

MEDICAL MANAGEMENT OF THEILERIOSIS WITH ABOMASAL IMPACTION IN A CALF

Prasanth CR¹ and Ajithkumar S²

¹Resident P.G Scholar, Dept. of Veterinary Clinical Medicine, Ethics and Jurisprudence

²Professor and Head, University Veterinary Hospital and Teaching Veterinary
Clinical Complex

College of Veterinary and Animal Sciences, Mannuthy, Thrissur, Kerala, India

Kerala Veterinary and Animal Sciences University, Pin: 680651

E-mail: prasanth.chavara@gmail.com

Abstract: A 3 months old female crossbred calf was presented to the hospital with severe regurgitation of rumen contents with reduced feed intake. Animal was not voiding any faeces. History denoted that the animal was regularly fed with concentrate feed of adults. Animal was showing grinding of teeth. Physical examination revealed highly elevated body temperature with moderately enlarged superficial lymph nodes and impacted of abomasum. A wheezing sound suggestive of pulmonary oedema could be heard upon lung auscultation and reticular sound heard was of short duration with absence of the normal fluid pouring sound. Haematological findings revealed leucopenia and slightly reduced blood haemoglobin level. Peripheral blood smear examination revealed rod shaped piroplasms suggestive of *Theileria orientalis* and confirmed with PCR. Treatment was initiated with intramuscular injection of buparvaquone @2.5 mg/kg body weight, Vit. AD₃E injection (Vetade) and intravenous injection of 25% calcium borogluconate (Calborol). Animal was again presented 2 days after to the hospital with sunken eyeballs, impacted abomasum and persisting regurgitation. Peripheral blood smear examination was again carried out and was found to be negative for any haemoparasites. Animal was started treatment with Oxytetracycline injection @ 10 mg/kg body weight intravenously and metoclopramide injection @ 0.2 mg/kg body weight intramuscularly for five days. Fluid therapy was done with intravenous injection of 5% dextrose normal saline and Ringer lactate @20 ml/kg body weight. Oral therapy of neostigmine tablet @0.02 mg/kg body weight and sucralfate suspension 20 ml bid were given for five days. Animal was started taking feed and water without any regurgitation after two days of treatment and made a complete recovery after five days.

Keywords: Buparvaquone, regurgitation, Theileriosis, regurgitation, impaction.

Introduction

Theileria orientalis, responsible for oriental theileriosis, was previously considered to be a milder disease (Radostitis *et al.* 2009) but some strains of the parasite can result in a disease condition similar to East Cost Fever. Recently, outbreaks of theileriosis due to these organisms resulting in haemolytic anaemia and death are increasingly reported from various parts of the world (Kamau *et al.* 2011).

Ticks of the genus *Haemaphysalis* are responsible in the transmission of Oriental theileriosis in Asia (Uilenberg *et al.* 1985) and piroplasms of *Theileria orientalis* in red blood cells occur as rod shaped form (Soulsby, 1982). The infective sporozoite stage of the parasite is transmitted in the saliva of infected ticks as they feed. Sporozoites invade leukocytes and develop into schizonts. *Theileria* organism causes the host WBC to divide and at each cell division, the parasite also divides. Thus, the parasitized cell population expands and becomes disseminated throughout the lymphoid system via migration. Later in the infection, some of the schizonts undergo merogony, releasing merozoites that infect RBCs, giving rise to piroplasms. Uptake of piroplasm-infected RBCs by vector ticks while feeding on infected animals and the cycle continues in the next animal.

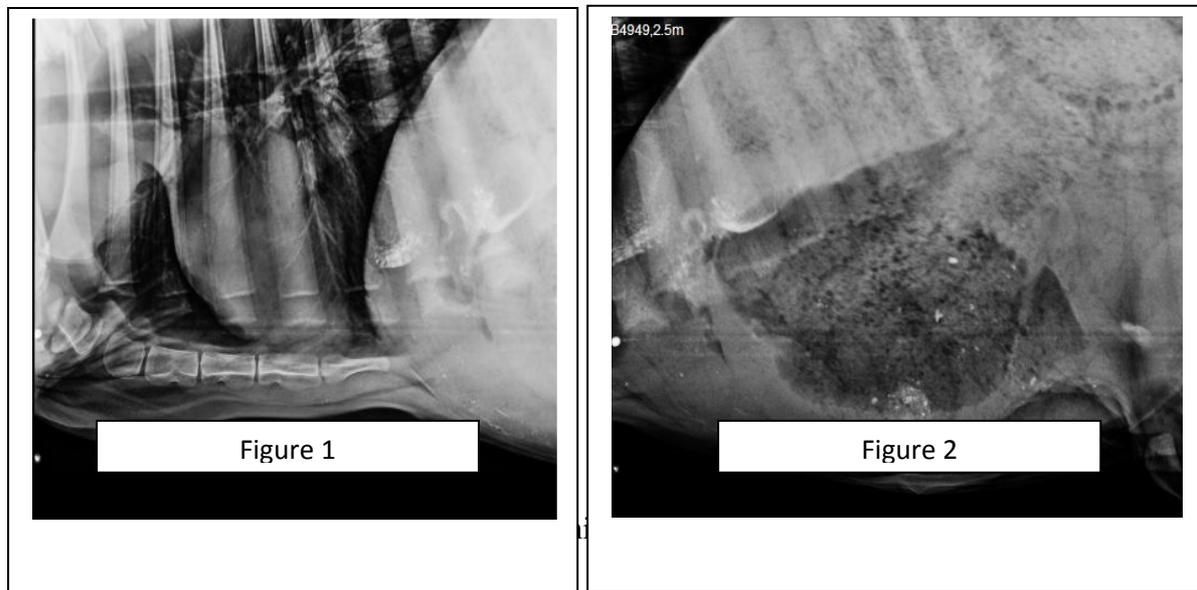
In *Theileria orientalis* infection lymph node enlargement may not be seen commonly (Aparna *et al.*, 2011). Fever initiated and continues throughout the course and may reach to 106°F (42°C). There is marked petechial and ecchymotic haemorrhage on the conjunctival and buccal mucosa. Frothy exudates are frequently seen around the nostrils of infected animals. Signs of diarrhoea, emaciation, and dehydration may be seen. The post mortem lesions included splenomegaly, massive pulmonary oedema, frothy exudates in trachea, ecchymotic epicardial and diffused endocardial haemorrhage and severe haemorrhagic duodenitis. Abomasal mucosa showed pathognomonic 'punched-out' ulcers.

Abomasitis that can lead to abomasal atony and impaction. Clinical findings for the abomasal impaction includes anorexia, moderate abdominal distension, weight loss, scant faeces, recumbent, or abomasum palpable through the abdominal wall or rectally. As a result, metabolic alkalosis, hypochloremia, hypokalemia, and dehydration will result. (Radostitis *et al.* 2009).

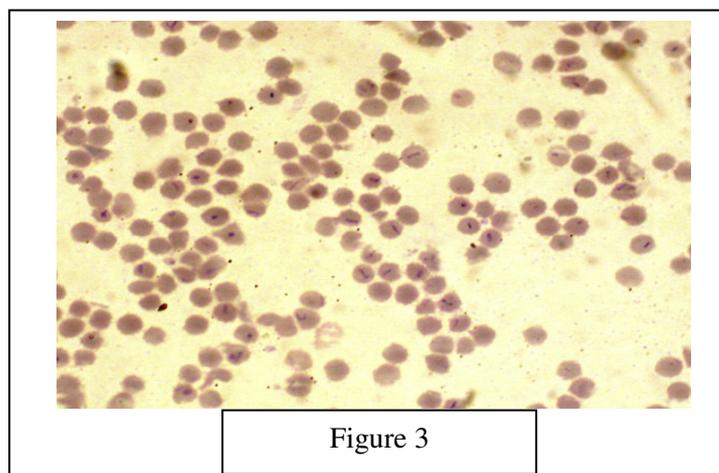
Case History and Observations

A 3 months old female crossbred calf was presented to the Teaching Veterinary Clinical Complex, Mannuthy with reduced feed intake and severe regurgitation of rumen contents. Animal was not voiding any faeces and urine, History denoted that the animal was regularly fed with concentrate intended for adult. Animal was showing grinding of teeth. Physical examination revealed highly elevated body temperature (105°F) and all the superficial lymph nodes were moderately enlarged and abomasum found to be impacted. Lung auscultation revealed a wheezing sound. Animal was showing positive response to wither pinch test and reticular sound heard was of short duration with absence of the normal fluid pouring sound. A stomach tube had been initially passed to rule out the chance of any obstruction in the upper

part of gastrointestinal tract and there were no foreign materials in the thoracic and abdominal radiography also (figure 1 & 2).



blood smear examination revealed rod shaped piroplasms suggestive of *Theileria orientalis* (figure 3) and was confirmed with PCR. Treatment was initiated with intramuscular injections of buparvaquone @ 2.5 mg/kg body weight, Vit. AD₃E injection (Vetade) and intravenous injection of 25% calcium borogluconate.



As per the advice, animal was again presented 2 days after to the hospital for review with sunken eyeballs, impacted abomasums and persisting regurgitation. Peripheral blood smear examination was again carried out and was found to be negative for any haemoparasites. Animal was started treatment with Oxytetracycline injection @ 10 mg/kg body weight intravenously and metoclopramide injection @ 0.2 mg/kg body weight intramuscularly for five days. Fluid therapy was done intravenously with 5% dextrose normal saline and Ringer

lactate @ 20 ml/kg body weight. Oral therapy of neostigmine tablet @0.02 mg/kg body weight and sucralfate suspension 20 ml bid were given for five days. Animal was started taking feed and water without any regurgitation after two days and made an uneventful recovery after five days of treatment.

Treatment and Discussion

Theileriosis causing abomasal atony and abomasal ulcers were observed in the earlier works, however abomasal impaction by Theileriosis is not reported yet. As per the current literature, Buparvaquone is the drug of choice and can be given @ 2.5 mg /kg BW intramuscularly. Oxytetracycline (LA) @20 mg /kg BW is also recommended along with buparvaquone. Here we have given oxytetracycline injection because it will be there in the enterohepatic circulation so that abomasitis get cured. Buparvaquone therapy can be repeated after 48-72 hours depending on severity of infection. Supportive therapy can be done with liver extract, Vitamin B-complex, iron preparations. Blood transfusion is recommended if the haemoglobin level drops below 6g/dl.

Diagnosis can be made by means of examination of peripheral blood smear which shows rod shaped piroplasms within the RBCs. (Callow and Johnston, 1963) However Koch blue body may not be there stained smears of lymph node aspiration always (Aparna *et al.*, 2011). Theileriosis can further confirmed with serological tests like CFT, FAT, formol gel test, ELISA, PCR. (Setty, 2002)

Control measures for Oriental theileriosis can be done mainly in three ways in which Buparvaquone is used for chemoprophylaxis and is given @2.5 mg/kg IM at the age of 7-10 days (Singh and Gill, 1998) or at 30 days (Kumar *et al.*1990).

Fluid therapy has been given with dextrose normal saline and ringer lactate because correction of dehydration and electrolyte balance has a major role in the treatment of abomasal impaction. As per the current literature says, administration of dioctyl sodium sulfosuccinate as 25% solution with mineral oil and warm water via the stomach tube has some effect in correcting impaction. Cholinergics such as neostigmine, physostigmine can also be used. (Radostitis *et al.*, 2006)

Acknowledgements

The authors are thankful to the Director of Clinics, KVASU and the Dean, College of Veterinary and Animal Sciences, Mannuthy for providing the necessary facilities.

References

- [1] Aparna, M., Reghu, R., Vimalkumar, M.B., Bindu, L., Rameshkumar, P., Ajith Kumar, K.G., Promod, K., Ajith Kumar, S., Chintu, R., Devada , K., George, A.J., Ghosh, S. 2011. Molecular characterization of *Theileria orientalis* causing fatal infection in crossbred adult bovines of South India. *Parasitol. Int.* **60**: 524–529
- [2] Kumar, A., Sarup, S., Sharma, R.D., Nichani, A.K., Goel, P.(1991). Chemoprophylactic efficacy of buparvaquone against bovine tropical Theileriosis. *Indian Vet. J.* **68**: 514-516.
- [3] Singh, J., Gill, B.S. (1998). Prophylactic use of Buparvaquone in *Theileria annulata* Infection of Calves. *J. Vet. Parasitol.***12** (1): 60-61.
- [4] Radostits, O.M., Gay, C.C., Hinchkliff, K.W., Constable, P.D.2006. Veterinary Medicine. **10**:367-369
- [5] Naik, G., Ananda, K.J., Kavitha, R.B. 2010. Theileriosis in calves and its successful treatment. *Vet. Wld.* **3**: 191