Peripheral dentinogenic ghost-cell tumor: A case report

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Abstract

The dentinogenic ghost-cell tumor is a rare solid variant of the calcifying odontogenic cyst. Few peripheral cases of this tumor with clinical and radiographic documentation have been reported. A case of peripheral dentinogenic ghost-cell tumor is presented and the literature is reviewed.

Introduction

The dentinogenic ghost-cell tumor (DGCT) is an uncommon odontogenic neoplasm, regarded as a solid variant of the calcifying odontogenic cyst. This neoplasm occurs predominantly in later life and consists microscopically of ameloblastoma-like strands and islands of odontogenic epithelium with ghost cells and dentinoid material. Peripheral occurrence of DGCT is rare, and few reports with clinical, radiographic, and histologic documentation can be found in the English literature. The purpose of this report is to present a case of peripheral DGCT and review the literature.

Case report

An 83-year-old black woman was referred to the Surgery Service, Minas Gerais University, School of Dentistry, for evaluation of a painless, slow growing tumoral lesion on the anterior ridge of an edentulous mandible. The polypoid sessile lesion had been noted 2 years earlier (Fig 1). Radiographic examination disclosed cortical resorption in a cup-shaped fashion and faint and diffuse opacities within the bulk of the lesion (Fig 2). The clinical diagnosis was peripheral ossifying fibroma. An excisional biopsy of the tissue lesion was performed, and the specimen was submitted for histopathologic evaluation.

The gross specimen consisted of a grayish piece of tissue, measuring 30 x 15 x 10 mm, and had a firm consistency. Histologic examination revealed a solid tumor with an overlying hyperplastic mucosal epithelium. The tumor mass was composed of ameloblastoma-like strands and islands of odontogenic epithelium with cuboidal to cylindrical basal cell layers and central stellate reticulum-like cells (Fig 3). These elements were associated with abundant eosinophilic ghost cells with shadowy nuclear outlines (Fig 4). Irregular foci of tissue resembling dentin were observed extruding from the islands, in direct connection with the connective tissue. A diagnosis of dentinogenic ghost-cell tumor was made. Postoperative healing was uneventful, and there were no signs of recurrence in 3 years of follow-up.

Discussion

Peripheral occurrence of DGCT is rare. Although Bhaskar reported two cases of peripheral odontogenic tumors that can be interpreted histologically as DGCT, bone involvement cannot be ruled out because no radiographs were presented. Some clinical reports published could also be interpreted as cases of peripheral DGCT, but because only histologic photographs were available in such studies, they were not included in the current review. Vuletin et al reported a case of a peripheral DGCT in the mandible with well-defined margins and no evidence of bone involvement.

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reported a case of a peripheral odontogenic tumor with ghost-cell keratinization, but because the stroma of the tumor was composed of cellular myxoid fibroblastic tissue, it was also excluded.

After a thorough review of the English literature, only two cases of peripheral DGCT with radiographic documentation were found. Günhan et al reported a palatal fibrous swelling on the anterolateral portion of the right maxilla of a 71-year-old woman, while Raubenheimer et al described a slow-growing nodule on the right alveolar ridge of an 82-year-old man. To our knowledge, the present study shows the first clinical documentation of this peripheral tumor.

Peripheral DGCT occurs as a nodular swelling on the edentulous alveolar mucosa of denture wearers. Because of the rarity of this odontogenic tumor and the clinical aspect of the present lesion, it was initially considered a fibrous hyperplasia. This clinical diagnosis was changed after occlusal radiographic examination. The cortical resorption and the presence of small radiopacities within the lesion suggested a provisional diagnosis of peripheral ossifying fibroma. The lesion described by Günhan et al involved slight erosion of the underlying bone.

Although central DGCTs have a high rate of recurrence after surgery, the lack of recurrence of any of the three peripheral tumors reported in the literature, including the present case, suggests a favorable course for this peripheral variant.
References