Case Report

SURGICAL MANAGEMENT OF HYPODERMIC NEEDLE INDUCED LAMENESS IN A HALLIKAR HEIFER – A CASE REPORT

P.Sankar[1] , R.Pooja[2]*, R.Yalini[3] , M.Vijayakumar[4] , S.Dharmaceelan[5] and S.Kathirvel[6]

Department of Veterinary Surgery and Radiology
Veterinary College and Research Institute,
Tamil Nadu Veterinary and Animal Sciences University,
Namakkal-637002

ABSTRACT

Sharp penetrating foreign bodies in the hoof are important causes of chronic lameness in bovines. Improper disposal of needles after repeated injections or doping practices in race animals may result in accidental hoof penetration injuries. The present communication describes a case of a race heifer presented with pain and lameness of the left fore hoof. Radiographic examination revealed a radio-opaque metallic foreign body within the hoof region. Surgical exploration under sedation and Bier's block led to successful retrieval of a rusted 16 G needle without hub from the axial side of the hoof. Post-operative treatment resulted in uneventful recovery. The report highlights the importance of radiographic examination in bovines presented with chronic lameness of unknown origin and emphasizes the impact of improper needle disposal on animal welfare.

Keywords: Needle penetration, hoof, lameness, race heifer

Received : 27.05.2026 Revised :11.06.2026 Accepted : 17.06.2026

INTRODUCTION

Lameness in dairy cows, linked to claw disorders and pain, is a major welfare concern (Wessels *et al.*, 2025). It is a main cause of health and economic losses in dairy cattle farming (Urban-Chmiel *et al*., 2024) Penetrating foreign bodies in the hoof are important causes of pain and chronic lameness in bovines. Metallic objects such as needles may enter the hoof due to improper disposal practices and remain unnoticed for prolonged periods, leading to infection and locomotor disturbances. Radiography plays an important role in diagnosing such foreign bodies and guiding surgical retrieval. The present report describes successful retrieval of a rusted needle from the hoof of a race heifer and highlights the impact of improper needle disposal on animal welfare.

[1]Associate Professor
[2]MVSc Scholar ,*Corressponding Author email: poojarameshkumar494@gmail.com
[3]Fourth Professional year student,VCRI, Namakkal
[4]Assistant Professor
[5]Professor and Head
[6]Professor and Head, Veterinary Clinical Complex

HISTORY AND CLINICAL EXAMINATION

A Hallikar heifer was presented to the Veterinary Clinical Complex, Veterinary College and Research Institute, Namakkal with a history of lameness in the left forelimb. The animal had participated in racing approximately five months back. The owner reported that the animal evinced pain while placing weight on its affected left axial hoof and limping for the past seven days. On clinical examination, the animal showed evidence of severe pain on palpation of the hoof. The haematological and serum biochemical values recorded in the present case were within the normal physiological range Hb: 14.7 g/dL, PCV: 42.3%, RBC: 9.65 $\times 10^6/\mu L$, WBC: 10.81 $\times 10^3/\mu L$, Neutrophils: 23%, Lymphocytes: 71%, Monocytes: 6%, Platelet count: 470 $\times 10^3/\mu L$, Total protein: 5.7 g/dL, Albumin: 2.35 g/dL, BUN: 18.2 mg/dL, Creatinine: 1.3 mg/dL, Calcium: 8.73 mg/dL and Phosphorus: 5.8 mg/dL. For detailed evaluation, the animal was sedated using butorphanol (@.003mg/kg) IM and xylazine (@.03mg/kg IM). Radiographic examination of the hoof revealed a distinct radio-opaque foreign body embedded within the hoof, suggestive of a metallic object (Fig.2) and decided to retrieve surgically.

SURGICAL MANAGEMENT

The animal was prepared for surgical retrieval of the foreign body. Tetanus toxoid was administered prophylactically. Sedation and anesthesia were achieved using xylazine (@0.03mg/kg) IM, butorphanol (@0.003 mg/kg) IM, and ketamine (0.25 mg/kg) IM. Regional anaesthesia was provided by performing a Bier's block using 2% lignocaine (Nkemngu *et al*., 2025). The hoof was cleaned and aseptically prepared. Using radiographic guidance, debridement (Fig.3) over the sole was performed using a BP blade. A needle was identified on the axial side of the left fore hoof and retrieved using haemostatic forceps. Later it was identified as a 4.5 cm length rusted 16 G needle without hub (Fig.4).The cavity was flushed with tincture iodine and Heal Out ointment was infused and bandaging and done. Post-operatively, strepto-penicillin 20,000IU/kg, IM, meloxicam @0.5mg/kg IM and CPM @0.5mg/kg IM were administered. The owner was advised to continue inj. strepto-penicillin@20,000 IU/kg IM, inj. chlorpheniramine maleate @0.5mg/kg IM, inj.phenylbutazone @4 mg/kg IV for 3 days. Hoocare spray and 10% formalin footbath was advised for 7 days. Animal recovered uneventfully with any post operative complication with normal weight bearing on its left fore axial hoof.

DISCUSSION

Retained metallic foreign bodies within the hoof are uncommon but clinically significant causes of lameness in cattle. In the present case, the rusted needle acted as a persistent irritant leading to chronic inflammation, suppuration, pain, and lameness. Race animals are often subjected to repeated injections for therapeutic or unethical performance-enhancing purposes. Improper disposal of used needles after such practices can lead to accidental penetration injuries. Broken needles lodged within the

hoof may remain undetected for prolonged periods and gradually produce severe inflammatory reactions. Radiography is the best possible aid to diagnose deeply seated foreign body and to confirm number of foreign bodies (Gupta *et al.*, 2024). Regional anesthesia through Bier's block provided effective analgesia for the procedure (Brown *et al*., 1989). Early diagnosis and prompt surgical intervention prevented further complications such as septic arthritis, osteomyelitis, or permanent hoof deformity. This case emphasizes the importance of proper biomedical waste disposal and responsible veterinary practices in race animals. Safe disposal of sharps in puncture-proof containers is essential to prevent avoidable injuries and ensure animal welfare.

CONCLUSION

Improper disposal of needles following injectable administration or doping practices can result in accidental hoof penetration injuries causing severe pain, infection, and lameness in race cattle. Radiographic diagnosis and timely surgical retrieval are effective in resolving such cases. Proper sharps disposal, ethical management practices, and increased awareness among owners are necessary to prevent foreign body-induced lameness and improve the welfare of racing animals.

Fig.1. Toe touching on ground- left forelimb

Fig.2. Radiopaque foreign body- latero-medial radiographic view of left fore axial hoof

Fig.3. Retained metallic foreign body after debridement- left fore axial hoof

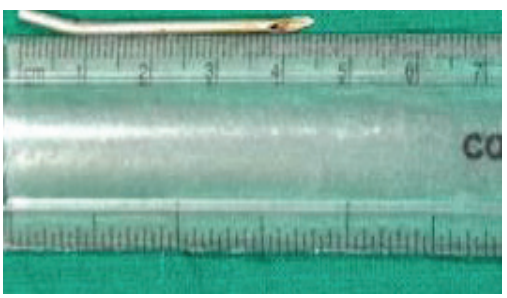

Fig.4. Retrieved rusted 16G needle without hub

REFERENCES

Brown, E.M., McGriff, J.T. and Malinowski, R.W. (1989). Intravenous regional anaesthesia (Bier block): Review of 20 years' experience. *Canadian Journal of Anaesthesia*, **36**(3): 307–310.

Gupta, N., Sangwan, V. and Anshul. (2024). Penetrating foreign body in the hoof of two buffaloes. *Vet Alumnus*, **46**(2): 44–46

Nkemngu, N.J., Rondeau, B., Dua, A. and Fitzgerald, B.M. (2025). Bier block. In StatPearls. StatPearls Publishing.

Urban-Chmiel, R., Mudroň, P., Abramowicz, B., Kurek, Ł. and Stachura, R. (2024). Lameness in cattle-etiopathogenesis, prevention and treatment. *Animals*, **14**(12): 1836.

Wessels, W., Bokkers, E.A.M., de Boer, I.J.M., Meijer, E., Rodenburg, B., Hostens, M. and Koop, G. (2025). A systematic review and meta-analysis of lameness scoring methods and the prevalence of lameness of dairy cows in Northwest Europe. *Journal of Dairy Science*, **108**(9): 10037–10059.