



ISSN: 2456-2912

VET 2024; 9(2): 518-520

© 2024 VET

www.veterinarypaper.com

Received: 21-12-2023

Accepted: 30-01-2024

JK Mahla

Assistant Professor,
Department of Veterinary Surgery
and Radiology, College of Veterinary
Science and Animal Husbandry,
Kamdhenu University, Anand,
Gujarat, India

PV Parikh

Professor and Head,
Department of Veterinary Surgery
and Radiology, College of Veterinary
Science and Animal Husbandry,
Kamdhenu University, Anand,
Gujarat, India

AK Patel

PG Scholar, Department of
Veterinary Surgery and Radiology,
College of Veterinary Science and
Animal Husbandry, Kamdhenu
University, Anand, Gujarat, India

BM Patel

PG Scholar, Department of
Veterinary Surgery and Radiology,
College of Veterinary Science and
Animal Husbandry, Kamdhenu
University, Anand, Gujarat, India

KD Patel

PG Scholar, Department of
Veterinary Surgery and Radiology,
College of Veterinary Science and
Animal Husbandry, Kamdhenu
University, Anand, Gujarat, India

JY Bodala

PG Scholar, Department of
Veterinary Surgery and Radiology,
College of Veterinary Science and
Animal Husbandry, Kamdhenu
University, Anand, Gujarat, India

Corresponding Author:

JK Mahla

Assistant Professor,
Department of Veterinary Surgery
and Radiology, College of Veterinary
Science and Animal Husbandry,
Kamdhenu University, Anand,
Gujarat, India

Surgico-thermo and post-operative chemical cauterization for management of canker in horses

JK Mahla, PV Parikh, AK Patel, BM Patel, KD Patel and JY Bodala

DOI: <https://doi.org/10.22271/veterinary.2024.v9.i2h.1251>

Abstract

Canker in equine was routinely encountered in draft horses followed by frog injuries, equines showed frequent lifting and kicking of limb on the ground, whereas mild to moderate limping was exhibited in advanced cases. Abnormal cauliflower / finger-like papillae growth attached with ventral border of frog was observed after cleaning of hooves with hoof knife and brush in 33 horses presented to surgery department during year 2020-2023. Surgical management of canker was carried out in all cases (n=33) under Xylazine 1.1 mg/kg + Ketamine 2.2 mg/kg induction and maintenance of anaesthesia with Ketamine + Midazolam (1:1) mixture. Surgical removal of unwanted hoof debris and growth followed by thermo-cauterization. Post operatively airtight bandage (Eupad) was applied on affected limb by using mixture of Boric acid and Bleaching powder (50:50%) with sufficient cotton padding (n=17), followed by gauze piece and gunny bag till healing with mean treatment days 5.43 ± 0.25 (group-A). Coppersulphate paste was applied on surgical wound before eupad bandage in group B horses (n=16). Recovery rate was recorded better (88.24%) in group B, as compared to group A (56.25%) cases, while high recurrence 43.75% was recorded in group A as compared to 11.76% in the group B.

Keywords: Surgico-thermo, chemical, cauterization, management, canker

Introduction

Equine hoof canker (Pododermatitis chronica verrucosa sive migrans) as destructive and progressive pododermatitis with alterations in the cornification process of the keratinocytes (parakeratosis and hyperkeratosis) [5, 6, 7]. It generally originated in the frog; it might remain focal but had the capacity to become diffuse and invade the adjacent sole, bars, and hoof wall. The disease was commonly seen in draft breeds but could affect any breed or sex [1]. The cause of this condition was unknown. Different theories for the development of hoof canker have been reported. Inadequate husbandry (eg, a lack of hoof hygiene and excessive moisture), genetic predisposition, (auto) immune reactions, microorganisms (such as fungi, spirochetes, and other anaerobic bacteria), and bovine papillomaviruses have been suggested to be involved in the development of canker [3]. Age-wise distribution of the foot lesions indicated that out of the different age groups 13-15 years age group and sex wise female Horses were suffered more than male was also noted as mentioned by Ranbir Singh (2009) [4].

The disease was characterised by its typical clinical appearance: filamentous or cauliflower-like proliferation of the hoof matrix with foul smell and white cheesy exudate. It was a sporadic chronic disorder, and at later stages it compromised the use and welfare of horses [2]. Many a times pathology of foot disorders have not been properly investigated with the result the horses suffer from incurable lameness and bad confirmations [4].

Cases enrolled: Equines (n=33) were presented during year 2020-2023 at Department of Surgery and Radiology, Veterinary college, Kamdhenu University, Anand with frequent lifting and kicking on ground along with mild to moderate limping in advanced cases. Physical examination and cleaning of hooves carried out with hoof knife and brush, abnormal cauliflower / finger-like papillae growth attached with ventral border of frog was observed in 33 (16.75%) cases (fig.1).



Fig 1: Varying degree of canker affections in equine hoof

Materials and Methods

Canker affected 33 horses had randomly divided in two groups; where group A had 17 canker affected horses were post operatively managed by using eupad: A mixture (fig.2)

of Boric acid and Bleaching powder (50:50%), while group B horses were had additional use of copper sulphate paste (Fig.3) with air tight eupad bandage (Fig.4).



Fig 2: Eupad (Boric + Bleaching)



Fig 3: Copper sulphate paste



Fig 4: Air tight bandage (Eupad)

Surgical and post-operative management

Surgical management of canker was carried out in all cases (n=33) under Xylazine 1.1 mg/kg + Ketamine 2.2 mg/kg induction and maintenance of anaesthesia with Ketamine +

Midazolam (1:1) mixture.

Canker management of both groups A and B, their treatment protocols, treatment days and outcome were discussed in table 1.

Table 1: Treatment protocols, mean (±SE) treatment days and outcome of canker

Treatment groups	Treatment protocols	Treatment days (Mean±SE)	Outcome	
			Recurrence	Recovery
Group A (n=16)	Surgical excise with -Eupad bandage (Boric acid 50%: Bleaching powder 50%)	5.43 ±0.25	7 (43.75%)	9 (56.25%)
Group B (n=17)	Surgical excise, Copper sulphate dressing along with Eupad bandage	5.90 ±0.25	2 (11.76%)	15 (88.24%)

Surgically excised canker growth with the help of BP blade and thermo-cautery was applied by using hot firing iron to stop bleeding. Medicinal management includes Dicrysticin-S 2.5gm i/m and Flunixin 1.1mg/kg i/v for 5 days. Post operatively airtight bandage (Eupad) was applied on affected limb by using mixture of Boric acid and Bleaching powder (50:50%) with sufficient cotton padding (n=17), followed by gauze piece and gunny bag till healing with mean treatment days 5.43 ±0.25 (group-A). Copper sulphate paste was applied additionally in the group -B horses before air tight eupad application after canker surgery and medicinal management as above (n=16).



Fig 6 & 7: During & after thermo cauterization



Fig 5: Surgical debridement

Results and Discussion

Recovery rate was observed higher (88.24%; 15/17) in the group-B cases; while only (11.76%; 2/17) had recurrence of canker post operatively, as compared to limited success (56.25%; 9/16) in the group- A cases with recurrence of canker (43.75%; 7/16) (Table 1). The present findings of lower recurrence rate of recurrence by using Copper sulphate paste additionally to airtight Boric acid and Bleaching powder (50%: 50%) eupad was might be due to irritant nature of Copper sulphate prevents recurrence; however we could not

found reports of Copper sulphate from other authors, while O'Grady and Madison (2004) ^[1] treated 56 canker affected equines with application gauze piece soaked in 10% Benzyl peroxide in Acetone-c followed by pouring fine grinded powders with cotton padding along with air tight bandage and they found recurrence in only one case.

Conclusion

Canker management in horses are difficult as affected part situated ventral part of hoof, which frequently comes in contact with ground, hence chances of wound insult is one of the reason for recurrence of canker growth. Eupad air tight bandage favored organism free environment for wound healing and bandage avoids external injuries at wound site. Additional use of copper sulphate paste along with the boric acid: bleaching powder (50:50) provides better recovery rate 88.24% and showed only 11.76% recurrence.

References

1. O'Grady SE, Madison JB. How to treat equine canker. *Aaep Proceedings*. 2004;50:202-205.
2. Apprich V, Licka T. Equine hoof canker: a clinical trial of topical cisplatin chemotherapy. *Vet Rec*. 2013;172(9):238.
3. Apprich V, Licka T, Zipfl N, Tichy A, Gabriel C. Equine hoof canker: cell proliferation and morphology. *Veterinary pathology*. 2017;54(4):661-668.
4. Singh R, Panda SK, Nath I, Bose VSC. Study of equine foot lesions and experimental cryotherapy for canker and thrush in horse. *Indian J Vet. Pathol*. 2009;33(1):77-81.
5. Mishra PN, Bose VS, Rao AT, Panda SK. Cryotherapy for canker in a horse. *Vet Rec*. 1998;142(11):284.
6. Redding WR, O'Grady SE. Nonseptic diseases associated with the hoof complex: Keratoma, white line disease, canker, and neoplasia. *Vet Clin North Am. Equine Pract*. 2012;28(2):407-421.
7. Rigert S, Geyer H, Kummer M. Surgical treatment of canker involving all hoofs in a warm blood gelding [in German]. *Schweiz Arch Tierheilkd*. 2009;151(4):171-176.