SUCCESSFUL MEDICAL MANAGEMENT OF RETICULAR ABSCESS IN A CALF

M. Naveena[1], T. Ramasamy*[2], C. S. Arunaman[3], K. S. Sriraam[4], B. Anurag[5] and M. R. Srinivasan[6]

Department of Veterinary Pharmacology and Toxicology
Madras Veterinary College
Tamil Nadu Veterinary and Animal Sciences University
Chennai, Tamil Nadu, India

ABSTRACT

A seven - month old female Kankrej calf was presented to Large Animal Clinics - Out-Patient - Medicine Unit of Madras Veterinary College Teaching Hospital, Chennai, with the history of recurrent tympany for two months with scanty dung with a pasty consistency. On clinical examination of the animal, bilateral distension of the abdomen was noticed. Haemato-biochemistry revealed neutrophilia with leucocytosis and significantly elevated Gamma-Glutamyl-Transferase values. In radiography, no change in the silhouette of reticulum could be appreciated other than a mild bronchial pattern. Ultrasonography revealed an anechoic encapsulated cavity with echogenic internal spots of the reticular wall. Based on these findings, the calf was diagnosed with an abscess in the reticulum. Accordingly, the abscess was drained and the animal was treated with antibiotics and supportive therapy and the animal recovered uneventfully.

Key Words: ABST, Recurrent tympany, Reticular abscess, Ultrasonography.

Reticular abscess in bovines is a frequent complication of traumatic reticuloperitonitis/ foreign body syndrome (Athar *et al*., 2010). Ingestion of indigestible foreign materials by cattle and buffaloes is a common problem worldwide, known as foreign body syndrome (FBS) (Aref and Abdel-Hakiem, 2013). The symptoms usually include anorexia, decreased milk production, fever, ruminal atony, tympany, abdominal pain, arched back and tense abdomen (Braun *et al.,* 2018).

Owing to the broad range of symptoms that such a case presents, it is always difficult to arrive at a diagnosis based on the clinical symptoms alone. Tests for reticular foreign bodies may elicit a grunt, although other painful disorders of the thorax and abdomen may stimulate the same reaction (Dirksen *et al*., 2002; Henniger and Mullowney, 1984). There have been cases of diaphragmatic hernia reported in buffaloes attributed to progression of reticular abscess (Krishnamurthy *et al*., 1985; Saini *et al*., 2000). This article describes the successful

* Corresponding author; Email id: drrams19@gmail.com
[1] BVSc student
[2] Assistant Professor
[3] Assistant Professor, Department of Clinics
[4] MVSc Scholar
[5] PhD Scholar
[6] Assistant Professor

medical treatment of reticular abscess in a calf based on Antibiotic Sensitivity Test (ABST) result.

Case History, Clinical Findings and Diagnosis

A seven - month old female Kankrej calf was presented to Large Animal Clinics - Out Patient - Medicine Unit of Madras Veterinary College Teaching Hospital, Chennai, with the history of recurrent tympany for the past two months voiding scanty amounts of dung having pasty consistency.

On clinical examination of the animal, bilateral distension of the abdomen was noticed (Fig. 1). Blood was collected for the hematology and serum biochemistry profile before and after treatment. Haemato-biochemistry revealed neutrophilia with leukocytosis (Table 1) and significantly elevated Gamma-Glutamyl-Transferase values (Table 2) and radiography and ultrasonography were done. Radiography revealed a mild bronchial pattern. Ultrasonography revealed anechoic encapsulated cavity with echogenic internal spots of the reticular wall (Fig. 2). Thus, based on the history of recurrent tympany, hematologic, ultrasonography, the condition was diagnosed as abscessation of the reticulum. The abscess was aseptically punctured and drained using a sterile 18G needle and the pus drained was sent for isolation of organisms with selective media MSA & EMBA followed by antibacterial sensitivity test using discs purchased from Himedia. Culture of the pus with selective media showed growth on Mannitol Salt Agar with morphological characteristic of *Staphylococcus aureus* (Fig. 3). The antimicrobial sensitivity testing revealed sensitivity to gentamicin & enrofloxacin as shown in Fig. 4.

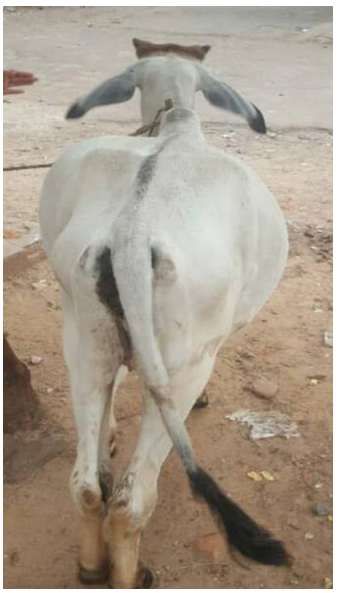

Fig. 1: The animal before treatment with bilateral distension of abdomen

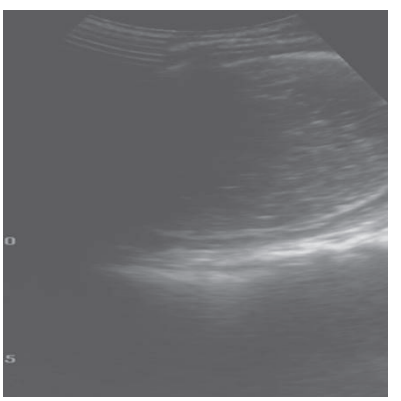

Fig. 2. Ultrasonography revealed anechoic encapsulated cavity in the reticular wall

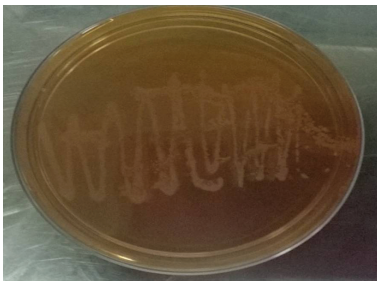

Fig. 3. Bacterial culture of the p urulent material revealing growth in MSA

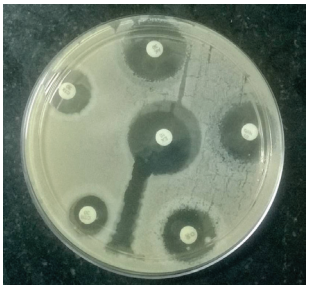

Fig 4. Antimicrobial sensitivity test revealing sensitivity to entrofloxacin and gentamicin

Table 1: Complete hematology of calf before and after treatment

Sl. No	Parameters	Day '0'	Day 3 of treatment
1	Hb	10.3g/dl	11.5 g/dl
2	PCV	24%	33.3%
3	RBC	4.24 m/cmm	5.24 m/cmm
4	WBC	27,700/cmm	11,000/cmm
5	Platelets	1,88,000/cmm	5,76,000/cmm
6	Blood Parasites	Negative	Negative
7	Neutrophils	80%	40%
8	Lymphocytes	15%	55%
9	Monocytes	5%	5%
10	Eosinophils	-	-
11	Basophils	-	-

Table 2: Serum biochemical profile of calf before and after treatment

Sl. No	Parameters	Day '0'	Day 3 of treatment
1	Glucose	56 mg/dl	47 mg/dl
2	AST	86 IU/L	101 IU/L
3	ALP	332 IU/L	427 IU/L
4	GGT	**23 IU/L**	7.1 IU/L
5	Total Protein	6.8 g/dl	7.1 g/dl
6	Albumin	3.1 g/dl	3.5 g/dl
7	Direct bilirubin	0.36 mg/dl	0.34 mg/dl
8	Total bilirubin	0.4 mg/dl	0.05 mg/dl

Treatment

The abscess was aseptically punctured using a sterile needle and around 850 ml of purulent pus was drained. The animal was treated with gentamicin @ 4mg/ kg IM and enrofloxacin @ 2.5mg/ kg IM for 3 days as per the sensitivity pattern of antimicrobial

testing along with anti-inflammatory (Inj. Meloxicam @ 0.3mg/ kg, IM) and fluid therapy (Inj. Ringers Lactate @20ml/ kg, IV).

There was significant improvement in the clinical blood and serum profile following antibiotic treatment (Table 1 & 2). Ultrasonographic examination revealed significant reduction of abscess size (Fig. 5) and overall physical parameters were observed to be closer to normal on day 3 of treatment following which the animal made a gradual uneventful recovery (Fig. 6).

Fig 5. Ultrasonographic examination revealed significant reduction of abscess size on the day 2 of post treatment

Fig 6. The animal on day 3 post treatment

Discussion

A seven - month old female Kankrej calf was presented with the history of passage of recurrent tympany and scanty amounts of dung having pasty consistency. Similar history was reported previously by Athar *et al.,* (2010) in an animal after 7 years. In reticular abscess, presence of tympany may be attributed to failure of eructation of gases which stimulate the ruminal motility (Kumar, 2006). Neutrophilia with leucocytosis were observed in current study and El-Sebaie *et al.,* (1999) also reported leukocytosis with neutrophilia which might be due to the inflammatory condition. Radiography revealed a mild bronchial pattern and presence of abnormal gas pockets were indicative of reticular abscess (Chander *et al.,* 1997). However, radiography was not considered as a reliable tool for diagnosis of reticular abscess (Kumar *et al.,* 2008). Ultrasonography revealed anechoic encapsulated cavity with echogenic internal spots of the reticular wall and similar features of reticular abscess have been reported by Udehiya, (2007) and Kumar, (2006). In the present study ABST result showed that gentamicin and enrofloxacin were more sensitive than the other antibacterials and Athar *et al.*, (2010) noted high sensitivity to ceftriaxone followed by enrofloxacin and gentamicin in the study. This difference may be due the regional variability in antibiotic sensitivity and age of animal. The overall physical parameters observed were closer to normal on day 5 of treatment following which the animal made a gradual uneventful recovery and a similar recovery of the bovine reticular abscess was also reported by Saini *et al.,* (2005).

Conclusion

A clinical case of reticular abscess in a calf which was successfully treated by aseptic puncture and drainage along with specific antibiotic therapy is described.

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