLISHERS
Abbreviated Key Title: ISRG. J. Agri.Vet.Sci.
ISSN: 3048-8869 (Online)
Journal homepage: https://isrgpublishers.com/gjavs/
Volume – II Issue- VI (November-December) 2025
Frequency: Bimonthly

Surgical management of tail gangrene (Degnala) in buffalo: Case report

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| **Received:** 15.10.2025 | **Accepted:** 23.10.2025 | **Published:** 06.11.2025

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Abstract

Degnala is a fungal disease caused by Fusarium species and is more prevalent in large ruminants. This case study was made to understand the importance and effective treatment of the disease. The hematological investigation revealed that the blood parameters were normal except increases in number of RBC, Monocytes and eosinophil. The surgical approach was done to correct the condition in which tail was amputate from the site above the infected region of tail. Post-surgical complications were none and recovery was very satisfying.

Keywords: Tail Gangrene, surgery, degnella

INTRODUCTION

"Degnala" is an endemic, mostly fetal disease of buffalo that occurs in low, plain, and limited topographic areas in western Asia, such as Nepal and India. According to Shirlow (1939), Degnala disease was named so due to the first occurrence of this disease in the area near Deg Nala (Deg River), area of Pakistan in 1929-30. Degnala is more prevalent in paddy growing parts in the month of winter (Jadav and Mistry, 1997). Poor quality of paddy and wheat straw infected with *Fusarium* fungus is believed to be the main cause of degnala diseases. Overall malaise, edema of the extremities, general wasting with necrosis, and epidermal sloughing are all symptoms of this disease. Infections that are debilitating in nature can result in large economic losses due to lower production, which is compounded by lower growth rates, death, and poor animal performance.

MATERIALS AND METHODS

Case description and history

A third parity female buffalo was presented to in Veterinary Hospital, Madi, Chitwan, Nepal in August, 2021 with a history of infection on the tail. Owner revealed that the buffalo was kept

DOI: 10.5281/zenodo.17541207

under straw feeding and mostly the animal was stalled fed. The owner revealed that the straw was a bit moldy as well and the body condition of buffalo was good with normal vitals.

Clinical observations

On clinical observation, closely find with the principle clinical sign of swelling tail and then drying, necrosis and gangrenous lesion and sloughing of superficial skin on tail. Examination revealed that there is normal rectal temperature, heart rate, respiration rates, capillary refill time, pinkish mucous membrane and normal feeding and watering.

Surgical procedure

Buffalo was kept under epidural anesthesia with 2% lignocaine HCl at the junction of C_1 and C_2 while the animal was in standing position. During surgical procedure, separation of subcutaneous tissue layers, ligation in every opening of blood vessel was made by catgut 2-0. Excision of tail (Figure 1) above the infection was done with an elliptical incision on the skin so that suturing will be easier. Tail below was removed completely and suture of skin was done with prolene No. 1 size (Figure 2). After complete dressing the suture area is completely covered with tape (Figure 3).

Figure 1: Infected tail

Figure 2: Suturing of incised area

Figure 3: The suture area is completely covered with tape

Figure 4: Removed segment of tail

Post-operative care

Animal was given meloxicam on next day and course of antibiotics with amoxicillin and potassium calvunate was done for 3 days. After 15 days suture is removed and was healing well. There were no post-operative complications and buffalo was completely recovered within 15 days.

MAJOR FINDINGS

As shown in Table-1, there were no remarkable abnormalities were found with hematological parameters except slight increase in RBC, Monocyte and Eosinophil.

Table 1. Shows the different hematological and serological parameters

Hematological Parameters	Findings	Reference value	Serological parameters	Findings	Reference value
HB (gm/dl)	10.3	9-12	Total protein (gm/dl)	6.8	4.1-7.0
RBC*10^{12}/l	**8.6**	5-7.3	Albumin	3.0	2.5-3.8
WBC*10^{9}/l	3.20	4-12	ALT (IU/L)	18	15-45
PCV%	34	30-36	AST(IU/L)	30	25-40
Neutrophil%	20	25-35	Total Bilirubin (mg/dl)	0.2	0.1-1.7
Monocyte%	**8.6**	3-7	BUN (mg/dl)	6.5	6-27
Eosinophil%	**6.3**	2-4	Creatinine (mg/dl)	0.95	0.91-2.0
Lymphocytes%	57.7	45-65	Alkaline phosphate (IU/L)	120	40-150

DISCUSSION

In the present case, the effected part of tail was excised and removed carefully. Degnala was diagnosed on the basis of history of feeding and observation of affected animal. According to Karki (2012) mycotoxin produced by the metabolism of Fusariam fungus cultivated on paddy/rice straw dissolves collagen and elastin into collagenase and elastinase, respectively, and is one of the leading causes of Degnala disease. As a result, blood flow to the dependent regions of the ear, tail, and foot is restricted, and tissue eventually dies of anoxia. Feeding moldy rice straw by animal in this case was in line with Dandapat et al. (2011); Behra, (1988); Kalra et al. (1977). Experimental feeding of Fusorium containing straw was performed in buffaloes (Kalra, 1973; Behra, 1988) and in buffalo calves with *F. equiseti* (Kwatra, 1980) with *F. oxysporum* (Dandapat et al., 2011). Since occurrence of the disease has been associated with the feeding of rice straw, selenium toxicity is suspected to play some role, directly or indirectly, in the development of the disease (Bhatia & Gupta, 1986; Sharma. 1984)

CONCLUSION

The present study revealed that the Degnala diseases was mostly related and observed in animals feeding on fungal infected straw. Typical clinical sign of the disease can be observed in the extremities and best treatment is surgical removal of affected part. During feeding care should be taken not to feed straw infected with fungus.

DOI: 10.5281/zenodo.17541207

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DOI: 10.5281/zenodo.17541207