

## Short Communication

# Thoraco-pericardiotomy in two bovines under field condition

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## Abstract

The present paper deals with two typical cases of traumatic pericarditis, in a cross-bred pregnant cow and a bullock. The patients had a history of brisket edema, anorexia, and wasting condition for a period of 15 days. The physical and clinical examination for both cases revealed jugular pulsation, marked edema of brisket extending back up to udder, rise in rectal temp., heart rate and respiratory rate with muffled cardiac sounds audible over a wide area in chest. Based on the history and clinical examination data the cases were diagnosed as traumatic pericarditis. Thoraco-pericardiotomy was performed through resection of left fifth rib under sedation with xylazine and local infiltration anesthesia. Small quantity of fluid from thoracic cavity was removed; however, the foreign body was not detected. The thoracotomy wound was closed in routine manner. Post operatively both animals were given parenteral antibiotic and wound dressing was carried out. The skin sutures were removed on 10<sup>th</sup> post operative day. Both the cases survived and recovered well within a period of one month. The pregnant cow delivered and was yielding 10 liters of milk daily.

Keywords: Thoraco-pericardiotomy, Traumatic pericarditis, Bovine,

## Introduction

Traumatic pericarditis develops as a consequence of perforation of pericardial sac by a sharp foreign body with the development of toxemia and congestive heart failure. Tachycardia, fever, engorgement of jugular veins, anasarca, hydrothorax and ascites and abnormalities of heart sounds are the diagnostic features of the disease (Radostits et al (2000)). However, the treatment is unsatisfactory and most of the affected animals die within a period of 1-2 weeks. (Radostits et al (2000)).

Thoraco – pericardiotomy is performed in suspected cases of traumatic pericarditis (Frank, 1981). The recommended surgical procedure is resection of fifth rib on left chest wall. The pericardial sac is distended with variable quantity of purulent exudates varying from one or more liters that should be removed. Most of the cases of traumatic pericarditis die because of pathological changes that have occurred in the vital organs (Frank, 1981). Krishnamurthy et al (1979) performed thoraco--pericardiotomy in 9 cattle of traumatic pericarditis with successful recovery in five cases. The present paper deals with two typical cases of traumatic pericarditis and its successful treatment by thoraco-pericardiotomy.

### **Case Reports**

**Case I:** A crossbred pregnant cow aged between 8-9 years was presented from the nearby village close to Mekelle town with a chief complaint of anorexia, drop in milk yield and swelling at brisket region since 15 days. The clinical examination of the cow showed a profound edema of dewlap extending from neck up to udder (Figure 1). The cow was in run down condition and pregnant. Auscultation of trachea and lungs showed grunt sound indicative of pain. Both jugular veins were prominent. The rectal temperature was 39.5C; respiration 28/minute and heart rate 108/minute. Auscultation of heart revealed muffled sound over a wide area of chest on left side. The heart rates were audible on auscultation on right side of chest also. The rumen motility was reduced.



Figure 1: A nine year old crossbred cow having traumatic pericarditis with brisket edema extending up to udder. Mark the prominent jugular vein.

**Case II:** A local breed bullock aged between 6-7 years was presented from nearby village close to Mekelle town with a complaint of anorexia and swelling between forelimbs since 15 days. The clinical examination of the bullock showed a marked dewlap edema, prominent jugular pulse and anorexia with reduced rumen motility (Figure 2). The rectal temperature was 40.0 C, heart rate 92/minute and respiration 26/minute. The cardiac sound were muffled and heard over a wide area on left as well as right side of chest. However the bullock was much aggressive.



Figure 2: A seven year old bullock having traumatic pericarditis. Note extensive dewlap edema.

**Diagnosis of case I and case II:** Based on the history and typical clinical signs like dewlap edema, prominent jugular pulse, increase in heart rate, muffled heart sounds over a wide area and grunt a tentative diagnosis of traumatic pericarditis was made for both the cases and a treatment regime of antibiotic with diuretic was started parenterally.

It was advised for the owners to undergo thoraco-pericardiotomy operation for both the animals. Since there was a great risk of collapse of lungs on opening of thoracic cavity and operation on heart may stop the heart, the owners of both the animals were informed about the consequence of operation. However, both the owners readily consented for operation. Therefore a decision to perform thoraco-pericardiotomy was taken and the patients were prepared accordingly. The operation was performed at the farmer's door under field condition.

**Treatment for case I and case II:** The animals were prepared for surgery. The area over fifth rib starting from xiphi-sternum up to 20 inches dorsally was shaved, cleansed and washed with Savlon and painted with Tr. iodine. The animals were sedated with xylazine hydrochloride @ 0.3 mg/kg body weight by intramuscular route. Local anesthetic solution was infiltrated on the fifth rib

and intercostal muscles. A skin incision starting from xiphisternum up dorsally for a distance of 10 inches was taken on fifth rib. The underlying muscles were incised and the rib was exposed. The periosteum over the rib was dissected out. The rib was then cut with obstetrical wire saw and disarticulated at costo-chondral junction. The underlying pleura was exposed. The pleura was then cut with scissor and the thoracic cavity opened. After opening the thoracic cavity it was observed that the heart was enlarged than its normal size (Figure 3). There were lot of adhesions between the pericardium and pleura, lungs and diaphragm. A small incision on pericardium was given. However, the pericardial sac didn't contain any fluid. About 200 ml quantity of fluid was removed from thoracic cavity. Then a careful search was made to find out the foreign body if any, embedded in the pericardial sac or between the adhesions and surrounding the heart. The adhesions were carefully separated out with blunt dissection making free movement of heart. However, no foreign body was located anywhere in the tissue. Therefore the wound was closed suturing pleura, periosteum and muscles separately with chromic catgut after instilling sufficient quantity of antibiotic solution in the thoracic cavity. The overlying skin was sutured with nylon sutures. The animals were standing immediately after the operation.

Post operatively antibiotics were administered parenterally for a period of five days and the wound was dressed with antibiotic ointment. The skin sutures were removed on 10<sup>th</sup> post operative day.

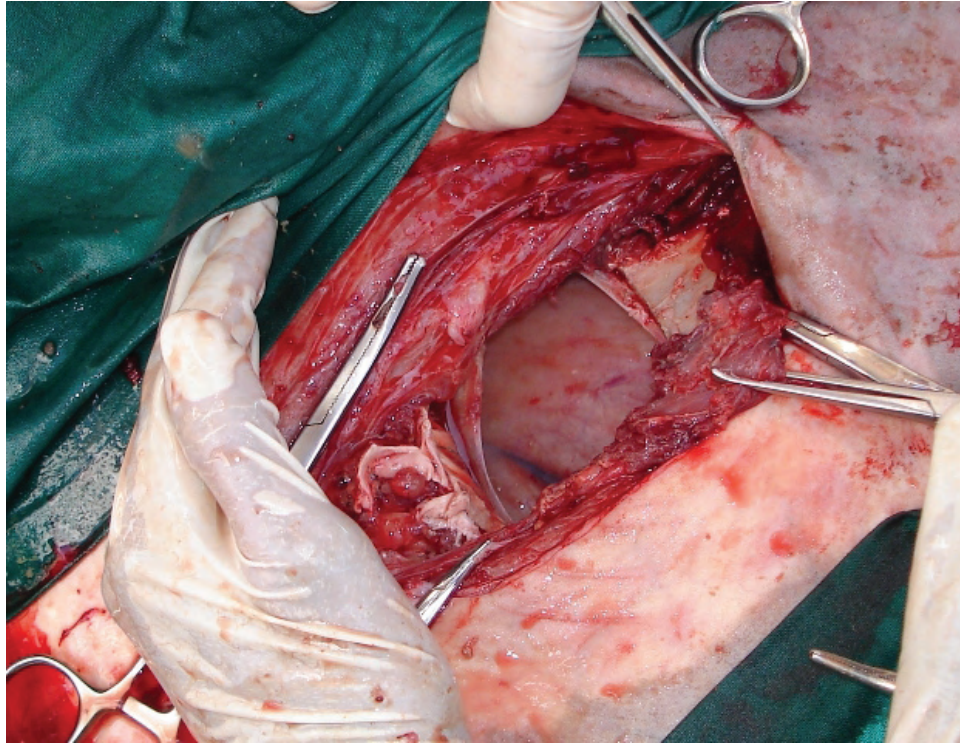


Figure 3: Resection of left fifth rib and thoracotomy incision showing heart in the cow.

### Results and discussion:

Both the animals made an uneventful recovery after surgery. The rectal temperature became normal on fifth day and the ruminal motility returned slowly to normal after seventh day. However, the heart rate remained increased up to 15<sup>th</sup> post operative day and then stabilized to normal. The wound healed without any complication and the sutures were removed by 10<sup>th</sup> day. The dewlap edema took 15-20 day to subside. Post operative follow up of both the animals was made. Both animals made an uneventful recovery and were in normal health after a period of one month (Figure 4). The pregnant cow delivered normally after 3 months period of full gestation and was yielding about 10-12 liters of milk daily.



Figure 4: The crossbred cow after a month of removal of sutures. Note the disappearance of brisket edema and prominent jugular vein.

Both the cases of traumatic pericarditis were diagnosed by the typical symptoms of brisket edema, abnormalities of heart sound, jugular pulsation and pain symptoms and confirm with the findings of others (Ramakrishna et al 1983, Ramakrishna, 1994 and Radostits et al, 1998). Several authors (Krishnamurthy et al. 1979, Ramakrishna et al. 1983 and Usturge and Bhokre (1990) have opined that thoraco-pericardiotomy is the only treatment of traumatic pericarditis. But Radostits et al, (2000) and Frank, (1981) have expressed doubt over the outcome of operation. The present two cases were operated under perfect field condition at farmers' door without much facility like operation theatre and sterile environment. However the outcome of the both the operation was encouraging. This may be the first example of such kind of operation performed in all adverse conditions in Ethiopia. Since owners of both the animals had given consent for the operation it was possible to save the life of animal and/or the birth of calf. Frank (1981) also stated that the operation may be performed if the owner requests to save the life of animal. Therefore we feel that every attempt should be made to save the life of animal by the veterinarian while dealing with such kind of cases.

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