

Therapeutic Management of Udder Edema in a Jersey cow

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Abstract

An advance pregnant Jersey cow referred with history of huge udder swelling. The clinical examination revealed udder swelling with fluid thrill and pain on palpation involving all four quarters, severe discomfort, difficult walking, normal colour and consistency of milk, rectal temperature 103.5° F, slightly congested mucus membrane and tachycardia. Based on history and clinico-physiological examination case was diagnosed as udder edema. The cow was successfully treated with diuretics, antihistaminic and anti-inflammatory with uneventful recovery.

Keywords : Frusemide; jersey cow; periparturient; udder edema

Introduction

Udder edema is common in high-producing dairy cattle especially in heifers before and after parturition. Udder edema is a risk factor for development of clinical mastitis and occasionally can become a chronic condition that persists throughout lactation (Hillerton, 2022). Udder edema is usually acute in nature and is characterized by an excessive accumulation of fluid in the interstitial tissue spaces and makes milking difficult and the udder suspensory ligaments can become permanently damaged (Vestweber and Al-Ani, 1984). Although the exact mechanism of developing udder edema is unknown, there have been numerous studies investigating risk factors related to this condition (Erb and Grohn, 1988).

The present case reported with clinical manifestation and therapeutic management of udder edema in advance pregnant Jersey cow.

History and Clinical Observation

A seven year old advance pregnant Jersey cow due for parturition within two weeks referred with history of huge udder swelling since five days. As per owner's complaint swelling developed slowly within five days, anorexia and in previous lactation cow has suffered with the same problem of udder edema. The clinical examination revealed udder swelling with fluid thrill and pain on palpation (Fig. 1) involving all four quarters, severe discomfort, difficult walking,

normal colour and consistency of milk, rectal temperature 103.5°F, slightly congested mucus membrane and tachycardia. Based on history and clinico-physiological examination case was diagnosed as udder edema.

Treatment and Discussion

The cow was treated with Inj. Meloxicam (Melonex^a) at 0.5 mg/kg b.wt. IM and Inj. Chlorpheniramine maleate (Anistamin^a) at 0.5 mg/kg b.wt. IM for 5 days, Inj. Frusemide at 0.5 mg/kg b.wt. IM for 3 days, milking thrice a day and hot fomentation advised for 5 days. The cow responded very well to therapy, on second day swelling reduced up to 20 percent (Fig. 2) and animal start eating normally on 4th day with 70 percent reduction in swelling and normal consistency of udder on palpation (Fig. 3). Uneventful recovery observed on 6th day of treatment (Fig. 4). After two weeks, parturition occurred normally with normal milk production. The treatment with diuretics, anti-histaminic and anti-inflammatory helped to drain excessively accumulated of interstitial fluid, reducing histamine release and udder swelling and relieved pain, respectively. Massage and hot fomentation on the affected udder areas stimulates blood flow, which aids in the removal of excess fluid.

Udder edema can be a major discomfort to cow and causes management problems such as difficulty with milking, increased risk for teat and udder injuries, mastitis and may also reduce milk production. The highly vascular nature of bovine mammary gland makes the tissue more prone to develop localized edema due to an increase in blood and lymphatic flow. In addition, the developing bovine mammary gland undergoes extensive growth and physical

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Udder edema



Fig. 1: Udder swelling and pain on palpation (before treatment)



Fig. 2 : Reduction in swelling (2nd day of treatment)



Fig. 3 : Reduction in swelling and no pain on palpation (4th day of treatment)



Fig. 4 : Uneventful recovery (6th day of treatment)

changes during late gestation which likely contributes to edema development (Vestweber *et al.*, 1984). Factors like prepartum heavy grain feeding to heifers (Dentine and McDaniel, 1983) and high sodium and potassium intake in housed cattle might be predisposing factors for udder edema. Prepartum udder edema was positive for plasma estrone and estradiol-17 α and was negative for estradiol-17 β and progesterone (Malven *et al.*, 1983).

Udder edema does not seem to be caused by just one factor but rather a combination of factors; genetic predisposition, management and nutrition, large fetus size, heavy concentrate feeding and incomplete developed mammary vein may be responsible for severe udder edema in the buffaloes and cows. Prevention through proper nutrition is easiest route, but treatment is successful in controlling this condition (Ghodasara *et al.*, 2012). Udder edema may be prevented to some extent by good husbandry and management before parturition, including a well bedded box stall with good footings, moderate exercise, a mildly laxative diet and the use of udder supports and massage. It was found that pre-partum

milking, along with massage, tended to relieve or prevent congestion in udder of the cattle.

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