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Medicinal management of odontoma with secondary actinomycosis in buffalo: A case report

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Abstract

A case of odontoma with secondary actinomycosis in 5-year-old buffalo was treated parenterally with anthiomaline along with KI orally. Patient recovered fully within 15 days without any complications and surgical involvement.

Keywords: Odontoma, tulasi, actinomycosis in buffalo, KI orally

Introduction

Odontoma is a tumor composed of osseous tissue and develops from budding of extra-odontogenic epithelial cells from dental lamina. It may occupy a position anywhere in mandible or maxilla but mostly the alveolar process of lower jaw is involved (Singh *et al.*, 1993) [8]. This is sporadically observed in domestic animals in past (Mahjour and Pear Craft, 2007) [4]. In domestic animals tumors have been observed as mass like lesions impeding with mastication further leading to secondary complications (Head *et al.*, 2002) [1]. Odontogenic tumours can be managed surgically that includes chiselling or curetting out tumorous growth and closing cavity in maximum possible manner to oppose mucosal surfaces. Radiation therapy, thermocautery and cryotherapy in conjunction have also been recommended to treat various tumours (Tetens *et al.*, 1995) [9]. Vincristine sulphate in combination with anthiomaline proved to give better result in verrucous, nodular and occult type of sarcoids in equine (Jaglan *et al.*, 2018) [2] although very limited studies are present for odontoma in buffaloes and their medicinal management. The present case study describes medicinal efficacy of anthiomaline in bovine odontoma.

History and clinical observations

A buffalo aged 5 years and having 500 kg body weight presented at Veterinary Clinical Complex, Lala Lajpat Rai University of Veterinary and Animal Sciences, Hisar, with complaint of abnormal hard growth at rostral mandible along with bleeding intermittently since last 15 days. On palpation it, the mass was firm but not painful. Tooth root appeared to be involved leading to difficulty in prehension, mastication and reduced appetite. The animal was previously treated with antibiotic Enrofloxacin, flunixin meglumine and multivitamins for 10 days with no relief in clinical condition of the animal.

Physical examination revealed congested mucous membrane, normal temperature and excessive salivation. Close examination of lower jaw revealed hard tumorous like growth loosely attached incisors with decreased size and displaced apart (Fig. 1). Incisors were movable and found to be dislodged from their respective alveoli. Haematological examination revealed mild anaemia with relative neutrophilia. Serum biochemistry revealed ALT (20.45 IU/L), AST (85.76 IU/L), BUN (43.20 mg/dl) and creatinine (1.04 mg/dl) within normal range. Impression smear from lesion revealed actinomyces on field staining. So, on the basis of clinical signs, location of growth, the case was tentatively diagnosed as of odontomas complicated with actinomycosis.

Treatment

Haemostasis was achieved by digital pressure with sterilized gauze and by administration of Inj. Clotex® (30ml). Oral cavity was irrigated with Potassium permanganate solution (0.5- 1% concentration). Parenteral administration of antibiotic Streptopenicillin @ 5 gm, for 5 days and NSAID Meloxicam (Melonex®) @ 0.2 mg/kg b.wt. For 5 days was advised. Anthiomaline® (Lithium Antimony Thiomaleate, Novartis pharmaceuticals) with the total dose of 20 ml was

administered deep intramuscularly on alternate days for six times. Supportive therapy included liver tonics, vitamin C and B-complex was administered along with. Potassium iodide (KI) was also given orally @ 15gm for 15 days to combat secondary actinomycosis infection. The case was followed during the entire course of the treatment and it was observed that animal showed decrease in the size of tumour after 15 days of treatment without any complication (Figure 2) and animal start mastication and eating.



Fig 1: Tumorous growth in mandibular incisor region



Fig 2: Post-treatment appearance of mandibular region in affected buffalo

Discussion

Bovine odontoma arises from odontogenic epithelial remnants and occurs predominantly in mandibular incisor region of bovine (Philipsen *et al.*, 1991) [5]. In present case, odontogenic tumor was tentatively diagnosed at mandibular incisor region in a five years old buffalo. Odontogenic tumours have been less studied in buffaloes however, tetens *et al.* (1995) [9] observed most odontogenic tumors in cattle less than two years of age and speculated to be associated with development of mandibular permanent incisors. Odontoma might have occurred due to injury at the site of lesion in the present case and get complicated with secondary actinomycosis infection. Sharma *et al.*, 2010 [7] reported actinomycosis secondary to injured oral mucous membrane by odontoma. Because of this tumor the dental arcade was deformed, and mastication was severely affected. Shafer *et al.* (1983) [6] also reported that development of odontoma could be related to trauma. Chemotherapy drugs can be administered as a sole treatment to small size of tumour, but it is recommended that larger lesions should be surgically debulked prior to drug treatment (Kumar *et al.*, 2019) [3]. In the present case surgical excision was not possible because of large and hard mass involving most of the oral cavity. So, authors tried anthiomaline as a chemotherapeutic agent and proved to be effective in the treatment of odontogenic tumours in bovines.

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