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Therapeutic management of udder edema in goat in field conditions: A case report

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Abstract

Udder edema is an important clinical condition occurring in animals around parturition and most of the times is misdiagnosed and wrongly treated for Mastitis in field conditions due to which the dairy farmer has to bear the economic loss arising due to the loss of milk and also the treatment cost incurred by him for the treatment of animals. Proper management of animals during the last months of pregnancy will definitely help in preventing losses to the farmer and also will save animal from the unnecessary pain and discomfort due to the Udder edema.

Keywords: Udder edema, goats, post parturition, diuretics, nutrition and management

Introduction

Kandi area of Punjab is very different from rest of the Punjab, it lies in the foot of Shiwalik hills in the northeastern part of Punjab in the districts of Gurdapur, Hoshiarpur and Ropar respectively. (Shardha, 2001) [1].

Punjab has 6.07 per cent of total geographical area under forest and majority of this forest area lies in this Kandi area, due to which agriculture practices are very less as compared to other areas of Punjab and along with this most of the agriculture is rainfed and also there is water scarcity in the area due to which agriculture is not the main source of income for the rural peoples of the areas. For the purpose of livelihood, most of the rural persons are doing labour work in different fields and along with this they are also rearing one or two dairy animals in their houses. Due to the scarcity of the fodder in the area, the production potentials of the animals is less as compared to animals from other parts of Punjab, and also many of the farmers are landless farmers or having less than one acre of land, due to which many of the rural persons of the area are shifting towards the other livestock farming practices such as Goat and Poultry farming because there is large scope for grazing of goats in the area due to the dense forests in the Kandi area

As per the 20th Livestock census, an increase has been seen in the total Goat population in Punjab as compared to the 19th Livestock census. A large number of persons such as retired army persons, unemployed youth are adopting Goat farming as a source of income, because some of the obvious reasons such as initial low investment for construction of Goat shed, less daily expenditure for small animals as compared to large animals, lesser space requirements, provision for grazing of animals and many other factors, but all of these farmers are rearing Goats without having any scientific knowledge about Goat farming practices due to which they are bearing losses due to their unawareness about the management practices.

Materials and Methods

One such farmer contacted our RRTC centre where he reported that one female Goat recently parturated unable to stand or walk properly due to the swelling of the whole udder, previously diagnosed and treated for mastitis with no visible improvement at field level. The animal was visited at the farm site on the same day and on clinical examination, the animal was having normal rectal temperature, decreased feed intake, pain on palpation of udder and vital parameters (heart rate, respiration rate) within the normal range. Careful examination of udder revealed that it was the case of udder edema (Figure.1) misdiagnosed as mastitis and treated for the same for last three days without any clinical improvement in the condition. On palpation of the udder and teats, there was swelling and on pressure application with fingers, they were soft and finger remarks were left on the udder and after inserting the needle, watery fluid was aspirated confirming the edema in teats. (Sherman and Robinson, 1983) [2].

Milk was normal in color and appearance. Animal felt discomfort with pain and loss of appetite. The farmer is taking his animals for grazing and after returning back from grazing, the farmer is giving salt bricks to his animals for licking, due to which there was excessive accumulation of fluid in the body.

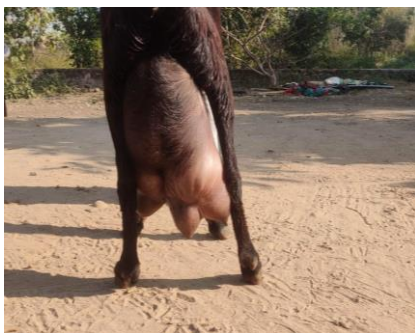


Fig 1: First day of Treatment

Results and Discussion

The main aim of the treatment of udder edema is to drain out excessive fluid accumulated in the interstitial space, reducing swelling and pain in the udder. So for this the animal was treated with diuretics (Frusemide) @ 2 mg/kg of body weight i/m and antihistaminic (Chlorpheniramine maleate) @ 0.5 mg/kg and an anti-inflammatory Flunixin meglumine @ 1 mg/kg. Same treatment was continued for five days and from third day, remarkable improvement with decrease in udder size was there and on seventh day complete recovery was noted (Figure 2) Similar results were observed by Kamble *et al.*, (2016) [3] in Primi-parous recently parturated does administered diuretics alongside antibiotics and anti-inflammatory treatment.

As the milk quality was examined by using BTB paper test and California Mastitis kit test with no abnormality in the milk, so no antibiotic was used during the treatment as already antibiotics were given to the animals while treating it for the Mastitis during the previous treatment.

The owner was advised for udder massage gently throughout with proper cleaning for enhancing the drainage through lymphatic system. The farmer was also advised to remove the salt access from the goat and not to practice the same during the transition period in near future.

A large number of cases of udder edema have been reported in large animals for both cattle and buffalo (Ghodasara *et al.*, 2012; Reddy *et al.*, 2013; Morwal, 2016) [4, 5, 6] but very few cases are reported in Goats of udder edema due to which this case report is prepared. Udder edema is a clinical manifestation involving swelling of the udder due to excess accumulation of lymphatic fluid in and around the interstitial spaces of the udder (Kojouri *et al.*, 2015) [7]. The mechanism of its occurrence is considered multi-factorial in nature such as hereditary, imbalanced pre-parturient feeding and natural metabolic changes that occur in and around parturition resulting in increased blood flow of udder alongside less efficient lymphatic drainage system due to pressure of foetus in the pelvic region (Al-Ani and Vestweber, 1986) [8]. The nutritional causes includes hypo-proteinemia induced through high energy dietary intake, excessive salt feed during close up period and oxidative stress. It is well established that the severity of udder edema increases with salt supplementation both in the form of sodium chloride and potassium chloride in dairy heifers (Nestor *et al.*, 1988) [9] Hypoproteinemia is also

considered another predisposing factor to udder edema (Hutjens, 1980) [10]. Lastly, hypoproteinemia induced through intestinal parasitism can also lead to udder edema (Okkema and Grandin, 2021) [11]. However, despite no de-worming history, fecal sample recorded did not show any type of parasitic eggs when observed under microscope.

Thus, the disease is non infectious and non-contagious in nature and can be controlled using better feeding and management practices. However, the disease is often misinterpreted as mastitis and considerably rare in multi-parous goats as parity is negatively associated with prevalence of edema (Morrison *et al.*, 2018) [12].

Although the udder edema is more common in primi-parous animals (Plummer & Plummer, 2012) [13] but can be seen in multi-parous animals also as reported in this study.



Fig 2: Complete recovery on 7th day

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