

「CASE REPORT」

A case of canine maxillary gingival acanthomatous epulis

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Abstract

Acanthomatous epulis is a malignant form of gingival tumor. This is a case of epulis affecting a four-year old, intact, female Maltese dog raised as indoor pet in Iksan city. Clinical examination showed an enlarged palpable mass along the rostral maxillary gingiva. Section of the excised mass showed epithelial overgrowth and expansion from the basal portions through the tissue stroma. Post-surgical radiograph showed displacement of the first and second maxillary incisors. Histochemical staining showed strongly positive reaction to epithelial marker cytokeratin and moderately positive reaction to connective tissue marker vimentin. This case was diagnosed as a form of maxillary gingival acanthomatous epulis. Routine clinical oral examination is suggested.

Key words: Acanthomatous, Canine, Epulis, Histopathology, Neoplasia

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Introduction

Epulis refers to any tumor or tumor-like mass on the gums or gingiva. However, epulis is considered as only

a clinical term. It is commonly seen in dogs but rarely in cats¹⁻⁵). Epulides are characterized by the presence of tumor arising from the periodontal ligament. In dogs, three types of epulides

are recognized: the fibromatous, ossifying and the acanthomatous types^{1,3,4)}.

Only the latter is considered as a malignant form. The fibromatous epulis contains periodontal ligament stroma as the primary cell type. They are responsive to excision. An ossifying epulis contains large amounts of osteoid matrix. This gives it a bony feel while excising. Acanthomatous epulis appears to be a form of ameloblastoma as observed in humans. Recently, acanthomatous epulis has been named as canine peripheral ameloblastoma or canine acanthomatous ameloblastoma³⁻⁶⁾. This case described an acanthomatous neoplastic change in the gingiva of a Maltese dog housed in Iksan city, Korea.

Symptoms

A four year-old intact female Maltese dog, raised as indoor pet was submitted to medical treatment at a clinic in Iksan City. The owner disclosed that the problem was noticed only five days before clinic treatment when the animal manifested reluctance to eat. Close examination of the oral cavity showed up the mass. Clinical examination revealed a gingival mass measured $1.5 \times 1 \times 0.4$ cm diameter protruding from the maxillary gingiva, thus, which caused malocclusion of the upper first and second incisors (Fig 1a). Radiograph was undertaken showed displacement of the incisors (Fig 1b). The mass appeared to embed in the deeper gingival layer. The mass was excised and a sample was submitted to the Department of Veterinary Pathology, Chonbuk National

University for histopathological diagnosis. Paraffin method was done and stained with H&E. The excised mass was likewise subjected to immunohistochemical staining using the following: cytokeratin, vimentin, epithelial membrane antigen (EMA), and Congo red.

Histological examination showed masses of infiltrating epithelial cells extending to the tissue stroma. These epithelial tissues appeared to form a lace-like or finger-like projections (Fig 2a). Indistinct patterns of whorls and some bizarre-shaped cells appeared to invade the capillary walls and the capillary lumen. Immunohistochemistry showed moderate reaction to vimentin (Fig 2 b) and a strong positive reaction to epithelial marker cytokeratin (Fig 2c). EMA and Congo red staining yielded negative results.

Discussion

Oral tumors are considered as a common occurrence among canines particularly the clinical epulides^{2,4,5)}. The etiology of epulis remains vague but occurrence has been reported in many countries. In Korea, there were not many studies that categorically reported the prevalence or incidence rate of canine oral tumors. This case report presented an acanthomatous form of epulis in a dog raised as indoor pet in Iksan city. Based on the radiograph where tooth displacement was seen due to the enlarged mass, there was visible involvement of the deeper layer of the gingiva reaching the alveolar bone. This was impressed as a form of a

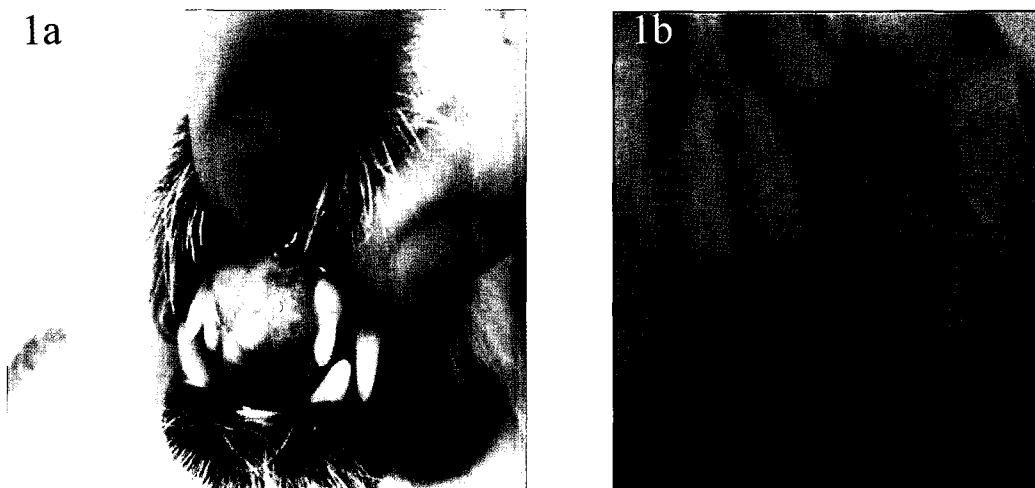


Fig 1a. Gross examination of an exuberant, protruding mass along the rostral maxilla. Note the dental involvement and malocclusion; 1b. Radiograph showing malocclusions of the first and second upper incisors. The mass affected the superficial and deeper layer of the gingiva

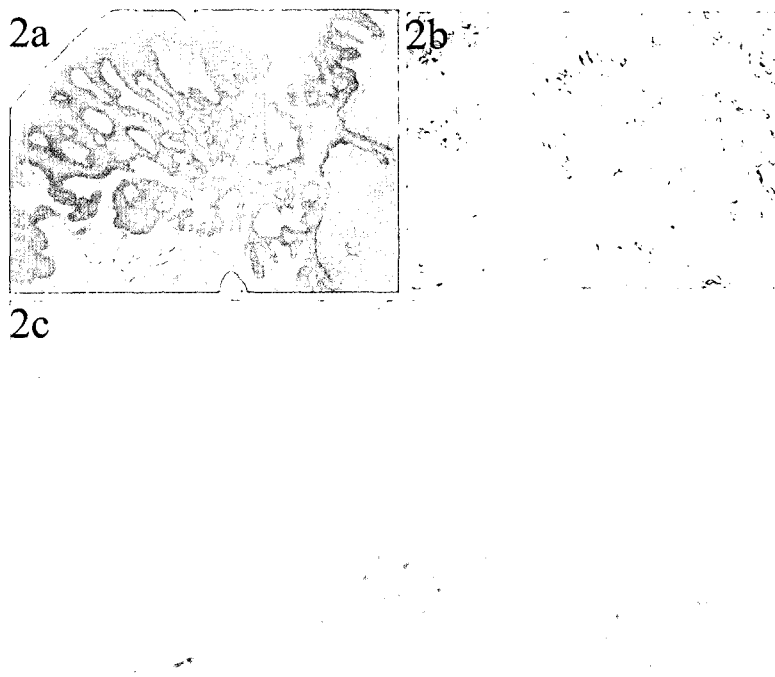


Fig 2a. Histological section showing indiscreet patterns of epithelial overgrowth (H&E, 100X); 2b. A moderately positive reaction with connective tissue marker vimentin (400X); 2c. A strongly positive reaction to epithelial marker cytokeratin (400X)

progressively infiltrating canine epulis.

The histological finding of severe epithelial overgrowth, expansion, infiltration and the strongly positive reaction to cytokeratin that serves as marker for epithelial neoplastic involvement are in

coherence with acanthomatous type of epulis. Epulis has been classified as fibromatous, ossifying and the acanthomatous types¹⁻⁵). The former two types are not characterized by epithelial infiltration. Acanthomatous type involves

the epithelia and this lesion may or may not metastasize to various organs and may involve the alveolar bones^{7,8)}. This case did not explore possible metastasis in other organs. However, radiograph revealed involvement of the alveolar bone.

Following recommendations in studies done with odontogenic tumors in animals it was pointed out that odontogenic tumors should be classified according to whether they are of epithelial, mesenchymal or of mixed epithelial and mesenchymal origin, rather than based on inductive changes. It was emphasized that the clinical behavior implied by ameloblastoma, ameloblastic fibroma and odontoma should be carefully considered before these terms were used as a diagnosis of any odontogenic tumor^{2,4,5)}. Also, caution should be exercised in designating specific odontogenic tumors in animals as being the counterpart of human tumors until their histopathological features and clinical behavior have been proven to be equivalent. In this finding, it may difficult to adapt the recent nomenclature of acanthomatous type as a form of canine acanthomatous ameloblastoma since a dental tissue had not been available for histological assessment, although the gross appearance and dental radiograph have demonstrated deeper involvement of the gingival^{3,4,6)}.

Oral tumors are often diagnosed once the tumor has progressed its growth. Differential diagnoses of canine oral tumors must include: papilloma, squamous cell carcinomas, malignant melanoma, fibrosarcoma and other oral vesicular lesions. Incidence of malignant

oral tumors is higher in dogs^{1,3)}. The reluctance of the animal to feed in this case had helped the owner to discover an abnormal growth on the gum. Some of the epulides may occur in the mandibular portion and would pose late recognition if it was located along the premolar and molar areas in which recognition of the lesion was not easy. In this case, the owner only noticed the lesion when the animal showed unwillingness to eat. The shaggy hairs that tend to cover its face and the oral cavity made the lesion inconspicuous. Thus routine oral examination is suggested to earlier detect neoplastic growth in the canine gingiva.

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