



E-ISSN: 2320-7078

P-ISSN: 2349-6800

JEZS 2018; 6(6): 1163-1165

© 2018 JEZS

Received: 14-09-2018

Accepted: 16-10-2018

Singh M

Division of Veterinary Medicine
Indian Veterinary Research
Institute (IVRI), Izatnagar,
Uttar Pradesh, India

Kavitha K

Division of Veterinary Medicine
Indian Veterinary Research
Institute (IVRI), Izatnagar,
Uttar Pradesh, India

Bharti D

Division of Veterinary Medicine
Indian Veterinary Research
Institute (IVRI), Izatnagar,
Uttar Pradesh, India

Dixit SK

Division of Veterinary Medicine
Indian Veterinary Research
Institute (IVRI), Izatnagar,
Uttar Pradesh, India

Mukherjee R

Division of Veterinary Medicine
Indian Veterinary Research
Institute (IVRI), Izatnagar,
Uttar Pradesh, India

Soni S Jagatap H

Division of Veterinary Medicine
Indian Veterinary Research
Institute (IVRI), Izatnagar,
Uttar Pradesh, India

Gandhar JS

Division of Veterinary Medicine
Indian Veterinary Research
Institute (IVRI), Izatnagar,
Uttar Pradesh, India

Correspondence**Singh M**

Division of Veterinary Medicine
Indian Veterinary Research
Institute (IVRI), Izatnagar,
Uttar Pradesh, India

Clinical management of mastitis in goat: A case report

Singh M, Kavitha K, Bharti D, Dixit SK, Mukherjee R, Soni S Jagatap H and Gandhar JS

Abstract

Mastitis is probably the most common and costly disease in modern dairy husbandry. The present paper deals with clinical signs, diagnosis and treatment of mastitis in the goat, aged about 2 years. In this case report, A 30 kg adult doe was presented to Referral Veterinary Polyclinics and Teaching Veterinary Clinical Complex, Indian Veterinary Research Institute (IVRI), Izatnagar with the complaint swelling of left quarter from last seven days and history of kidding eight day back. Clinical examination of the udder revealed an enlarged quarter with no let down of milk and response to pain upon palpation of the udder. Haematological analysis showed leukocytosis neutrophilia and lymphopenia. On ABST, microorganisms were found to be more sensitive to ceftriaxone followed by enrofloxacin, ciprofloxacin, amoxicillin, cloxacillin and gentamicin. Therapeutic management of a case was completed with the appropriate antibiotic and supportive care.

Keywords: Doe, mastitis, ABST, treatment

1. Introduction

Mastitis is an important economic disease of goats in several countries in Asia due to the significant economic losses and severe public health implications it poses ^[1]. The condition is characterized by a range of physical and chemical changes in the milk, and pathological changes in the glandular tissues of the udder ^[2]. Several pathogens can cause mastitis but *Staphylococcus* spp. are the most frequently diagnosed causal microorganisms of IMI in goats. Other pathogens such as *Streptococcus* spp., Enterobacteriaceae, *Pseudomonas aeruginosa*, *Mannheimia haemolytica*, *Corynebacteria* and fungi can produce Intramammary infection in small ruminants, but occurrence rates are lower ^[3]. Predisposing factors like improper management, poor hygiene, teat injuries and faulty milking machines are known to hasten the entry of infectious agents and the course of the disease ^[4].

An Acute mastitis is manifested by a hot, reddened, swollen udder which is painful to touch. Chronically affected udders may be firm or withered without evidence of pain. A Clinical mastitis (CM) presents significant clinical features of inflammatory signs in udder tissues and abnormal udder secretion whereas the sole indicator of subclinical mastitis is higher somatic cell count in milk without any visible abnormalities in udder tissue and milk. Diagnosis of mastitis is a cumbersome task and commonly it can be done by California Mastitis Test (CMT) and Somatic Cell Counts (SCC). Bacteriological isolation and PCR identification can also be done to hasten diagnostic procedures ^[5]. An increase in the incidence of disease in an animal herd results in increased use of antimicrobials, which in turn increases the potential for antibiotic residues in milk and bacterial resistance to antimicrobials ^[6]. To prevent the antimicrobial resistance, selection of appropriate antibiotic play a significant role, for this antibiotic sensitivity test (ABST) has to be done before using antimicrobial agents, so in the present study emphasis is given on ABST and treatment aspect of mastitis in goats.

2. Case Presentation

A 30 kg adult doe was presented to Referral Teaching Veterinary Clinical Complex, IVRI Izatnagar Bareilly (U.P.) with a complaint of reduced appetite, swelling of udder and no milk letdown from left quarter since last seven days with history of kidding eight days back (in 2nd lactation). The initial physical examination of the doe revealed, rectal temperature 104°F, heart rate 84/min, respiratory rate 27/min and slightly pale mucous membranes. The animal was alert and responsive. Urination and defecation were within normal limits. Swelling of left

quarter (Fig.1) was observed. Upon palpation udder showed hard to touch, response to pain and the absence of milk from the affected quarter.

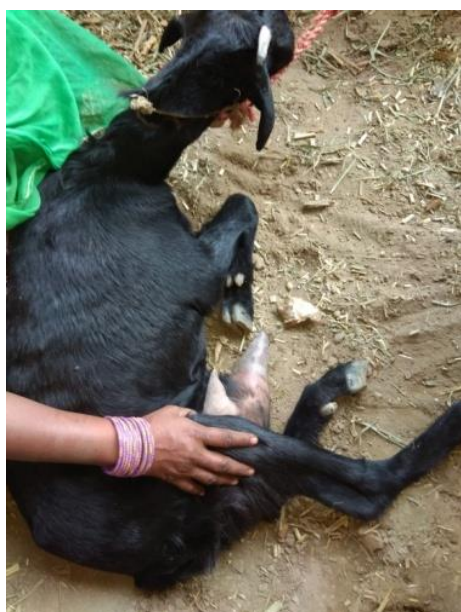


Fig 1: Animal showing swollen left quarter

3. Sample Collection and Laboratory Diagnosis and Results

Whole blood and milk sample were collected and sent for complete blood count (CBC) and antibiotic sensitivity test respectively. Milk sample from the affected teat was collected aseptically after squirting few streams, in sterile vials and processed for antibiotic sensitivity test. Haematological analysis showed Hb level 10 g/dl, TLC- 14,200 / μ l, TEC- 8×10^6 / μ l, neutrophil-62%, lymphocyte-29%, monocytes-4%, eosinophil-3, basophils-2%. Leukocytosis, neutrophilia and lymphopenia were observed in affected goat. Similar findings have been reported by Yusuf *et al.* 2013 [7]. On ABST, organisms were found to be more sensitive to ceftriaxone followed by enrofloxacin, ciprofloxacin, amoxicillin, cloxacillin and gentamicin this is closely related to the findings of Subha *et al.* 2016 [8].

4. Therapeutic and Management Plan

The present case was tentatively diagnosed as Clinical Mastitis based on history and clinical findings. In small ruminants, no detailed protocols for treatment of mastitis have been established as in cows [9]. Antibiotic therapy is a common practice in mastitis, and treatment can start blindly by means of a broad-spectrum effective therapeutic agent against the major causal agents of the disease [10, 11]. In this study the animal was treated with parental injections of antibiotic ceftriaxone (20 mg/kg bwt intramuscularly) for 5 days. Administration of the antibiotic should follow the identification of the causal agent and the establishment of its susceptibility profile. Although antibiotics are useful to treat the bacterial infection, but they cannot protect the glands from tissue damage. Other supportive therapy includes an analgesic flunixin meglumine (2.2 mg/kg intravenously for 7 days), chlorpheniramine maleate inj. (1.5ml, IM for three days), serratiopeptidase and adequate rehydration with normal saline and ringer lactate. The use of nonsteroidal anti-inflammatory agents as supportive treatment in mastitis has been advocated to alleviate the clinical signs of the disease and to improve the

welfare standards of the animals [12]. For this, flunixin meglumine has been found to contribute improvement in clinical signs, particularly of the mammary gland, and returning body temperature to normal limit [13]. The gradual clinical improvement was seen by reduction in the size and hardness of the udder. Restoration of the normal milk was noticed after 5 to 9 days of medical care.

5. Conclusion

Present paper highlights the effective therapeutic management of clinical mastitis in goats. The prognosis of mastitis in the goat is favourable if early and effective treatment has been undertaken. Success of therapy depends on selection of effective antibiotics based on culture sensitivity test and proper supportive therapeutic care. It can also minimize the indiscriminate use of antibiotics and decrease antimicrobial resistance.

6. Acknowledgement

Authors are highly thankful to the Director, Indian Veterinary Research Institute, Bareilly (UP) for providing the necessary facilities required for conducting the research work.

7. References

- Koop G, Islam MN, Rahman MM, Khatun M, Ferdous J, Sayeed MA *et al.* Risk factors and therapy for goat mastitis in a hospital based case-control study in Bangladesh. *Preventive veterinary medicine.* 2016; 124:52-57.
- Radostits OM, Gray CC, Hinchcliff KW, Constable PD. *Veterinary medicine. A text book of the disease of Cattle, Horse, Sheep, Pigs and Goats.* Edn 10, Sounder, Spain, 2007, 673-749.
- Contreras A, Sierra D, Sanchez A, Corrales JC, Marco JC, Paape MJ *et al.* Mastitis in small ruminants. *Small Ruminant Research.* 2007; 68:145-153.
- Majic B, Lijubic Z, Jovanovic, Bunta V. Prevalence, etiology and diagnosis of subclinical mastitis in goats. *Praxis Veterinary Zogreb.* 1994; 42(3):225-233.
- Paterna A, Contreras A, Gómez-Martín A, Amores J, Tatay-Dualde J *et al.* The diagnosis of mastitis and contagious agalactia in dairy goats. *Small Ruminant Res.* 2014; 121:36-41.
- Oliver SP, Murinda SE. Antimicrobial resistance of mastitis pathogens. *Vet Clin North Am Food Anim Pract.* 2012; 28(2):165-85.
- Yusuf A, Ikechuckwu OI, Lawan A, Ibrahim B. Alterations in Hematological and Serum Biochemical Parameters of Sahel Goats with Clinical Mastitis. *Journal of Agriculture and Veterinary Science.* 2013; 4(4):74-77.
- Ganguly S, Praveen PK. Microbiological examination of milk samples from cow udder affected with chronic clinical mastitis. *Int J Rec Dev Engg Technol.* 2016; 5(5):1-2.
- Roberson JR. Establishing treatment protocols for clinical mastitis. *Vet Clin North Am Food Anim Pract.* 2003; 19:223-234.
- Sawant AA, Sordillo LM, Jayarao BM. A survey on antibiotic usage in dairy herds in Pennsylvania. *J Dairy Sci.* 2005; 88(8):2991-2999.
- Mavrogianni VS, Menzies PI, Fragkou IA, Fthenakis GC. Principles of Mastitis Treatment in Sheep and Goats. *Veterinary Clinics of North America: Food Animal Practice.* 2011; 27(1):115-120.

12. McKellar QA. The health of the sheep industry and the medicines to maintain it. *Small Rumin Res.* 2006; 62:7-12.
13. Mavrogianni VS, Alexopoulos C, Fthenakis GC. Field evaluation of flunixin meglumine in the supportive treatment of ovine mastitis. *J Vet Pharmacol Ther.* 2004; 27:373-375.