



ISSN: 2456-2912

VET 2024; 9(5): 302-304

© 2024 VET

[www.veterinarypaper.com](http://www.veterinarypaper.com)

Received: 12-07-2024

Accepted: 13-08-2024

**Dr. Rambabu Kalaka**

Associate Professor, Department of Veterinary Surgery & Radiology, NTR CVSc, Gannavaram, Andhra Pradesh, India

**Dr. G David Jeevanraj**

PG Scholar, Department of Veterinary Surgery & Radiology, CVSc, Proddatu, Andhra Pradesh, India

**J Mahesh**

Final BVSc & A.H students, NTR College of Veterinary Science, Gannavaram, Andhra Pradesh, India

**T Swetha**

Final BVSc & A.H students, NTR College of Veterinary Science, Gannavaram, Andhra Pradesh, India

**B Amulya**

Final BVSc & A.H students, NTR College of Veterinary Science, Gannavaram, Andhra Pradesh, India

**B Sree Satya Niharika**

Final BVSc & A.H students, NTR College of Veterinary Science, Gannavaram, Andhra Pradesh, India

**Corresponding Author:**

**Dr. Rambabu Kalaka**

Associate Professor, Department of Veterinary Surgery & Radiology, NTR CVSc, Gannavaram, Andhra Pradesh, India

## Surgical management of severe dog bite wounds in a calf: A case report

**Dr. Rambabu Kalaka, Dr. G David Jeevanraj, J Mahesh, T Swetha, B Amulya and B Sree Satya Niharika**

### Abstract

A ten days old calf was presented to the Department of Veterinary Surgery and Radiology, NTR College of Veterinary Science, Gannavaram with a complaint of severe dog bite previous night. The calf with loss of appetite, dull and depressed. Clinical examination revealed extensive open wounds with severe bleeding. Based on history and clinical signs to save the life of animal suturing were performed under local infiltration using 2% Lignocaine hydrochloride after antiseptic cleaning and disinfection. Fluid therapy, antibiotic, analgesic and multivitamin therapy were given post operatively and animal showed uneventful recovery without any complication. The details of surgical management, anesthesia, post operative management and post bite antirabies vaccination will be discussed.

**Keywords:** Dog bite, wound debridement, local infiltration, suturing, antirabies

### Introduction

Dog bite wounds are one of the most common types of traumatic injuries in different livestock species like cattle, sheep and goats even in dogs and cats. Approximately 60-80 percent of all bite wounds are caused by dogs (Kramer *et al.*, 2010) <sup>[1]</sup>. These bite wounds range from superficial abrasions to major tissue loss including bone damage (Rothe *et al.*, 2015) <sup>[2]</sup>. According to OIE, 2013 <sup>[3]</sup>, Rabies is a fatal neurological disease that can infect both humans and animals when they come into direct contact with the saliva of a rabid animal, usually through biting; however, saliva can also spread through contact with mucous membranes or open wounds, this virus stays at the point of entrance for a while before moving through the nerves and into the brain. The virus grows rapidly in the brain, producing symptoms. Hossain *et al.*, 2011 <sup>[4]</sup> stated that fever, muscle weakness, tingling, and burning at the bite site are the initial symptoms of rabies. The subsequent symptoms, which include insomnia, anxiety, confusion, partial paralysis, agitation, hallucinations, excessive salivation, difficulty swallowing and fear of water, arise as the virus proceeds to target the central nervous system. Antiseptic lavaging and dressing of wounds followed by giving antihistaminic and antimicrobial drugs will manage then non rabid dog bite in domestic animals, where as in case of rabid dog bite, post exposure rabies vaccine should be initiated immediately with contacts of dog bites. Strategy Plan, 2010 <sup>[5]</sup> classified the indication for post-exposure vaccination with or without rabies immune globulin based on the type of contact with the rabid animal as category I (licks on the skin by rabid dog) no treatment is required, whereas for category II (minor scratches or abrasions without bleeding, licks on the broken skin) immediate vaccination is required and for category III (single or multiple bite scratches) immediate vaccination and administration of rabies immunoglobulin are strongly recommended. Time is an important aspect, surgery should be done within 6 to 8 hours following a dog bite, according to standards and evidence (Hochberg *et al.*, 2001) <sup>[6]</sup>. According to Vasconez *et al.*, 2011 <sup>[7]</sup>, a delayed surgical approach reportedly leads to more frequent structural and functional deformities. Despite of that extending this time limit is generally accepted and frequently yields satisfactory results (Roth *et al.* 2015) <sup>[2]</sup>. While antimicrobial therapy is usually recommended, tetanus and rabies therapies are dependent on the patient's immunization status and the health of the attacking dog (Prem *et al.*, 2020) <sup>[8]</sup>.

### Case description

A ten days old female Ongole calf was presented to the Department of Veterinary Surgery and Radiology, NTR College of Veterinary Science, Gannavaram with a complaint of severe dog bite previous night. The animal was dull, depressed and anorectic. Clinical examination revealed extensive open wounds including scratches, deep open cuts, crush injuring and tearing away of skin and muscles at inguinal and perineal region with severe bleeding (Fig. 1 & 2). Physiological parameters are within the normal range i.e., temperature of 101.5 °F, pulse rate of 75 beats/minute and respiratory rate of 30 breaths/minute.

### Materials and Methods

At the time of report of the case the wounds were extensive and the case was presented within 8 hrs of the dog bite, it was decided for suturing under local anesthesia, keeping the condition of the animal in mind, general anesthesia is avoided. The animal was controlled in lateral recumbency, the wounds were thoroughly lavaged with diluted Potassium permanganate solution and then the wound site was prepared aseptically using diluted Povidone iodine. Inj. 2% Lignocaine was infiltrated around the wound site. Wound debridement was done and muscle layers are sutured by using Chromic Catgut No.1 in continuous lockstitch pattern, subcutaneous layer is sutured by using PGA 2-0 in continuous pattern and skin was sutured with horizontal mattress using non absorbable suture material with Silk No.2 (Fig. 3 and 4). Dressing was done using Povidone iodine (Fig. 5) and Bandage was applied to avoid further complications and secondary bacterial infections (Fig. 6). Post operatively Inj.

Ceftriaxone @ 25mg/kg and Inj. Meloxicam @ 0.3mg/kg were administered for 5 days and 3 days consecutively along with Inj. Anti Rabies vaccine (post bite vaccination as per standard protocols) and Inj. Tetanus Toxoid 0.5ml I/M. Daily dressing of wounds were done with Povidone iodine and with Topicure spray.

### Results and Discussion

The sutured site was intact and proper apposition of skin was evident. The skin sutures were removed on the 12<sup>th</sup> day and the animal showed uneventful recovery by the end of 15<sup>th</sup> postoperative day.

In the presented case the type of injury was due to dog bite which was in similar with Islam *et al.*, 2016<sup>[9]</sup> who reported that bite wounds from dogs are the most common types of traumatic injuries on various livestock species. Our findings are similar with that of Ahmed, 2013<sup>[10]</sup> who stated that, female ruminants and younger animals are more vulnerable to the effects of a dog bites due to their low energy levels and illness. The region of the wounds in this animal are in accordance with Rumana *et al.*, 2013<sup>[11]</sup> who mentioned that dogs generally target the hind quarter, so it makes sense that the hind quarter and hind leg of all species are the most susceptible to dog bites. As the animal was presented within 8 hours, treatment is given by surgical intervention as suggested by Hochberg *et al.*, 2001<sup>[6]</sup> that surgery should be done within 6 to 8 hours following a dog bite, according to standards and evidence. The bite occurred due to rabid dog or non-rabid dog, in post-operative therapy we included antibiotic and anti-inflammatory along with immediate post exposure rabies vaccine.



Fig 1 & 2: At the time of presentation



Fig 3: Suturing done at perineal region

Fig 4: Suturing done at inguinal region



**Fig 5:** Dressing was done using Povidone iodine



**Fig 6:** Bandage was applied

### Conclusion

Extensive dog bite wound in the present case was managed by suturing. Thorough lavage of the wound with antiseptic solution prior to suturing helped in minimal post operative complications. Appropriate surgical procedure and proper post operative care aided in good recovery of the animal.

### References

1. Kramer A, Assadian O, Frank M, Bender C and Hinz P. Working Section for Clinical Antiseptic of the German Society for Hospital Hygiene. Prevention of post-operative infections after surgical treatment of bite wounds. *GMS Krankenhhyg Interdiszip.* 2010;5:12.
2. Rothe K, Tsokos M and Handrick W. Animal and human bite wounds. *Disch Arztebl int.* 2015;112: 433-442.
3. OIE. World Organization for Animal Health; Terrestrial Animal Health Code, Volume 2, Twenty Second Ed., France, OIE; c2013, p. 440-442.
4. Hossain M, Bulbul T, Ahmed K, Ahmed Z, Sallmuzzaman M, Haque MS and Nishizono A Five year (January, 2004-December, 2008) surveillance on animal bite and rabies vaccine utilization in the Infectious Disease Hospital, Dhaka, Bangladesh *Vaccine* 29; c2011, p. 1036-40.
5. Strategy Plan. Elimination of Rabies in Bangladesh; c2010, p. 18-21.
6. Hochberg J, Ardenghy M and Toledo S. Soft tissue injuries to face and neck early assessment and repair. *World J. Surg* 25.2001;1023-1027.
7. Vasconez HC, Buseman JL, Cunningham LL. Management of facial soft tissue injuries in children *J. Craniofac Surg.* 22; c2011, 1320-1326.
8. Prem B, Liu DT, Parschalk B, Erovic BM and Mueller CA. Surgical management of severe facial trauma after dog bite A Case Report. *Acta Oto-Laryngologica Case Reports* 5; c2020, p. 17-22.
9. Islam KMF, Hossain MI, Jalal S, Quader MN, Kumar S, Islam K, *et al.* Investigation into dog bite in cattle, goats and dog at selected veterinary hospitals in Bangladesh and India. *J Adv. Vet Anim. Res.* 3; c2016, p. 252-258.
10. Ahmed NA. Rabies control in Bangladesh: human behaviors following dog bites; South Asia Regional One Health Symposium; c2013.
11. Rumana R, Sayeed AA, Basher A, Islam Z, Rahman MR, Faiz MA. Perceptions and treatment seeking behavior for dog bites in rural Bangladesh. *Southeast Asian Journal Tropical Medicine and Public Health*, 44; c2013, p. 244-248.

### How to Cite This Article

Kalaka R, Jeevanraj GD, Mahesh J, Swetha T, Amulya B, Niharika BSS. Surgical management of severe dog bite wounds in a calf: A case report. *International Journal of Veterinary Sciences and Animal Husbandry.* 2024;9(5):302-304.

### Creative Commons (CC) License

This is an open-access journal, and articles are distributed under the terms of the Creative Commons Attribution-Non Commercial-Share Alike 4.0 International (CC BY-NC-SA 4.0) License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.