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Emergent gingival cyst of the adult

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The gingival cyst of the adult is a relatively rare, benign odontogenic cyst that maintains an insidious growth rate. This article describes a case of a diminutive fibrotic overgrowth arising on the labial interproximal gingiva between the mandibular right canine and first premolar in a 68-year-old woman. Within 1 year, the lesion had increased in size and appeared vesicular. The morphologic changes warranted surgical excision and histopathologic review. The lesion was diagnosed as a gingival cyst. At a 4.5-month recall appointment, there was no evidence of recurrence. Early lesional detection can potentially mitigate mucogingival defects and improve clinical outcomes.

Received: July 5, 2016
Accepted: August 24, 2016

Key words: diagnosis, gingival cyst, oral mucosa, oral pathology

The gingival cyst of the adult (GCA) is a developmental odontogenic cyst; approximately 300 patients with biopsy-proven lesions have been reported in the English-language literature. The overall incidence of GCA has ranged from 0.03% to 0.15% in archived surgical specimens from oral maxillofacial pathology centers with more than 40,000 total accessions, and GCA has represented 0.22%-0.48% of odontogenic cysts of all subtypes. Moreover, the GCA has been diagnosed in only 1.02% (79/7779) of gingival biopsies in adults (E.A. Dovigi, MSc, unpublished data; personal communication, January 2016). Discernment of the GCA typically has been an incidental finding. Usually, lesions exhibit an insidious growth rate and have been painless. Rarely, the morphologic changes of an emergent GCA have been documented. To extend the knowledge of the GCA, a case report and literature review are presented.

Case report
A 68-year-old woman presented to the dental office for a routine prophylaxis and oral examination without any chief complaints. An intraoral assessment was remarkable for a slightly pink, firm, round vesicular lesion on the labial attached interproximal gingiva of the mandibular right canine and first premolar (Fig 1). The lesion measured 3 mm in diameter and had a sessile base. The proximal teeth were negative to percussion and in good repair.

Proximate to the lesion, the periodontal probing depths were within normal limits, and the gingiva was not tender to palpation. A regional periapical radiograph demonstrated generalized, mild horizontal bone loss and a focal area of osteosclerosis apical to the right canine (Fig 2). The patient recalled that her tongue had felt a textural change to the gingiva approximately 5 years ago. She indicated that the changed area seemed to have increased in size within the past year. An entry made 1 year previously in the patient’s record had denoted a round, minimally raised, 2-mm fibrotic overgrowth at the same site.

A review of the patient’s medical history revealed only a sulfur allergy (patient could not recall actual name of medication) and self-administration of aspirin, fish oil, multivitamins, vitamin B complex, and vitamin D. The patient denied any previous trauma or periodontal surgery in the area, and she was not using any tobacco products.

The phenotypic change of the facial gingival lesion warranted histopathologic assessment, and a scalpel blade was used to perform an excisional biopsy. The day prior to the scheduled surgery, the patient perceived the papule to have “deflated.” Microscopically, the specimen was diagnosed as a GCA; it consisted of a domelike cystic space lined by a thin, flattened, low cuboidal epithelium with nests and cellular plaques projecting into the lumen (Fig 3). Glycogen-rich clear cells were not observed in sections analyzed. Following extirpation, cupping of the subjacent bone was not evident. At a 4.5-month follow-up examination, there was no evidence of lesional recurrence.
Fig 1. Vesicular-like gingival lesion between the mandibular right canine and first premolar (arrows).

Fig 2. Lack of evidence of radiographic cortical erosion.

Fig 3. Photomicrograph of the gingival cyst. Thin, cuboidal epithelial lining with noninflamed connective tissue. Inset: Plaquelike thickening projecting into the lumen (hematoxylin and eosin stain; original magnification 4x; original magnification of inset 20x).

Discussion

The GCA is a developmental odontogenic cyst and believed to be derived from remnants of the dental lamina rests of Serres. It is regarded as the extraosseous counterpart of the lateral periodontal cyst. Another gingival cyst, referred to as the epithelial inclusion cyst, is considered a separate entity and arises from inadvertent tissue implantation following periodontal surgery.

The GCA usually presents as a painless, minimally elevated, firm papule with a sessile base and a pink-red or bluish hue. These lesions occur preferentially on the buccal/labial attached or free gingiva of the mandibular canines and premolars. Isolated cases have been located on the edentulous alveolar gingiva or lingual gingiva or found as ancillary findings in oral mucosal surgical specimens. An array of descriptors have been employed to signify its cystic composition, among them fluid-filled, tense, translucent, bullous, and vesicular.

The moniker of the GCA is somewhat misleading, as the lesion occurs in patients of all ages, including congenitally; the mean age of occurrence is 49 years. There is a decisive 1.43:1 female-male predilection. Reported cases have averaged 5 mm in size, and most lesions range from 1 to 15 mm. Extreme examples have achieved 40 mm in diameter. Approximately 3% of patients have multiple GCAs, and a limited number of lesions have developed bilaterally.

Pressure resorption (saucerization) in the underlying cortical plate has been noted in 45% of surgical fields, although only half of these cases have been detected radiographically and manifested as a subtle round or ovoid radiolucency with a sclerotic border. Long-standing, larger lesions can lead to alveolar osseous destruction and require regenerative intervention. Bone compromise was not evident in the patient in the present case, likely due to the diminutive size of the lesion and its early onset.

Microscopically, the GCA has been described as a cystic space lined by a thin, flattened, low cuboidal or stratified squamous epithelium without rete ridges and with focal nests and plaque-like thickenings that project into the lumen. Furthermore, the surrounding connective tissue wall frequently exhibits glycogen-rich clear cells but is devoid of an inflammatory response.
Histopathologic variants of the GCA have featured respiratory epithelium or intraluminal eosinophilic calcifications and laminated strands of keratin (not seen in the featured case). The treatment of choice for suspected cases of GCA is excision with minimal margins and submission of the specimen for histopathologic assessment. Recurrence is extremely rare, and malignant transformation has not been documented. The clinical differential diagnosis of the GCA should include the reticulospid papilla and various papular gingival lesions, such as the fibroma, exostosis, superficial mucocutaneous, peripheral calcifying odontogenic cyst, eruption cyst, peripheral keratocystic odontogenic tumor, peripheral giant cell granuloma, peripheral ossifying fibroma, pyogenic granuloma, peripheral ameloblastoma, and peripheral odontogenic fibroma. An assortment of malignancies of the gingiva (squamous cell carcinoma, rhabdomyosarcoma, and adenocarcinoma) can masquerade as a benign nodule, particularly evolving lesions and those with atypical gingival presentations.

The change in gingival architecture in the featured patient served as the rationale for performing a biopsy. Timely discovery and surgical removal of lesions in their infancy can mitigate periodontal defects and improve clinical outcomes.

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