

MANAGEMENT OF ACTINOMYCOSIS (LUMPY JAW) IN A JERSEY CROSSBRED BULL: A CASE REPORT

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Abstract: Actinomycosis is a chronic disease caused by a non spore forming anaerobic bacteria *Actinomyces bovis*. In the present case study, a two year old jersey crossbred bull was affected with bovine actinomycosis since last one year. The hard bony swelling was observed on the left mandible and an open wound was observed on the ventrolateral region of the mandible. Tentative diagnosis was made on the basis of the clinical signs and the sulphur granules in the pus oozing out from the wound. Treatment followed was management of wound by lavaging with iodine solution, antiseptic dressing of the wound with povidone iodine for five days, Dicrysticin @ 2.5 gm I/M twice a day for 10 days along with feeding of potassium iodide 7 gm once daily in the form of bolus made with wheat flour and sugar for 10 days. The half of the swelling disappeared after 5 days of the treatment and complete swelling was disappeared within 15 days since treatment started. This indicates that the line of treatment followed in the case is efficient in the management of chronic case of bovine actinomycosis.

Keywords: Actinomycosis, treatment, management.

Introduction

Actinomycosis is also called as lumpy jaw disease is a sporadic but commonly found disease in cattle, occasionally occurs in pigs and horses and rarely occurs in goats (Radostits *et al.*, 2007). This disease is chronic and progressive in nature and leads to hardened, granulomatous, suppurative abscess that often involves the mandible, maxillae or other bony tissues in the head region of the animals. The species those generally causes this disease in domestic animals are *Actinomyces bovis*, *A. hordeovulneris*, *A. hyovaginalis*, *A. israelii*, *A. naeslundii*, *A. suis*, *A. viscosus* and *Arcanobacterium pyogenes* (Songer and Post, 2005). Among all these species *Actinomyces bovis* is a common inhabitant of the bovine oral cavity and it is presumed that the infection occur through any wounds caused to the buccal mucosa by sharp pieces of feed or foreign material. Infection of *A. bovis* may occur through dental alveoli, and may cause the disease more commonly in young cows when the teeth are erupting (Radostits *et al.*, 2007). This can lead to difficult chewing in cattle. Previous studies report various protocols for the treatment of lumpy jaw disease (Nusbaum, 1965; Thomas,

1998; Brunton *et al.*, 2005; Mettler *et al.*, 2009; Tharwat and Abdel-Rahim, 2011). Generally the response is sub-satisfactory to the routine treatments. Tharwat and Abdel-Rahim (2011), have reported in their study that 4 cows and one calf out of total nine animals have not responded to the treatment conducted by them for treating actinomycosis. The present case report describes a typical case of lumpy jaw in a two year old jersey crossbred bull which was treated successfully managed and treated with antiseptic dressing with povidone iodine, oral supplementation of potassium iodide and systemic streptopenicillin injections.

Material and methods

Case History

The case was attended at Balh valley, district Mandi, Himachal Pradesh during the month of July 2019. According to the owner the case was one year old. Initially the owner has observed a small hard swelling on the ventrolateral border of left mandible. Progressively the swelling enlarged and the bull start rubbing it against hard rough objects four to six months back. The swelling ruptured due to frequent rubbing and few amount of drained pus was observed by the owner one month back. Due to lack of veterinary facilities in the area the case was left untreated. However, a herbal anti-fly spray was used by the owner to avoid flies on the wound area twice a day for a week as suggested by a veterinary pharmacist from a medicine shop. Foul smell was also observed by the owner from the wound one weak back.

Observations

Housing conditions of the barn were tie stall with kachha (earthen) flooring. Animal were fed with seasonal grasses (sorghum, barseem and setaria) and paddy straw (during scarcity periods). No concentrate was offered to the animals. All the clinical parameters (rectal temperature, respiration rate and pulse rate) were found normal. Bull was showing slight reluctance in rumination behavior and body condition was also low. Animal didn't allowed to touch the head area. So, after proper restraining a thorough examination of the condition was done. Consistency of the swelling was hard and bony. Slight salivation was observed but there was not any kind of injury or clinical condition found in the oral cavity of the bull. Reluctance in rumination behavior could be due to painful wound on the mandible region. Wound seems fresh as bull use to rub it every day against hard objects in the barn. Pus was aspirated with the help of an 18 gauge needle and was observed carefully and "sulphur granules" were found in the pus. Microscopic examination was not possible in the area as the case was in the village and labs were far away from the area. Therefore, on the basis of

history, thorough clinical examination and presence of the sulphur granules in the pus the case was tentatively considered as the case of Actinomycosis (lumpy jaw).

Treatment and Discussion

Hairs surrounding the wound were clipped and the area was cleaned using savlon. Pus was aspirated using syringe and debridement of the wound was done. Wound was lavaged with normal saline followed by 2% povidone iodine solution. Povidone iodine ointment was applied and the wound was left open after application. This procedure was followed for five days. Traditionally the treatment of actinomycosis involves oral or intravenous dosing of iodides and/or antibiotics such as penicillin and streptomycin but there is variability in the results (Nusbaum, 1965; Brunton *et al.*, 2005; Radostits *et al.*, 2005). In the present study, Injections of Dicrysticin @ 2.5 gm (Streptopencillin) was given through intramuscular route twice a day for 10 days and powder of Potassium iodide 7 gm was kept in the centre of the boluses made with wheat flour and jaggery and fed to the bull for 10 days. Lacrimation, anorexia, coughing and appearance of dandruff indicated that maximum systemic levels of iodine have been reached. Oral potassium iodide supplementation or intervenous sodium iodide is a standard treatment for actinomycosis (Radostits *et al.*, 2005). Liquid Brotone was given as a supportive liver supplement for three days (40 ml/day). No changes in the feeding practices were suggested to the owner but water was provided three times a day in a 20 liters bucket and the bull was allowed to drink the water as much as he desire. Following this procedure the half of the swelling reduced after five days of the treatment and complete swelling disappeared within 15 days since the treatment started. However, wound was healed completely in one month since the starting of the treatment and a hairless patch left at the site of the wound after one month. Rumination behavior of the calf started normally after the recovery. Variability in the recovery of previous results and present results can be due to severity of the condition and the wound severity (Tharwat and Abdel-Rahim, 2011; Iqbal *et al.*, 2012; Shah *et al.*, 2016).

Conclusion

A two year old jersey crossbred bull presented with a chronic case of actinomycosis (lumpy jaw) was successfully treated with the combination of pus aspiration with the help of syringe and needle, wound lavaging and management with povidone iodine, oral potassium iodide supplementation and intramuscular administration of dicrysticin (strepropencillin).

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