



Successful management of unusual case of goat horn-induced traumatic peritonitis in a cattle calf

Syed Ashaq Hussain

Division of Clinical Veterinary Medicine, Ethics and Jurisprudence, Faculty of Veterinary Sciences and Animal Husbandry, Sher-e-Kashmir University of Agricultural Science and Technology of Kashmir-Shuhama, Alusteng, Srinagar-190 006, Jammu and Kashmir (India)

*e-mail: draashiqhussain@gmail.com

(Received July 18, 2023; accepted September 25, 2023)

ABSTRACT

The present study describes the diagnosis and management of unusual case of traumatic peritonitis in a six month old calf due to goat horn injury. The calf had been ill from 10 days. The vital parameters were altered except mucous membrane color. Rumen motility was reduced. There was bilateral abdominal distension and fecal output was scant. The peritoneal fluid changes were consistent with peritonitis for cattle. The calf was managed with systemic antibiotic and anti-inflammatory drug along with fluid therapy. The calf showed uneventful recovery after 6 days.

Key words: Abdominocentesis, cattle, diagnosis, peritonitis

Despite the frequency with which peritonitis is included in a list of differential diagnoses, it remains a very frustrating disease for all food animal clinicians. Peritonitis is an inflammatory process involving the peritoneal cavity and its serosal surface, the peritoneum (Fecteau 2015). The inflammation may result from trauma, surgery, or vascular damage associated with an intestinal obstruction and /or accident or from gastro intestinal ulceration (Radostits *et al.*, 2007). Peritonitis is a serious and complex process that is often accompanied by various degrees of abdominal pain, progressive signs of hypovolemia and septicemia, and/or endotoxemia (Fecteau 2015). Ingested foreign bodies resulting into traumatic reticuloperitonitis (TRP) is the common cause of peritonitis in cattle (Francoz and Guard 2015).

Peritonitis may be classified according to the clinical presentation and/ or the cause. Clinically relevant classifications include acute versus chronic, septic versus chemical, localized versus generalized and primary verses secondary. Although it is useful to classify types of peritonitis, it is imperative to recognize that it is a dynamic process. An apparently localized non-septic peritonitis can evolve toward a more diffuse septic process if the primary cause is not resolved. Clinical signs of peritonitis are often nonspecific but suggestive of gastrointestinal dysfunction (Fecteau 2015). Severity of clinical signs ranges from mild recurrent discomfort caused by a localized abscess to an acute severe onset of toxemia and hypovolemia leading rapidly to death after the sudden rupture of a viscus (Radostits *et al.*, 2007). Cattle suffering from acute peritonitis tend to show more characteristic signs. As the condition becomes less acute, the ability of the bovine to seal the infection will attenuate the clinical signs (Radostits *et al.*, 2007; Francoz and Guard 2015). Traumatic reticuloperitonitis has been reported from our area (Hussain *et al.*, 2021a) and 35 cases of TRP were reported during a one year study on adult cattle (Dar 2023). The present report describes an unusual case of traumatic peritonitis in a calf.

Case History, Diagnosis and Management: A six month old Jersey cross-bred calf having inappetence from 10 days was presented for evaluation of abdominal distension and scanty defecation. The calf had bilateral abdominal distension from 4 days. The calf had been treated with different rumenototics and antibloat drugs but without any successful outcome.

On clinical examination the calf was slightly dull, dehydrated and had bilateral abdominal distension (Fig. 1). The vital parameters (temperature 97.2°F, heart rate 98/min, respiration rate 34/min) were altered. The mucous membranes were of normal color. The rumen motility was 1/2 minutes and rumen consistency was altered. There were crepitations on palpation of rumen motility which is very unusual recording in cattle. Examination of ruminal area revealed injury mark on dorsal quadrant of left paralumbar fossa (Fig. 1). On further inquiry, the owner revealed that the calf had a penetrating wound in that area from a male goats' horn (about 13 days back). The wound had healed over the time but the animal had developed signs of inappetance. The crepitations gave an indication of gas in the peritoneal cavity over the left paralumbar fossa. The chances of leakage of rumen gas were minimal because that would have resulted into bilateral pneumoperitonium during the course of the disease. The pneumoperitonium is characterised by bilateral ping on physical examination, but in present case no such ping sounds could be heard. Abdominocentesis at the recommended sites in cattle (Radostits *et al.*, 2007) did not reveal any peritoneal fluid. However, paracentesis in the left caudo-ventral abdominal wall medial to the fold of flank revealed yellow color turbid peritoneal fluid (about 12 ml). The collection of peritoneal fluid from this site is very unusual in cattle and we are of the opinion that during practice, sometimes the animal with suspected peritonitis may not yield peritoneal



Fig. 1: Photograph showing bilateral abdominal distension in the calf. The encircled area is the injury mark

fluid from the sites described in text books, then the fluid may be collected from the accessible and suspected site (Hussain *et al.*, 2021b). Specific gravity (1.030) and total protein (4g/dl) concentration of peritoneal fluid measured by refractometer were high. The physical characteristics and other parameters of peritoneal fluid changes were consistent with peritonitis for cattle (Hussain *et al.*, 2022). It is reported that paracentesis rules out gross peritonitis but many false negatives are possible as a result of focal or fibrinous peritonitis (Fecteau 2015).

The bilateral abdominal distension was ascribed to ruminal stasis as a result of inhibitory effect of peritonitis on reticulo-rumen motility. Hypocalcemia and peritonitis are reported to be important examples of disorders that result in weak or absent ruminal contractions (Fecteau 2015). Gastrointestinal stasis in peritonitis is also reported to cause hypocalcemia (Hussain and Uppal 2014). We believe that the on farm treatment for the wound could have played a role in localization of the inflammation but could not completely eliminate the inflammation. It is suggested that chronic cases do not show the typical signs of TRP and diagnosis may therefore not be straight forward. Similar to present case, abdominal distension, scanty feces and ruminal hypomotility has been recorded in cattle and buffaloes with peritonitis (Hussain and Uppal 2014; Hussain *et al.*, 2022).

The calf was treated with intravenous administration of normal saline (@20 ml/Kg body weight for 3 days), one dose of intravenous calcium therapy (60ml of MIFEX, Novartis India Limited, India), ampicillin (20mg/kg twice daily for 5 days), Meloxicam (0.5mg/kg once daily for 3 days) and 4 ml intramuscular injection of belamyl (B complex liver extract with vitamin B12 injection, Zydus AH, India) for 5 days. Follow-up information was obtained from the owner by telephonic conversation. The calf passed voluminous feces on second day and there after the abdominal distension reduced. Appetite improved from the third and complete recovery was recorded after 6 days. The treatment of peritonitis involves stabilization of animal with supportive therapy combined with the use of antimicrobials. The treatment aimed to contain the infection is the use of antimicrobials, and synthetic penicillins have been reported to be good choices in peritonitis (Fecteau 2005; Hussain *et al.*, 2022). Meloxicam was administered to prevent the synthesis of more inflammatory mediators and help pain management. Liver tonic was administered on daily basis because the liver function has been reported to be altered in bovine peritonitis (Hussain and Uppal 2014; Hussain *et al.*, 2022).

Paracentesis of abdomen and subsequent examination of peritoneal fluid was an important diagnostic modality in the present case. It is a fact that this modality already exist in the literature. However abdominocentesis is rarely practiced in veterinary colleges of India for diagnosis of peritonitis in cattle and buffaloes. So we suggest that abdominocentesis should be performed routinely for effective diagnosis of peritonitis in cattle.

REFERENCES

- Fecteau, G. 2005. Management of peritonitis in cattle. *Veterinary Clinics Food Animal Practice*, **21**: 155-171.
- Fecteau, G. 2015. Peritonitis in the Ruminant. In: Smith BP, editor. Large Animal Internal Medicine. St. Louis: Elsevier Mosby. pp. 805-807.
- Francoz, D. and Guard, C. L. 2015. Traumatic reticuloperitonitis (hardware disease, traumatic reticulitis). In: Smith BP, editor. Large Animal Internal Medicine. St. Louis: Elsevier Mosby. pp. 805-807.
- Hussain, S.A. and Uppal, S.K. 2014. Haemato-biochemical changes and peritoneal fluid cytology in clinical cases of bovine peritonitis. *Indian Journal of Animal Research*, **48**: 188-193.
- Hussain, S.A., Athar, H., Ahmed, R.A. and Akhoun, Z.A. 2021a. The use of abdominocentesis, radiography and ultrasonography for the diagnosis of unusual case of chronic localized traumatic reticuloperitonitis in a cow. *SKUAST Journal of Research*, **23**: 93-94.
- Hussain, S.A., Uppal, S.K., Sood, N.K. and Bhat R.R. 2021b. Peritoneal Fluid Examination: A Potential Tool for the Diagnosis of Bovine Diseases. In: Sreedhar S and Bindumadhuri S. Current Research in Animal Husbandry and Veterinary Sciences (Volume - 3). Integrated Publications, Delhi, India. Page 1-17.
- Hussain, S.A., Uppal, S.K., Sood, N.K., Randhawa, C.S. and Mahajan, S.K. 2022. Clinico-biochemical parameters, treatment, and prognostic indicators of peritonitis in buffaloes. *Journal of Buffalo Science* **11**:52-65.
- Radostits, O.M., Gray, C. C., Hinchcliff, K.W. and Constable, P.D. 2007. Diseases of alimentary tract-II. A Textbook of the diseases of cattle, sheep, pigs, goats and horses, 10th Edn. WB Saunders Company Ltd. pp. 352-53.