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Peripheral giant cell granuloma – Case report

KEYWORDS
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The peripheral giant cell granuloma (PGCG) is considered to be a reactive lesion caused by local irritation or trauma. It often presents as a red or red-blue nodular mass on the gingiva or edentulous alveolar mucosa.[1] Here, we reported a case of PGCG at the alveolar mucosa of the left maxillary tuberosity area of a 29-year-old female patient.

This 29-year-old female patient came to our dental clinic for evaluation and treatment of an elevated sessile nodular mass at the alveolar mucosa of the left maxillary tuberosity area for approximately one month. The nodular mass was red-blue and measured approximately 1.5 × 1.0 × 0.8 cm in size. It is asymptomatic and not tender on palpation. The panoramic radiography revealed no definite destruction of the underlying alveolar bone. The clinical diagnosis was a pyogenic granuloma. After discussing with the patient and obtaining the signed informed consent, the nodular mass was totally excised with additional curettage of the cortical bone surface under local anesthesia. The removed soft tissue specimen was sent for histopathological examination. Microscopically, it showed a fibrovascular mass covered by the parakeratotic and acanthotic stratified squamous epithelium with elongated rete ridges and focal surface ulceration. There was a severe lymphoplasma cell infiltrate in the connective tissue papillae and superficial lamina propria (Fig. 1A and B). The most characteristic feature was the presence of a sheet of multinucleated giant cells in the background of plump ovoid and spindle-shaped mononuclear stromal cells in the deep part of the lamina propria. Moreover, red blood cell extravasation was found throughout the mass, especially in the area with multinucleated giant cells (Fig. 1C, D, E and F). The above-mentioned characteristic findings finally confirmed the histopathological diagnosis of a PGCG.[1–5]

Giant cell lesions are characterized by the presence of multinucleated giant cells of osteoclast phenotype and include mainly giant cell tumor of bone (GCT), central giant cell granuloma (CGCG), PGCG, cherubism, and brown tumor of hyperparathyroidism.[1,2] Cherubism is a hereditary disease or caused by the gene mutations and is easy to be identified by the cherub-like facial appearance.[1] Patients with brown tumor of hyperparathyroidism can be diagnosed by the high seum parathyroid hormone and calcium levels.[1] The most important thing we concern is the differential diagnosis of GCT, CGCG, and PGCG, because GCTs are more aggressive lesions and have a higher malignant transformation rate (15%–30%) than CGCGs and PGCGs.[1] A previous study showed the nuclear immunoexpression of OCT-4 in stromal mononuclear cells in 8 of 10 GCTs, whereas none of the CGCGs and PGCGs demonstrated OCT-4 immunoreactivity.[3] Moreover, the p63 immunoexpression is seen in 100% (10/10) cases of GCT, whereas CGCGs and PGCGs are immuno-negative for p63.[4] Therefore, OCT-4 and p63 immunopositivities in GCTs rather than in CGCGs and PGCGs can be used as cell markers to differentiate GCT from CGCG and PGCG.

Chrcanovic et al.[5] reviewed 2824 PGCG lesions reported in the literature. They found an overall recurrence rate of 9.5% for PGCGs after treatments. If the PGCGs are treated by excision alone, the recurrence rate is 16%. However, if additional curettage or peripheral osteotomy is performed

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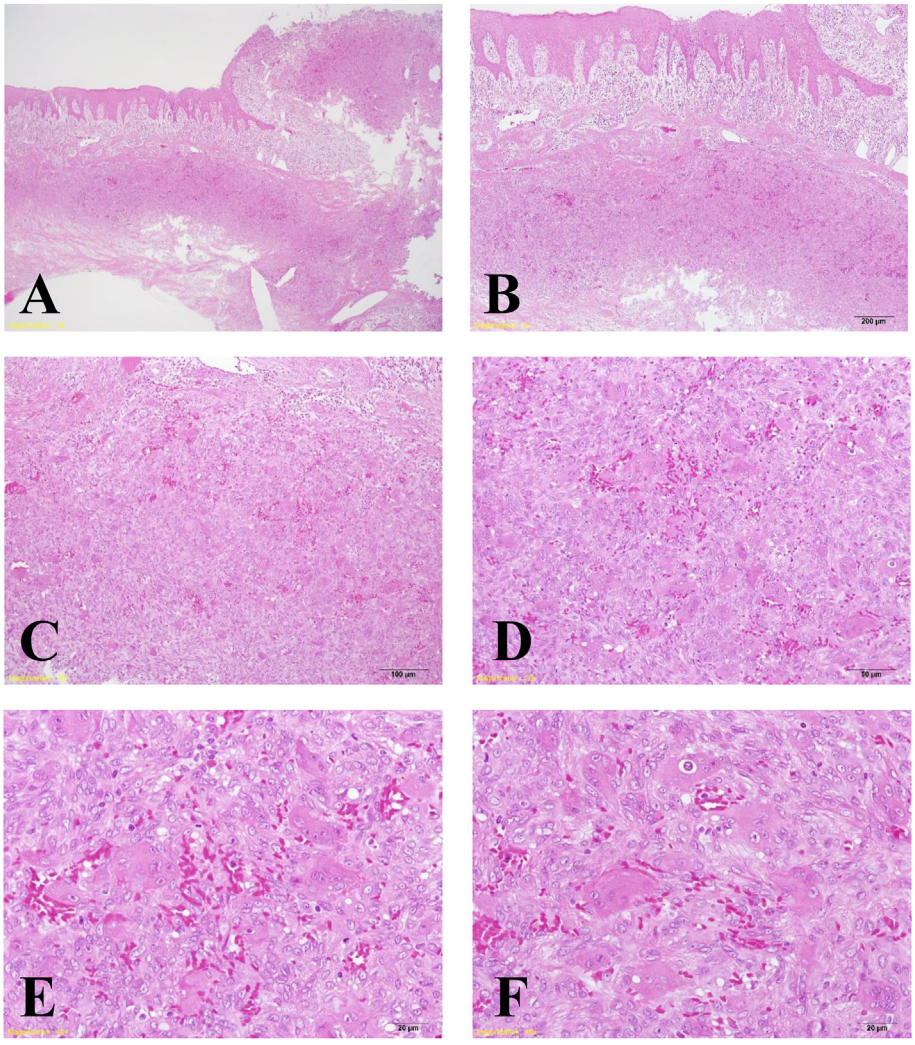

Figure 1 Histopathological microphotographs of our case of the peripheral giant cell granuloma. (A and B) Low-power microphotographs showing a fibrovascular mass covered by the parakeratotic and acanthotic stratified squamous epithelium with elongated rete ridges and focal surface ulceration. There was a severe lymphoplasma cell infiltrate in the connective tissue papillae and superficial lamina propria. (C, D, E and F) Medium- and high-power microphotographs exhibiting a sheet of multinucleated giant cells in the background of plump ovoid and spindle-shaped mononuclear stromal cells in the deep part of the lamina propria. Moreover, red blood cell extravasation was found throughout the mass, especially in the area with multinucleated giant cells. (Hematoxylin and eosin stain; original magnification; A, 2 × ; B, 4 × ; C, 10 × ; D, 20 × ; E and F, 40 ×).

after surgical excision, the recurrence rate drops to 2.8% or 0%, respectively. These findings suggest that surgical excision followed by an additional curettage or peripheral osteotomy is the first choice of treatment for PGCGs.

Declaration of competing interest

The authors have no conflicts of interest relevant to this article.

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