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CASE REPORT

Clinical, tomographic and histopathological aspects of the nasopalatine duct cyst[☆]



Aspectos clínico-tomográfico-histopatológicos do cisto do ducto nasopalatino

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Introduction

The nasopalatine duct cyst (NPDC) is a condition of non-odontogenic development arising from the proliferation of epithelial remnants of the nasopalatine duct, which exists throughout fetal life, and tends to regress after birth. In some cases, remnants may remain, proliferate, and give rise to a cyst.^{1,2} It is a rare condition, usually affecting males between 30 and 60 years of age.³ It is usually asymptomatic, grows slowly, and is detected after routine clinical and X-ray examinations.⁴ When swelling, drainage, and pain from the anterior palate are reported in these lesions, they are associated with secondary infection or pressure on the nasopalatine nerve.² On radiographic examination, the cyst is seen in the midline as a heart-shaped radiolucency in the region of the anterior nasal spine.^{5,6} The treatment is

enucleation of the lesion, and histopathological examination to confirm the diagnosis.

Case report

A 41-year-old female leukoderma patient was referred by the orthodontist with a suspected maxillary injury. The patient had no complaints, and reported 11/21 extractions due to caries as a child. On physical examination, no facial asymmetry was noted and mucosae were intact (Fig. 1A). Computed tomography (CT) showed a single hypodense and well-delineated lesion, approximately 1.0 cm × 0.7 cm × 0.8 cm in size, following the course of the nasopalatine duct (Fig. 1B). Excisional biopsy was performed (Fig. 1C), and the specimen was sent to the Oral Pathology Laboratory, where a cystic cavity lined by thin columnar pseudostratified epithelium, consisting of one to three cell layers and a dense fibrous cystic capsule, was observed on microscopic examination (Fig. 1D). A predominantly mononuclear inflammatory infiltrate was evident in the cyst lumen. From the clinical, tomographic, and histopathological findings, the diagnosis of nasopalatine duct cyst was confirmed.

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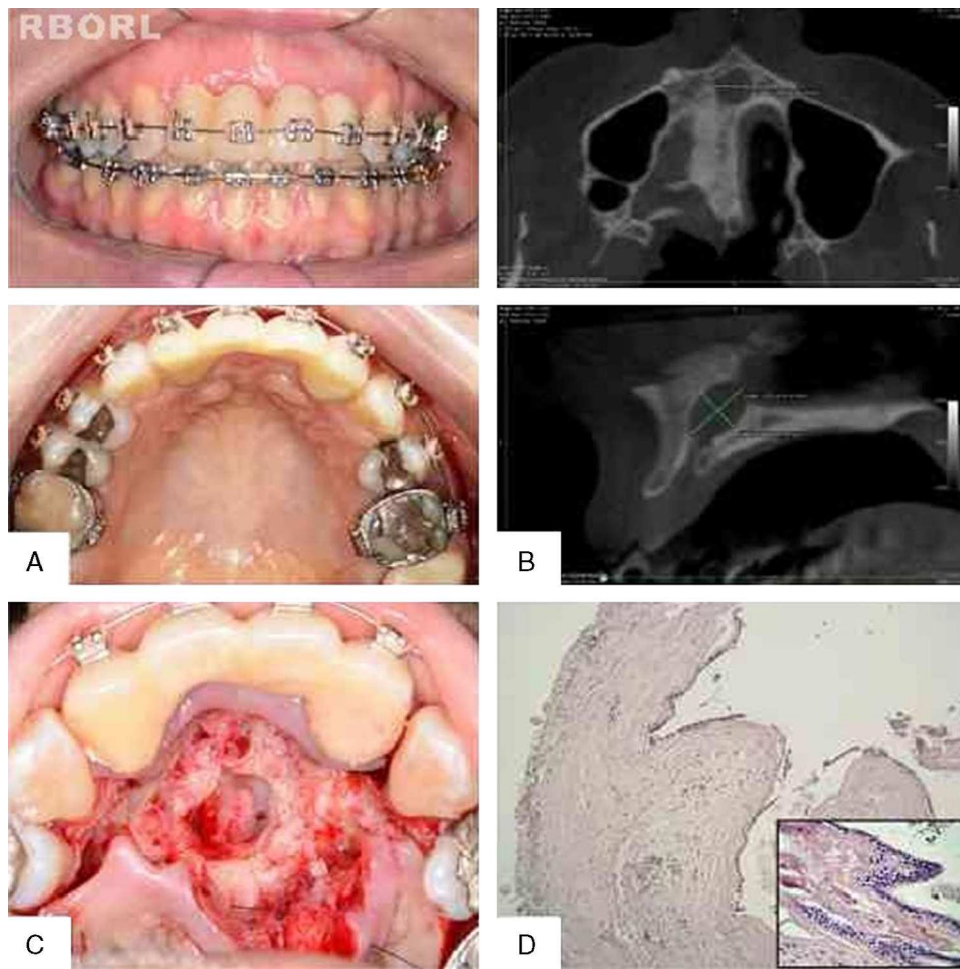


Figure 1 (A) Intraoral clinical appearance, with no abnormalities on physical examination. (B) Axial maxillary CT shows the medio-lateral view of the lesion. Maxillary sagittal acquisition shows anteroposterior and superoinferior views. (C) Surgical cavity after total enucleation of the lesion. (D) Photomicrograph shows the presence of cystic lesion lined by thin pseudostratified epithelium, and dense fibrous capsule with a chronic inflammatory infiltrate (HE, 40 $\times$). With higher magnification, the lower corner on the right shows the presence of round and flat cells in the epithelial lining (HE, 400 $\times$).

Discussion

There is a current consensus that NPDC development is related to the proliferation of epithelial remnants in the nasopalatine duct.² Local trauma, the presence of infection in the region, racial and genetic factors have all been suggested as possible causes³; however, the theory of spontaneous proliferation of epithelial remnants appears to be the most likely explanation for development of the lesion.¹

In the reported case, an infection history due to the loss of superior central incisors from caries in childhood is suggested to be a predisposing factor for CPDC development. However, a few studies report degenerative phenomena in the fetal nasopalatine duct, in which case trauma and infection could not have occurred.²

Imaging is essential in diagnosing and treating NPDC. In the reported case, a CT revealed the lesion to be approximately 1.0 cm, a size for which enucleation is indicated. Radiolucency >0.8 cm in this area should be surgically explored, and if >1.4 cm, an initial diagnosis of cyst is strongly suggested.⁶

Microscopic analysis of this lesion was characteristic of NPDC. The presence of columnar pseudostratified epithelium and a fibrous cystic capsule have also been reported in the literature.^{4,6} However, other types of epithelial linings, such as stratified squamous epithelium and pseudostratified cuboidal epithelium, have also been observed. The existence of diverse epithelia might be related to the cyst position within the duct. Nervous fibers, probably arising from the nasopalatine nerve, blood vessels, and mucosal secreting glands, can also be found.⁴

By means of the clinical and radiographic aspects, the initial diagnosis was nasopalatine duct cyst, in which the first line treatment is usually surgical enucleation after consideration of the location and size of the lesion.³

Final comments

The histopathological characteristics of the lesion, as well as a good clinical and radiographic examination, are essential to confirm the diagnosis and establish an effective treatment.

Conflicts of interest

The authors declare no conflicts of interest.

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