International Journal of Veterinary Sciences and Animal Husbandry 2024; 9(2): 677-678

ISSN: 2456-2912
VET 2024; 9(2): 677-678

www.veterinarypaper.com
Received: 15-12-2023
Accepted: 19-01-2024

P Sankar
Assistant Professor, Department of Clinics, Veterinary College and Research Institute, Salem, Tamil Nadu, India

M Dharani
Undergraduate Internship Student, Veterinary College and Research Institute, Namakkal, Tamil Nadu, India

S Dharsini
Undergraduate internship student, Veterinary College and Research Institute, Namakkal, Tamil Nadu, India

S Kokila
Assistant Professor, Department of Clinics, Veterinary Clinical Complex, Veterinary College and Research Institute, Namakkal, Tamil Nadu, India

A Kumaresan
Professor, Department of Veterinary Surgery and Radiology, Veterinary College and Research Institute, Namakkal, Tamil Nadu, India

M Vijayakumar
Assistant Professor, Department of Veterinary Surgery and Radiology, Veterinary College and Research Institute, Namakkal, Tamil Nadu, India

S Kathirvel
Professor and Head, The Department of Veterinary Surgery and Radiology, Veterinary College and Research Institute, Namakkal, Tamil Nadu, India

S Dharmaceelan
Professor and Head, Department of Clinics, Veterinary Clinical Complex, Veterinary College and Research Institute, Namakkal, Tamil Nadu, India

Corresponding Author:
M Dharani
Undergraduate Internship Student, Veterinary College and Research Institute, Namakkal, Tamil Nadu, India

Percutaneous Gigli saw transecting technique for medial patellar desmotomy in cows: A report of three cases

P Sankar, M Dharani, S Dharsini, S Kokila, A Kumaresan, M Vijayakumar, S Kathirvel and S Dharmaceelan

Abstract
Three adult crossbred cows had been presented to Veterinary Clinical Complex, Large Animal Surgery unit, with the history of dragging, swinging and jerky movements of right hindlimb while walking with the extension of right hindlimb while lying down. Based on history, clinical signs and palpation of stretched medial patellar ligament, the condition was diagnosed as upward fixation of patella. Medial patellar desmotomy was performed under the percutaneous Gigli saw transecting technique in standing posture in all the three cows. All the three animals showed immediate relief from hindlimb jerks and recovered uneventfully within 3 days of post-surgery without any further complications.

Keywords: Cows, Gigli saw transecting technique, medial patellar desmotomy

Introduction
Upward fixation of patella is the most common surgical problem in Indian cattle. Patellar fixation is one of the main functional disorders of the tibia-femoral- patellar articulation (Stifle joint) in cattle characterized by dislocation of the patella from its regular position (Chandrapuria *et al.,* 2012) [2]. This condition is responsible for considerable economic loss as the lameness affects the working and feed searching ability of the bullocks and cows (Telila and Dugassa, 2022) [6]. The Diagnosis of this condition is mainly based upon anamnesis, clinical signs, local palpation of stifle joint (Chaudhary *et al.,* 2015) [3]. The current case reports were aimed to describe the successful surgical management of the upward fixation of the patella in a closed and new technique by encircling the medial patellar ligament with Gigli saw with greater accuracy. Three adult crossbred cows were presented to Large Animal Surgery unit Veterinary Clinical Complex, with the history of dragging, jerky movements in right hindlimb for about 6 months. On clinical observation, the animals had worn out toes. The condition was diagnosed as chronic luxation of patella. Considering minimal invasiveness, minimal haemorrhage and minimal labour, the percutaneous Gigli saw transacting technique for medial patellar desmotomy was performed in all cases. Gigli saw and Gerlach needle (Fig.4) were used in this technique. As a surgical management, these cases were approached with infiltration of 3ml of 2% lignocaine hydrochloride locally in dimples (small depression) present between middle and medial patellar ligaments and animals were restrained in a standing posture. Blade breakage may occur if an attempt is made to transect the ligament with deep blade incision. So, a small skin nick incision was made superficially in this dimple for easy Gerlach needle manipulation with Bard Parker blade No.11.Gerlach needle was inserted through the skin incision behind the medial patellar ligament and taken out through the opposite side of the skin. Gigli saw was fixed to the eye of Gerlach needle and it was tracked out. Again, Gerlach needle was inserted but in front of medial patellar ligament and taken out through the nick from where Gigli saw wire was already hanging in the opposite side of skin. Free end of Gigli saw wire which was hanging in the medial side was applied to the eye of the Gerlach needle and tracked out. The principle behind this technique is to encircle the medial patellar ligament and to transect the ligament (Sherif, 2017). The encircled medial patellar ligament was sawed until crunching sound was heard with well formation (Fig-2).

Enrofloxacin at the dose rate of 5 mg/kg body weight I/M and meloxicam at the dose rate of 0.5 mg/kg body weight I/M were administered for three postoperative days.

Indications of successful treatment includes sudden relief from jerks, cessation of crunching sound and well formation in the place which was previously occupied by intact medial patellar ligaments. This new technique of medial patellar desmotomy was relatively guarded to perform with minimal labours in standing posture. There weren't any recorded incidence of intra and post-operative complications in all of the treated animals. All the animals regained their normal posture and were able to walk normally immediately after the procedure.

The procedure presented here is a new technique performed with instruments like Gigli saw and the Gerlach needle for medial patellar desmotomy. Open and other closed methods were commonly performed techniques for treatment of upward fixation of patella in large animals. Ultrasound guided medial patellar desmotomy (Andersen and Tnibar, 2016) [1] was more sophisticated and involves performance under general anaesthesia. Complications like bleeding, infection and swelling referred to skin incision and tissue invasion in equines were almost nil in the present technique. Transecting medial patellar ligament using, BP blade may cause intra operative blade breakage which can aggravate the condition. This main limitation was overcome by the percutaneous Gigli saw transecting new technique. This presented technique can be performed with ease in standing restraint in which the ligaments appear taut (Shivaprakash and Usturge, 2004) [5] for precise transection. Other advantages of the presented technique include minimal invasion, minimal haemorrhage, no invasion of the pericapsular fat and joint capsule**.**

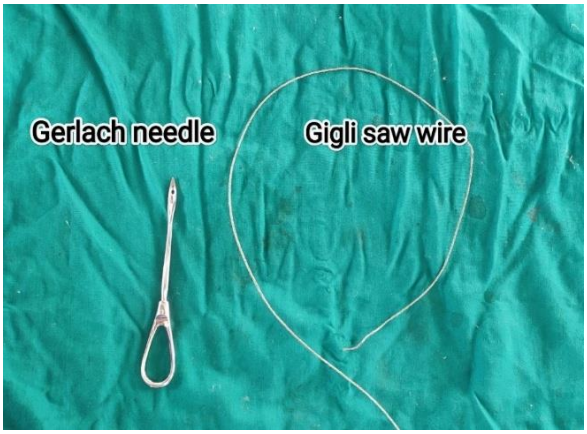

Fig 1: Instruments used for percutaneous Gigli saw transecting technique

Fig 2: Sawing of encircled ligament using Gigli saw

Conclusion

In conclusion, the upward fixation of the patella poses a significant surgical challenge in Indian cattle, impacting their mobility and productivity. This study introduced a novel surgical approach utilizing Gigli saw and Gerlach needle for medial patellar desmotomy, demonstrating successful outcomes in three adult crossbred cows. The technique, performed under local anesthesia in a standing posture, showcased minimal invasiveness and postoperative complications compared to traditional methods. Enrofloxacin and meloxicam administration postoperatively ensured optimal recovery. The absence of intra and post-operative complications, along with immediate restoration of normal gait, underscores the efficacy and safety of this new approach. By overcoming limitations associated with conventional techniques, such as blade breakage and tissue invasion, this method offers a promising alternative for the management of upward fixation of the patella in large animals. Its simplicity, minimal invasiveness, and precise transection make it a valuable addition to veterinary surgical practice, enhancing the welfare and productivity of affected animals while minimizing associated economic losses.

References

1. Andersen C, Tnibar A. Medial patellar Ligament splitting in Horses with upward Fixation of the patella: A Long Term Follow-up. Equine Vet. J. 2016;48:312-314.
2. Chandrapuria V, Bhadauria P, Jadoun Y. Upward fixation of patella and its clinical management in large ruminants, Intas Polivet. 2012;13(2):259-261.
3. Chaudhary GK, Choudhary PK, Prasad R. Surgical management of medial patellar desmototmy in buffalo. Intas Polivet. 2015;13(2):262-263.
4. Sherif ES. New technique for medial patellar desmototmy in cattle and donkeys, J Vet. Med. 2017;7(10):150.
5. Shivaprakash BV, Usturge SM. Observations on upward fixation of patella in cattle and buffaloes: Review of 350 cases. Buffalo Bull. 2004;23:58-63.
6. Telila C, Dugassa J. Surgical treatment of upward fixation of the patella in a multiparous borona breed cow. Case Reports in Veterinary Medicince. Article ID4929020, 2022. https://doi.org/10.1155/2022/4929020.