Journal of Oral and Maxillofacial Surgery, Medicine, and Pathology xxx (2017) xxx–xxx

Contents lists available at ScienceDirect

Journal of Oral and Maxillofacial Surgery, Medicine, and Pathology

journal homepage: www.elsevier.com/locate/jomsmp

Case Report

Peripheral Ameloblastoma: A case report and concise review of literature

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ARTICLE INFO

Article history:
Received 10 January 2017
Received in revised form 26 March 2017
Accepted 27 March 2017
Available online xxx

Keywords:
Peripheral ameloblastoma
Ameloblastoma
Benign tumor
Gingival lesion

ABSTRACT

Peripheral ameloblastoma (PA) is a rare benign odontogenic tumor with histological characteristics similar to that of an interosseous ameloblastoma. It develops in the gingiva and in the alveolar process of the jaws. We report a case of a peripheral ameloblastoma in a 45-year-old male that presented with an exophytic painless swelling on the gingiva on the anterior mandible. Clinical and histopathologic features of this lesion are discussed. This case highlights the need for including peripheral ameloblastoma in the differential diagnosis of a gingival lesion and submitting excised tissue for microscopic examination.

1. Case report

A 44-year-old African American male of Nigerian descent presented with a painless lesion involving the anterior mandibular gingiva that had gradually increased in size over the last year. Clinical exam disclosed a well-circumscribed 10 mm x 6 mm exophytic, non-ulcerated gingival lesion that extended from the lower right central incisor to the lower right canine. The overlying mucosa was healthy and did not present any differentiation from surrounding tissue. The gingival mass was soft and non-tender to palpation. There was associated tooth mobility of the lower right lateral incisor. No other abnormalities were identified on the head and neck exam. The patient's medical and dental histories were noncontributory.

A panoramic radiograph demonstrated a 10 mm x 10 mm area of faint periradicular radiolucency between the roots of the lower right canine and lateral incisor extending to and involving the alveolar process with tooth separation (Fig. 1). The periodontal ligament of the involved teeth appeared normal with intact lamina dura. The differential diagnosis included epulis, pyogenic granuloma, peripheral giant cell granuloma, peripheral odontogenic fibroma, and a peripheral ossifying fibroma.

An incisional biopsy of the soft tissue growth was performed under local anesthetic by an outside surgeon. Microscopic examination demonstrated presence of a plexiform structured epithelial neoplasm. The neoplastic epithelial cells formed large nested structures, the periphery of which was marginated by columnar cells showing reverse polarization and clearing vacuolization at the connective tissue interface. The central cores of the structures were filled with more stellate reticulum.

Based on the clinical presentation and the histological findings; a diagnosis of an intra-osseous versus peripheral ameloblastoma was made.

A CT scan was performed and demonstrated a soft tissue fullness overlying the mandibular osteolytic lesion between the right lateral incisor and canine with dimensions; 10 mm transverse, 10 mm longitudinal x 7 mm antero-posteriorly (Fig. 2).

The patient underwent surgical excision of the lesion via marginal mandibulectomy under general anesthesia. A 1 cm bony margin circumferentially to include one normal tooth on either side of the tumor was established (Fig. 3). The inferior margin of the resection included the periosteum to ensure that bony margins were uninvolved.

Intra-operative radiograph was taken that demonstrated saucerization of bone between the two involved teeth (Fig. 4). The post-operative course was uneventful. No complications or evi-

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http://dx.doi.org/10.1016/j.ajoms.2017.03.014
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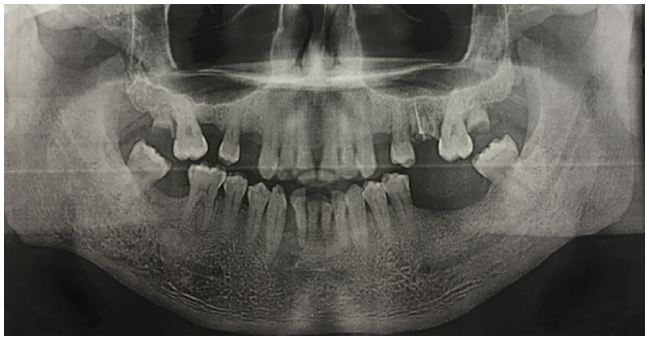

Fig. 1. Panoramic radiograph.
This image demonstrates the 'saucerization' of the alveolar process and bone between the lower right lateral incisor and canine, with evidence of tooth separation.

dence of recurrence has been observed during recovery or over the past 6 months of surveillance.

2. Pathology

Clinical and radiographic findings were discussed with the pathologist to aid in diagnosis. On macroscopic examination, sectioning revealed the tumor to be approximately 0.5 cm from closest anterior mucosal margin. Serial sectioning of the lesion revealed tan-white smooth homogenous cut surface. The tumor measured 15 mm in greatest dimension. The exposed bony margins appeared uninvolved. Tumor appeared to have caused erosion and resorption of the underlying alveolar process. No neoplastic invasion or marrow infiltration was seen.

Microscopic examination demonstrated that there was extensive relationship of the tumor to the overlying surface epithelium, suggesting that the tumor arose directly from the surface epithelium. The tumor islands consisted of a central mass of loosely connected stellate reticulum-like cells with acanthomatous areas surrounded by a layer of columnar cells with well-polarized nuclei, these findings were consistent with a peripheral ameloblastoma (Fig. 5).

3. Discussion

Ameloblastoma is a benign neoplasm of odontogenic epithelial origin that can present with various histological growth patterns. In 2005, the World Health Organization (WHO) identified four distinct subgroups of ameloblastoma: the classic solid intra-osseous/multicystic ameloblastoma, unicystic ameloblastoma, desmoplastic and, the very rare subtype, the extra-osseous or peripheral ameloblastoma [1]. WHO defined it as the "extra-osseous counterpart of the solid/multicystic ameloblastoma" [1]. It is thought to arise from rests of the dental lamina or from basal

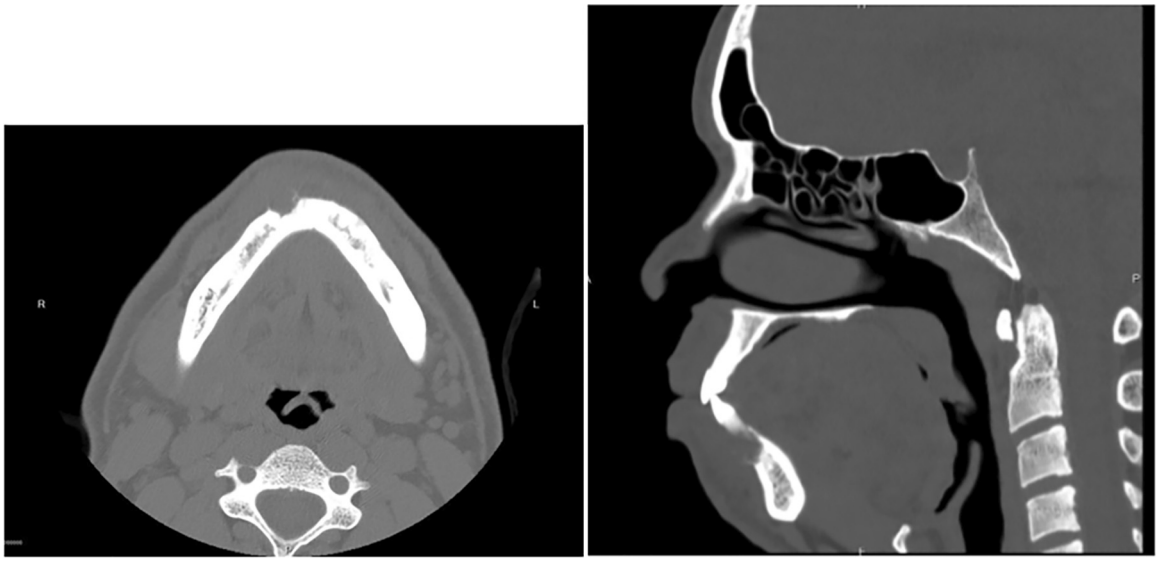

Fig. 2. CT images. Axial and sagittal view of the gingival lesion demonstrated erosion of the alveolar bone but no invasion of the basal medullary bone.

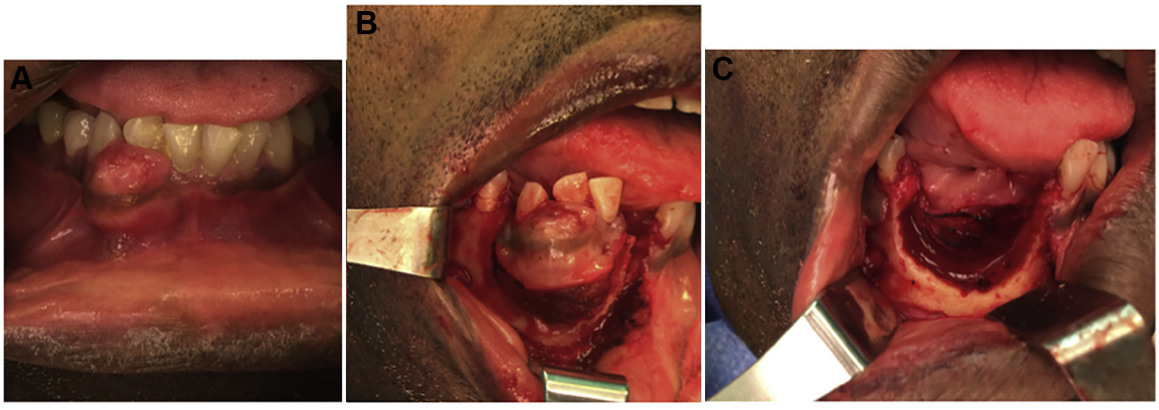

Fig. 3. Intra-operative photographs of the surgical excision of the tumor with linear bone margins of 1 cm.

Please cite this article in press as: Aslam-Pervez N, et al. Peripheral Ameloblastoma: A case report and concise review of literature. J Oral Maxillofac Surg Med Pathol (2017), http://dx.doi.org/10.1016/j.ajoms.2017.03.014