
Research Paper

Successful Use of Autogenous Vaccine in the Treatment of Caseous Lymphadenitis in Beetal Goat: A Case Report

Aasia Noor and Imaad Rashid

Department of Clinical Medicine and Surgery, Faculty of Veterinary Science,

University of Agriculture, Faisalabad, Pakistan

Corresponding Author:

ARTICLE HISTORY

Received: May 11, 2016

Revised: July 19, 2016

Accepted: September 30, 2016

Key Words:

Caseous lymphadenitis

Beetal goat

Abscess

Autogenous vaccine

ABSTRACT

Caseous lymphadenitis (CLA) is primarily an infectious and contagious disease of sheep and goats all over the world. The present study involved a case of CLA in a Beetal goat that displayed the typical signs and symptoms of the disease and is focused on the treatment of the disease by autogenous vaccine. Following the autogenous therapy, noticeable improvement was seen and the animal resumed lactation within 3 weeks. Henceforth, autogenous vaccine therapy can be successfully used in CLA adjunct with supportive therapy.

All copyright reserved to Mr. Scholar

To Cite This Article: NOOR, A. and RASHID, I. (2016). Successful use of autogenous vaccine in the treatment of caseous lymphadenitis in beetal goat: A case report. *Scholar's Adv. Anim. Vet. Res.*, 3(3): 126-129.

INTRODUCTION

Caseous lymphadenitis (CLA) is a chronic, recurring and highly contagious bacterial infection caused by *Corynebacterium pseudotuberculosis* which can manifest itself as cutaneous or visceral disease of sheep and goat (Zeru and Kahsay, 2014). The organism enters the body through superficial wounds or mucous membranes or on through contact

with fomites such as shearing blades, feeders, grooming equipment, and bedding. (Pugh and Baird, 2012). It is considered incurable owing to the fact that the organism is an intracellular pathogen and henceforth the disease incurs major economic losses including culling of affected animals, loss of hide, condemnation and trimming of carcasses, treatment and mortality losses etc. This debilitating disease, though rare, holds high importance due to lack of

awareness in local farmers which makes the diagnosis difficult. It is susceptible to antibiotics other than the aminoglycoside group but treatment is not usually attempted because the abscess is encapsulated, the organism is intracellular and response is poor. (Radostits *et al.*, 2007). The current report demonstrates the use of autogenous vaccine for the treatment of the infection.

CASE DESCRIPTION, CLINICAL FINDINGS AND TREATMENT

A 3.5 years old Beetal goat, weighing about 25 kg was presented to the Veterinary Medical Teaching Hospital, Department of Clinical Medicine and Surgery, University of Agriculture, Faisalabad, Pakistan. The presenting complaint of this goat was anorexia, numerous abscesses on the body and a waning body weight. Animal had ceased lactation since a fortnight and developed abscesses along neck (Fig. 1). Superficial facial lymph nodes (parotid and submandibular) were also swollen. These abscesses occasionally ruptured on maturation expelling a cheesy, yellowish, non-odorous pus (Fig. 2). The animal had become hide bound, severely dehydrated (about 8-10%) and anemic (Fig. 3). Feed and water intake was normal. Clinical examination



Fig. 2: Rupture of a mature abscess



Fig. 3: Hide bound and dehydrated condition of the goat at the time of first presentation



Fig. 1: Multiple abscess along the neck of a goat effected with caseous lymphadenitis



Fig. 4: Pus from the abscess was collected aseptically to prepare autogenous vaccine

revealed normal parameters: temperature (103°F or 39.44°C), pulse (68 beats min⁻¹) and respiration (16 beats min⁻¹). Ruminal motility was normal (2 waves min⁻¹). Capillary Refill Time (CRT) appeared to have increased (>3 sec). Complete Blood Count (CBC) report showed an increased percentage of lymphocytes and decreased hemogram (PCV, RBC count and hemoglobin levels).

Microbiological examination of pus revealed the Gram positive "Chinese Alphabet" like bacterial cells. On the basis of the typical clinical and laboratory findings, the disease was diagnosed as caseous lymphadenitis.

The following treatment was given:

1. The animal was subjected to autogenous vaccine therapy. Three grams of pus was mixed with 1ml of formalin. Two milliliter of this solution was injected subcutaneously weekly for 3 weeks consecutively.
2. Inj. Phenvil® (Pheniramine Maleate; Lawrance Pharma (Pvt.) LTD. 2 ml IM.
3. Intravenous supportive therapy- Ringer's Lactate (ZEESOL-H® Shazeb Pharmaceutical Industries Limited); 500 mL once a day for 5 days.

RESULTS

Follow up at the 3rd week showed regression of abscesses and improved body condition of the animal. Supportive therapy of the animal was continued till the 5th week on alternate days to sustain the lost weight. Capillary refill time was back to normal. There was resumption of lactation following the 3rd week of treatment. Since autogenous vaccine was opted, the chances of recurrence are expected to be very low.

DISCUSSION

Corynebacterium pseudotuberculosis (previously known as *Corynebacterium ovis*) is the causative agent of caseous lymphadenitis (Smith and Sherman, 2009). The disease is characterized by abscess formation in the skin, internal and external lymph nodes and internal organs. (Osman *et al.*, 2015). All strains produce an exotoxin called phospholipase D that enhances dissemination of the bacteria by damaging endothelial cells and increasing vascular permeability. The bacterium has a second virulence factor which is an external lipid coat that provides protection from hydrolytic enzymes in host phagocytes. Replication of bacteria occurs in the phagocytes, which then rupture and release bacteria. The ongoing process of bacterial replication, followed by attraction and subsequent death of inflammatory cells, forms the characteristic abscesses associated with CLA (Washburn, 2014). The incubation period may vary from 2 to 6 months however, once the animal infected may considered as a carrier for life (Browning, 2012). In the present case, abscesses were observed along the lymph drainage through the neck and upon lancing, a soft pasty pus was seen.

Nowadays, the most common treatment for CLA is abscess drainage followed by disinfection with an iodine solution and antibiotic therapy (Osman *et al.*, 2015). But because the thick pus is enclosed in a fibrous capsule which medicines cannot penetrate into antibiotic treatment is generally ineffective. The protocol commonly used locally for CLA is culling or slaughtering since antibiotics are ineffective. Upon slaughter, the affected organs should be trimmed and discarded. The superficial abscesses are pulled out along with the hide. Another treatment for caseous lymphadenitis is the intralesion injection of formalin i.e., directly into the abscess. However, this was not deemed appropriate

for food producing animals because the FDA has outlawed the extra-label use of a potent carcinogen in such animals

Autogenous vaccines are generally prepared from cultures taken from an affected individual and then injected in the same individual to prevent the progression of the disease by triggering the immune system against the causative organism. The concerned goat was subjected to auto-vaccine therapy. Noticeable improvement has been observed in the goat after 3rd week of injection along with the improvement of body condition.

Auto-vaccines have a therapeutic effect that is questionable since each vaccine has been prepared from different individuals. They are supposed to incite antibody production in the injected individuals.

REFERENCES

- BROWNING, M.L. (2012). Caseous Lymphadenitis (CL) in Goats and Sheep. Alabama Cooperative Extension System (Alabama A&M University and Auburn University), pp: 1-4.
- OSMAN, A.Y, F.F.J. ABDULLAH, E.L.T. CHUNG, Y. ABBA, M.A. SADIQ, K. MOHAMMED, M.A. M. LILA, A.W. HARON and SAHAREE, A.A. (2015). Caseous Lymphadenitis in a Goat: A Case Report. International Journal of Livestock Research. Vol. 5(3): 128-132.
- PUGH, D.G and A.N. BAIRD. Sheep and Goat Medicine 2nd Edn, Elsevier, Maryland heights, MO, pp 126-127.
- RADOSTITS, O.M., C.C. GAY, K.W. HINCHCLIFF and P.D. CONSTABLE. Veterinary Medicine: A Textbook of the diseases of Cattle, Sheep, Pigs, Goats and Horses. 10th Edn. pp 795-798. Saunders-Elsevier, London, UK.
- WASHBURN, K. (2012), Caseous Lymphadenitis of Sheep and Goats. The Veterinary Merck Manual. Merck & Co., Inc., 2008.
- ZERU, F. and KAHSAY A.G. (2014). Caseous lymphadenitis in goats from Borena Range Land South Ethiopia slaughtered at Luna Export Abattoir. Journal of Veterinary Medicine and Animal Health. Vol. 6(6): 168-173.