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## Surgical management of large complex odontoma in a Jersey cow: A Case Report

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### Abstract

A four years old Jersey cross bred cow was brought to the Large Animal Surgery unit, Veterinary Clinical Complex, VCRI, Namakkal with a history of growth of the right lower mandible and gums including incisors for the past week which disrupted the feeding habit of the animal. Examination of animal revealed tumour growth at the mandibular incisors as odontoma. Radiographic examination reveals the extent of bone involvement as osteolytic changes are observed. Surgical excision of tumour growth was carried out under bilateral mental nerve block and local infiltration of 2% lignocaine. Post operatively animal was maintained with antibiotics, anti-inflammatory and potassium permanganate solution was advised for oral cavity irrigation with liquid feed. The postoperative routine makes the animal good aesthetic appearance and successful management.

**Keywords:** Cattle, mandible, incisors, odontoma, surgical excision

### Introduction

An odontoma is also called as an odontome (Ireland, 2010) [3]. Odontoma is a tumour composed of tooth tissue, only rarely met in domestic animals (Venugopalan A, 2000) [7]. It is sporadically observed in cattle, buffalo and sheep. The tumour could be located either in the mandible or maxilla but frequently lower jaw was involved. In advanced cases, loose incisors were often embedded in the tumour mass (Tyagi and Singh, 1993) [6]. Tumours of the jaw and oral cavity include epithelial, vascular, odontogenic, osseous and fibroblastic tumour. Odontogenic tumours were most often evident in young to adult animals (Fubini and Ducharme, 2004) [1]. Tumors originating in the jaw region often exhibit gradual, firm to bony growths. These growths typically emerge around or close to tooth roots and could lead to tooth loosening and malignancy affecting neighboring teeth. Odontogenic tumors were composed of different combinations of odontogenic epithelium, sometimes with the inclusion of dental or mesenchymal tissue through induction. It's important to differentiate between odontomas and ameloblastic fibromas. Odontomas have restricted growth potential and cease to enlarge once fully developed. Conversely, ameloblastic fibromas can grow without limits (Gardner, 1996) [2]. For smaller tumors, chemotherapy could be used alone as treatment, but larger tumors require surgical reduction before drug therapy. In cattle, removing the mandible (mandibulectomy) to treat oral tumors could lead to satisfactory appearance without functional problems (Sandeep Kumar *et al.*, 2019) [4].

### History and Clinical Findings

A four years old Jersey cross bred cow had a growth on the right lower mandible and gums including incisors for the past week which disrupted the feeding habit of animal. On palpation, no pain was observed. Further oral cavity was examined for the extent of tumour growth and any abnormalities. All other vital parameters are within the normal range. A radiographic examination of the mandible revealed radiodensity tissue with osteolytic changes noticed.

### Treatment and Discussion

To desensitize the lower lip, the bilateral mental nerve block of 10ml was given on each site just below the 4<sup>th</sup> incisor and local infiltration of 2% lignocaine was given intra lesionally. The

anaesthesia was adequate to perform the surgical intervention. The site of surgery was aseptically prepared. An incision on the ventral aspect of the tumour's growth was made and detached it from the surrounding tissue along the incisors were enclosed with the tumour's growth. For effective haemostasis, cauterization was performed. A surgical excision of tumour growth was performed and the cavity was irrigated with normal saline and then closure of defect by simple interrupted suture. Post operatively animal was maintained with antibiotics, anti-inflammatory, oral mouth wash and liquid feed.



**Fig 1:** Tumour mass in between first and second mandibular incisors



**Fig 2:** Excision of tumours growth



**Fig 3:** Excised odontoma from the lower mandibular region



**Fig 4:** Final closure

### Summary

Tumors originating from odontogenic sources in the jaw were not invasive and can be effectively treated through extensive surgical removal (Fubini and Ducharme, 2004) [1]. Odontomas developed from residual odontogenic epithelial cells, usually in the incisor region of the mandible (Theilen and Mandewell, 1979) [5]. The key takeaway from this research is the successful identification of the characteristics of these tumors. Sharing information about oral tumors in cattle will enhance understanding, leading to proactive measures for preventing economic and productivity-related setbacks, as well as improved strategies for their management and treatment.

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