

Anaplasma phagocytophila Infection in a Black Bengal Goat: A Clinical Report

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ABSTRACT

An one year six months old, 15 kg female black bengal goat was presented in TVCC, C.V. Sc & A.H., R.K. Nagar with a history of anorexia and presence of ticks all over the body. On clinical evaluation the rectal temperature was 107⁰F, mucus membrane was congested, dyspnoea were evidenced. Blood smears were subjected to giemsa stain and was examined under microscope and was found to be positive for having a small dots at the periphery of the red blood cells and morulae in the cytoplasm of white blood cells indicative of *Anaplasma phagocytophilum* infection. The goat was treated with oxytetracycline hydrochloride @ 10 mg/kg body weight intravenously for 7 days, antipyretic drug was given for 3 days and as tick repellent solution was applied after making dilution with water. After 7 days of treatment blood smear were again evaluated and found there is no presence of either intraerythrocytic bodies in RBC and morulae in white blood cells.

Key words: *Anaplasma phagocytophilum*, Black bengal goat, Blood, Treatment

INTRODUCTION

Anaplasmosis is an important rickettsial diseases affecting ruminants in india¹. Anaplasmosis caused by anaplasma species which is an obligate intraerythrocytic rickettsial organism belonging to the family *Anaplasmataceae* of the order *Rickettsiales*² and principally transmitted by *Rhipicephalus microplus*³ & is characterized by varying degree of fever, progressive anaemia and emaciation. *A. phagocytophilum* is thought to be maintained naturally in small mammal-tick cycles with *Ixodes* ticks as vectors².

Anaplasma phagocytophilum infection has been found in sheep, goats, cattle, rabbits, rodents and ticks in north-eastern china⁴. As per the author's knowledge, this is the first documented report of *A. phagocytophilum* infection in goat from North Eastern State of Tripura.

MATERIAL AND METHODS

An one year 6 months old goat weighing 15 kg, was presented in TVCC, C.V. Sc & A.H., R.K. Nagar with a history of anorexia and presence of ticks all over the body.

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On clinical evaluation the temperature was 107⁰F, mucus membrane was congested, respiratory rate was elevated. Blood was collected in EDTA vial & thin blood smear was prepared for microscopic evaluation and CBC was done using auto haematology analyser BC-2800 Vet along with DLC was done after doing Giemsa stain. The goat was treated with oxytetracycline hydrochloride @ 10 mg/kg body weight intravenously for 7

days and antipyretic drug is given (i.e. meloxicam and paracetamol combination) 1 ml Acemegestic bid for 3 days and as tick repellent Butox (Deltamethrin 12.5 mg/ml) solution was applied after making dilution as 3ml/litre of water at weekly interval for 2 occassion. After 7 days of the treatment blood smear was negative for intraerythrocytic boides in RBC and morulae in white blood cells.

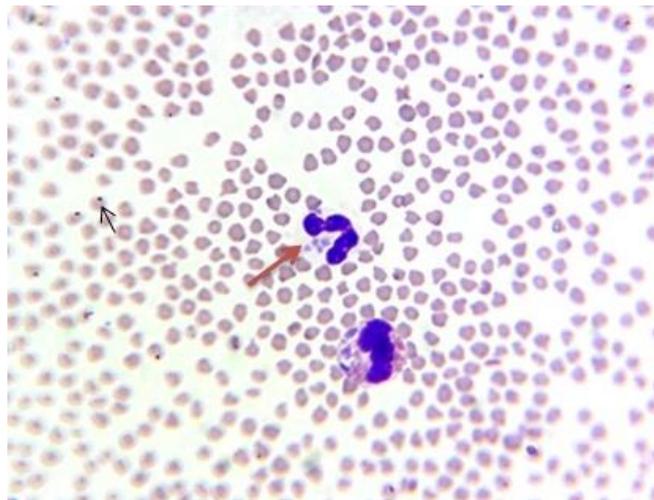


Figure 1:- Blacked headed arrow showing intraerythrocytic *Anaplasma* organism and Red headed arrow showing morulae in neutrophils indicating presence of *Anaplasma phagocytophilum*

RESULTS AND DISCUSSION

A small dots at the periphery of the red blood cells and morulae in the cytoplasm of white blood cells, indicative of *Anaplasma phagocytophilum* infection. The total leukocyte count, total RBC, PCV and Hb on day 0 were 23100/ μ l, $16.81 \times 10^6 / \mu$ l, 28.7% and 10g/dl and On 7th day these values were 19000/ μ l, $16.91 \times 10^6 / \mu$ l, 31.2% and 10.6 g/dl respectively. Experimental infections of sheep and goats with *Anaplasma phagocytophilum* showed that all animals reacted with fever, rickettsiaemia, lymphocytopenia and reduced packed cell volume (PCV)⁵. In the present case DLC on 0th day Neutrophil is 34% and lymphocyte is 66% and 7th day after treatment the neutrophil is 46% and lymphocyte is 54% which is in harmony with the findings that there is decrease in neutrophil percentage post infection with an plasma and reversed pattern was observed in lymphocyte percentage post

infection⁶. Treatment with oxytetracycline hydrochloride shows complete recovery after 7 days of treatment confirmed by microscopic blood smear examination. Long-acting oxytetracycline preparations at the dose rate of 20 mg/kg given once a week for two to four weeks has been effective and imidicarb dipropionate may be useful in caprine anaplasmosis but information on dosage and treatment schedules is limited⁷.

CONCLUSIONS

Goats play a major role in rural economy of Tripura. It contributes nutrition and food security of the family of the goat keeper. Hence, it is necessary to control the tick population and also chemoprophylactic measures should be adopted before the onset of monsoon season. This finding lights on further research should be carried out on caprine anaplasmosis in Tripura state.

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