



Huge nasopalatine duct cyst treatment with the help of cystectomy and bilateral fenestration surgery of the nasal cavity: A case report



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ARTICLE INFO

Article history:

Received 14 January 2017

Received in revised form 23 August 2017

Accepted 27 September 2017

Available online 28 September 2017

Keywords:

Nasopalatine duct cyst

Non-odontogenic epithelial cyst

Cystectomy

Fenestration surgery

ABSTRACT

The nasopalatine duct cyst (NPDC) is the most common non-odontogenic, epithelial cyst occurring in the maxilla, and it arises from the epithelial remnants of the nasopalatine duct. It accounts for approximately 2% of all maxillary cysts. A 44-year-old man presented with an asymptomatic swelling in the upper vestibular gingiva and hard palate. Computed tomography confirmed these findings, revealing a cystic mass in the midline of the maxilla that superiorly extended along the nasal septum and inferiorly along the floor of the nasal cavity. It had a maximum diameter of 42 mm. The cyst was treated by cystectomy and bilateral fenestration surgery of the nasal cavity under general anesthesia. The patient had no postoperative complications and showed no evidence of stenosis of the opening or infection in the cavity 6 months after surgery.

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1. Introduction

The nasopalatine duct cyst (NPDC) is a non-odontogenic lesion arising from proliferation of epithelial remnants of the embryologic nasopalatine duct. However, etiologic factors and the exact pathogenesis of the proliferation remain unknown. The epithelial cells may be stimulated by trauma, infections, or mucous retention, but spontaneous proliferation could also be possible [1]. It is the most common non-odontogenic cyst in the maxilla and mainly occurs in middle-aged individuals [1,2]. The standard treatment for NPDC is complete removal through a sub-labial or palatine approach [1,3,4]. Since NPDC is not a tumor, fenestration surgery to the nasal cavity is another treatment option. Here we report a new method of cystectomy and bilateral fenestration surgery of the nasal cavity to prevent post-operative infection.

2. Case report

A 44-year-old man was referred by his family dentist to our department with a chief complaint of swelling in the upper vestibular gingiva and palate. He had no history of maxillofacial trauma or any genetic disorders.

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Intra-oral examination revealed a well-defined swelling approximately 20 × 30 mm in size and located posterior to the palatine papilla. Upon palpation, the swelling was fluctuant and non-tender without pulsations. The palatal mucosa appeared normal in color and had a soft consistency posterior to the incisive papilla. The maxillary anterior teeth were vital.

The patient had no pre-existing medical conditions that were being treated or required treatment.

Imaging studies included plain radiographs as well as computed tomography (CT). The panoramic radiograph showed a large, oval, radiolucent area with well-defined sclerotic borders in the midline of the anterior maxilla, whereas CT showed a 38 × 42 × 40 mm unilocular, egg-shaped, radiolucent area in the same area (Fig. 1). The lesion extended superiorly and inferiorly, with cortical breakdown of the hard palate and loss of bony support to the maxillary incisors. It also communicated with the nasal cavity.

It should be considered in the clinical differential diagnosis such as radicular cyst, ameloblastoma, keratocystic odontogenic tumor and the like, but on the basis of clinical and radiographic evidence, a provisional diagnosis of NPDC was made.

Cystectomy and bilateral fenestration surgery of the nasal cavity was performed under general anesthesia. Bulging in the corner of the nasal septum and floor was observed on both sides. After elevating the mucoperiosteal flap, the exposed bony wall was partially absorbed and removed with the help of bone forceps. The cyst wall was incised and white, cloudy fluid was drained. The cyst wall facing the nasal cavity and palate were resected. Bilateral fenestration surgery of the nasal cavity was performed to fully open, and the surgical sponge was inserted into the cavity (Fig. 2). The bony edge was covered with flaps, and the surgical sponge was removed 5 days after surgery. The patient was discharged a week after surgery.

Histopathologic findings showed a cystic cavity lined by thinning, stratified squamous epithelium. The radiographic and histological findings correlated with that of NPDC (Fig. 3).

3. Discussion

Majority of NPDCs are asymptomatic and are discovered during routine physical and radiographic examinations. The most frequent symptom is swelling in the midline of the maxillary labial gingiva and anterior palate. Pain and fistula drainage of pus may occur if the cyst becomes infected. Typical radiographic findings include a well-circumscribed radiolucency in the

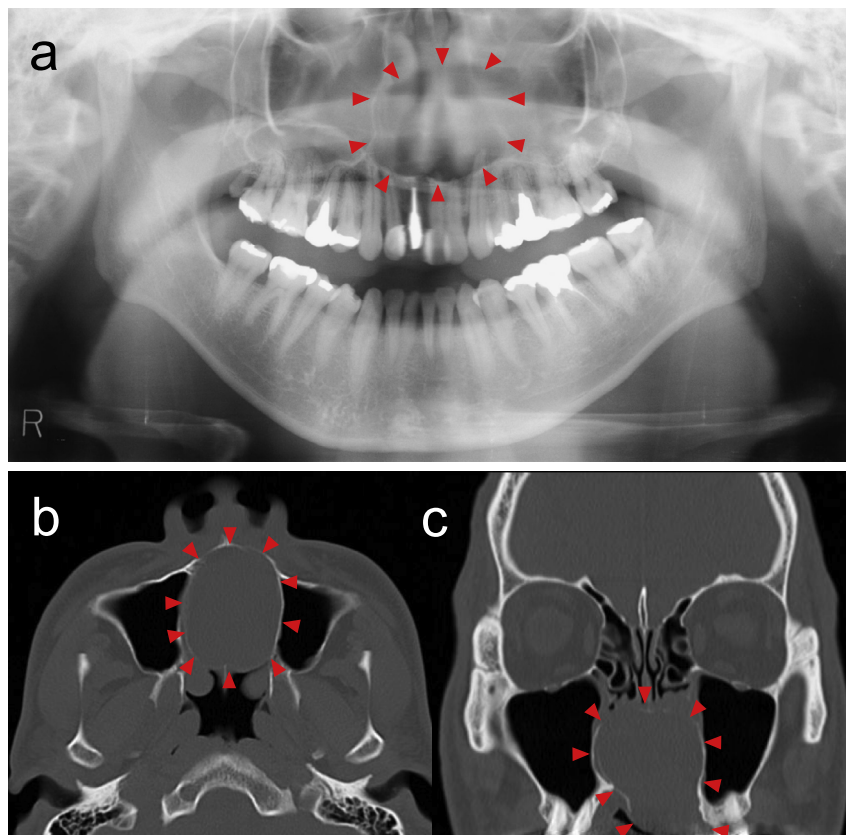


Fig. 1. Preoperative panoramic radiograph and computed tomography (CT). Panoramic radiograph (a), axial (b), and coronal (c) views demonstrating the radio-transparency at the upper maxillary midline.

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