CASE REPORT

Successful Management of Traumatic-Reticulo-Pericarditis in a Holstein Friesian Cow

Atmakur Venkatesh, Kaliyannan Mohanambal*, Devaraju Sumathi, Ramasamy Ravi, Arasu Rakkiraja, Manivel Elavarasan, Kallipatti Karuppusamy Ponnu Swamy

Ind J Vet Sci and Biotech (2025): 10.48165/ijvsbt.21.2.29

Department of Veterinary Clinical Medicine, Veterinary College and Research Institute, Tamil Nadu Veterinary and Animal Sciences University, Namakkal-637 002, India

***corresponding Author:** Kaliyannan Mohanambal, Department of Veterinary Clinical Medicine, Veterinary College and Research Institute, Tamil Nadu Veterinary and Animal Sciences University, Namakkal-637 002, India , e-mail: mohanambalmvsc@gmail.com

How to cite this article: Venkatesh, A., Mohanambal, K., Sumathi, D., Ravi, R., Rakkiraja, A., Elavarasan, M., & Ponnu Swamy, K. K. (2025). Successful Management of Traumatic-Reticulo-Pericarditis in a Holstein Friesian Cow. Ind J Vet Sci and Biotech, 21(2),131-133.

Source of support: Nil

Conflict of interest: None.

Submitted 04/11/2024 **Accepted** 23/12/2024 **Published** 10/03/2025

Pericarditis refers to inflammation of the pericardium, often accompanied by the accumulation of serous or fibrinous inflammatory substances. In cattle, it is almost exclusively caused by a foreign object from the reticulum penetrating the reticular wall, diaphragm, and pericardial sac. Key signs of pericarditis include tachycardia, muffled heart sounds, abnormal and asynchronous heart sounds, distended jugular veins, and edema in the submandibular region, brisket, and ventral abdomen Braun, 2009. Ultrasonography is the preferred method for diagnosing and characterizing pericardial effusion. Echogenic deposits and fibrin strands are visible on the epicardium, and the ventricles appear compressed by the effusion. Severe pleural effusion is typically observed as well. In cattle presenting with jugular vein distension and tachycardia, this diagnostic approach is particularly valuable (Mohanambal *et al.*, 2018). In this present case, pericardiocentesis along with conservative treatment helped for the successful recovery of the animal.

Case History and Observations

A 6 year old Holstein Friesian cow was referred to the Large Animal Medicine Unit, Veterinary Clinical Complex, VCRI, Namakkal (India) with the history of anorexia from past five days and reluctant to move. Clinical examination of animal revealed dull, depressed and edematous swelling of brisket region and bilateral engorgement of jugular vein with positive venous stasis (Fig. 1). Physical examination revealed muffled heart sound and suspended rumen activity. Haematobiochemical examination revealed neutrophilia and leucocytosis. Ultrasound examination showed pericardial fluid accumulation around the heart and along with strands (Fig. 2, 3). Ultrasound guided pericardiocentesis performed at 4th intercostal space confirmed the traumatic-reticulo-pericarditis.

Treatment and Discussion

Ultrasound guided pericardiocentesis was performed at 4th intercostal space, and approximately 8 L of serosanguinous fluid was drained (Fig. 4). Pericardial site was flushed with Normal saline and Metronidazole 500 mL for 3 days (Fig. 5). Inj. Streptopencillin 5 gm, I/M, Ringers lactate 2 Lit, I/V, Inj. Tribivet 30 mL, I/V were administered for three days. Following the theraphy accumulation around heart was reduced, animal was showing improvement and started taking feed material (Fig. 6). Repeat USG revealed reduced fluid accumulation. After complete recovery thoracic catheter was removed and the skin was closed by silk. The cow made an uneventful recovery.

Cattle are at a higher risk of developing traumatic reticuloperitonitis or traumatic pericarditis compared to small ruminants due to their nature of prehension (Braun, 2003). Basic physical examination and procedures such as inspection, palpation, percussion, and auscultation are crucial and must be performed mandatorily in all cases. They offer a preliminary diagnosis of digestive diseases in ruminants (Radostits *et al.*, 1994). Ultrasound-guided percutaneous pericardiocentesis and drainage have been documented in numerous cases of cows with traumatic pericarditis (Mohanambal *et al.*, 2018; Venkatesan *et al.*, 2019).

Under ultrasound guidance, percutaneous pericardiocentesis is being done using 18G needle at 4th or 5th intercostal space (Sasikala *et al.*, 2018). The absence of feeding habits increases the likelihood of foreign body syndrome. Foreign bodies, once ingested, can penetrate the peritoneum or pericardium due to ruminoreticular contractions. These occurrences are heightened in pregnant animals, as the

progression of pregnancy leads to elevated intra-abdominal pressure, pushing foreign bodies toward the thorax (Bexiga *et al*., 2008). Depending on the direction of the foreign body, it may result in either peritonitis or pericarditis (Krishnamurthy *et al*., 1998). Ultrasound facilitated the advancement of palliative medical treatment for cows suffering from traumatic pericarditis by enabling the precise placement of indwelling catheters under ultrasound guidance. These catheters were secured in the cows, and pericardial sac lavage was performed using normal saline. Administration of metronidazole into the pericardial sac was beneficial for cows with traumatic pericarditis, leading to subsequent decreases in effusion levels and simultaneous enhancement in the quality of life for affected cows.

In brief, drainage and flushing of pericardial sac by placing indwelling cathter provided satisfactory relief in an HF crossbred cow is placed on record.

Fig. 1: Holstein Friesian cow with jugular vein distension

Fig. 2: Pericardial fluid accumulation with fibrin strands (Day 1).

Fig.3: Decreased pericardial fluid accumulation (Day 2).

Fig. 4: Pericardiocentesis performed at 5th intercostal space

Fig. 5: Thoracic catheter placed at 5th intercostal space

Fig. 6: Recovered cow, Feeding normally

Acknowledgement

Authors thank the Dean, Veterinary College and Research Institute, Namakkal and Head of Veterinary Clinical Complex for the facilities given during the study period.

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