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Radicular cyst with features mimicking a verruciform xanthoma



KEYWORDS

Radicular cyst;
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Verruciform xanthoma (VX) is a reactive lesion which is associated with oral mucosal diseases with epithelial alterations, such as oral lichen planus, lupus erythematosus, epithelial dysplasia, etc.^{1–4} Here, we reported a case of radicular cyst with features mimicking a VX lesion at the periapical area of the tooth 22 in a 31-year-old male patient.

This 31-year-old male patient was referred to our dental clinic for treatment of a persistent radiolucent lesion at the periapical area of the tooth 22 for more than 3 months after endodontic treatment. The patient had mild tenderness when palpating the periapical area of the tooth 22. Because the periapical radiography showed a compact endodontic filling without shortening and the radiolucent lesion did not respond to the endodontic treatment after a follow-up period of more than 3 months, a radicular cyst was suspected clinically. After discussing with the patient and obtaining the signed informed consent, we finally reached a consensus to enucleate the periapical lesion. The enucleation of the periapical lesion together with apicoectomy and retrograde filling with mineral trioxide aggregates were thus performed under local anesthesia. The removed specimen was sent for histopathological examination. Microscopically, it showed a radicular cyst lined by hyperplastic stratified squamous epithelium and a thin layer of fibrous connective tissue wall. The lining epithelium exhibited multiple papillary projections into the cystic lumen (Fig. 1A). The most characteristic finding was the accumulation of lipid-laden foamy histiocytes and a moderate acute and chronic inflammatory cell infiltrate in the connective tissues between elongated epithelial ridges

(Fig. 1B, C, D, E, F, G and H). These particular histologic features looked like a VX lesion associated with the lining epithelium of a radicular cyst. Therefore, the final histopathological diagnosis was a radicular cyst with features mimicking a VX lesion.

The radicular cyst is a sequela of an infected tooth and its root canal.¹ The bacterial toxins from the infected root canal may stimulate the proliferation of epithelial cell rests of Malassez in the apical periodontal ligament and cause acute and chronic inflammation in the periapical area, finally resulting in the formation of a radicular cyst.^{1,5} The acute and chronic inflammatory cells may release proteolytic enzymes that lead to destruction and degradation of hyperplastic epithelial cells and nearby connective tissue cells. The lipid materials and cholesterol released from these degraded epithelial and connective tissue cells are phagocytized by the histiocytes, leading to the accumulation of foamy histiocytes between the elongated epithelial ridges.^{2–4} Nowparast et al.³ suggested that the verrucous and papillary epithelial architecture seen in oral VX is probably secondary to the presence of foamy histiocytes, which affect the metabolism of the epithelial cells and result in formation of a verrucous or papillary epithelial surface. The foamy histiocytes are frequently seen in a radicular cyst.⁵ However, the formation of a VX-like lesion associated with the lining epithelium of a radicular cyst is rarely seen and has not been reported. The radicular cyst is most commonly lined by stratified squamous epithelium and these stratified squamous epithelial cells may function like the keratinocytes of the oral surface epithelium.⁵ Therefore, it is not

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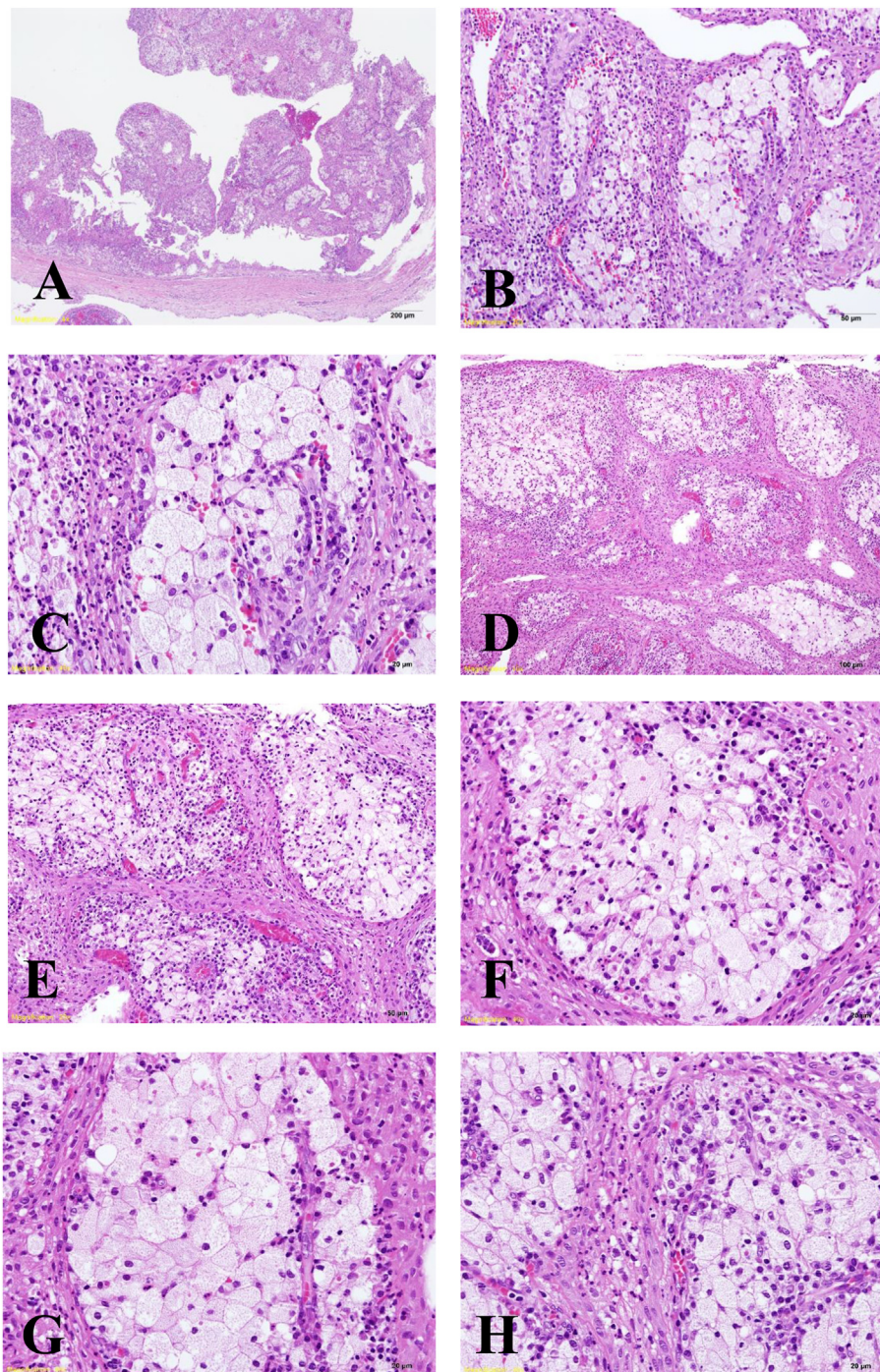


Figure 1 Histopathological microphotographs of our case of radicular cyst with features mimicking a verruciform xanthoma. (A) Low-power microphotograph showing a radicular cyst lined by hyperplastic stratified squamous epithelium and a thin layer of fibrous connective tissue wall. The lining epithelium exhibited multiple papillary projections into the cystic lumen. (B, C, D, E, F, G and H) Medium-power and high-power microphotographs exhibiting the accumulation of lipid-laden foamy histiocytes and a moderate acute and chronic inflammatory cell infiltrate in the connective tissues between elongated epithelial ridges. These particular histologic features looked like a verruciform xanthoma lesion associated with the lining epithelium of a radicular cyst. (Hematoxylin and eosin stain; original magnification; A, 4 × ; D, 10 × ; B and E, 20 × ; C, F, G and H, 40 ×).

impossible that the cyst lining epithelial cells, foamy histiocytes, and chronic inflammatory cells interact together to form a VX-like lesion associated with the lining epithelium of a radicular cyst.²⁻⁴

Declaration of competing interest

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

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