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Case Series
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Nasopalatine Canal Cyst: About Two Clinical Cases

Dicko I[1], Haidara AW[2], Konaté O[1], Ganaba A[1], Cissé N[1], Traoré N[3], Touré T[4], Traoré Y[1], Coulibaly A[1], Wane A[1], Coulibaly O[1], Traoré K[1], Diarra K[1], Konaté N[1], Koné FI[1], Guindo B[1], Soumaoro S[1], Singaré K[1] and Kéïta MA[1]*

[1]*Gabriel Toure University Hospital, Mali*

[2]*Hospital Regional of Segou, Mali*

[3]*hospital Regional of Kayes, Mali*

[4]*Laboratory of Anatomical of Faculty of Medicine and Odontostomatology of Bamako, Mali*

Abstract

Objective: We report 2 cases of clinical observation of nasopalatine cyst treated by enucleation. Through these cases we wanted to study the diagnostic and therapeutic epidemiological aspect of nasopalatine cyst.

Cas Report: Two male patients aged 53 and 32 seen in consultation at the otolaryngology department of the Gabriel Touré university hospital center for nasal obstruction associated with swelling of the hard palate. The first case presented other associated signs such as: Retro-orbital headaches, rhinorrhea. A CT scan of the facial area was performed in our two patients and demonstrated the presence of the cyst. In our first patient, KNP was associated with sphenoiditis. Both patients underwent enucleation with excision of the cyst. A right sphenoidotomy *via* the endonasal route was associated in the first patient.

Conclusion: The KNP is of embryonic origin. It must be differentiated from an apico-dental cyst. Diagnosis is based on radiology and histology. The treatment is surgical. The approach depends on the size and anteroposterior extent of the cyst. The excision must be complete to avoid recurrence.

Keywords: Cyst; Nasopalatine; Enucleation; Sphenoiditis

Introduction

The Nasopalatine Cyst (NPC) is the most common non-odontogenic epithelial maxillary cyst [1,2]. Its frequency varies between 0.08% and 1.5%. It was first described by Meyer in 1914 [1,3-5]. It is in fact a cyst of embryonic origin: It would derive from non-odontogenic vestiges of the epithelium coming from the development of the maxillofacial buds. The new histological classification of odontogenic tumors of the World Health Organization (WHO) of 1992, classifies KNP among non-odontogenic epithelial cysts which also includes the nasolabial (or nasoalveolar) cyst. The nasopalatine cyst can be asymptomatic and discovered incidentally on a dental panoramic, a rhino sinus scan or a Dentascan or be revealed as the result of a superinfection by inflammatory signs or a palatal and/or nasal fistula with purulent discharge [3,5]. Histologically, it appears as a mucous membrane lined with squamous epithelium on the oral surface and a respiratory-like pseudostratified epithelial lining on the nasal slope. The treatment is surgical by complete excision of the vestibular and palate pathways [3,5,6]. Is there an association between nasopalatine cyst and sphenoiditis. The association of nasopalatine canal cyst and sphenoiditis is rarely reported in the literature. We share with you two clinical cases of nasopalatine cyst including one case associated with right sphenoiditis. Through these cases we wanted to highlight the diagnostic and therapeutic aspect and to discuss the relationship between the appearance of a nasopalatine cyst and sphenoiditis.

Case Series

Case 1

A 53-year-old male patient admitted for consultation to the otolaryngology department of the Gabriel Touré University Hospital center for a right nasal obstruction that had been developing in the last 08 years. It was of gradual installation and intermittent evolution. This symptom is associated with anterior and posterior purulent rhinorrhea, cacosmia. The headache was retro-orbital and infra-orbital, non-pulsatile and radiating towards the cloud. She was calmed by taking painkillers, the nature and dose of which could not be known. A notion of swelling of the palate with

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Correspondence:
Oumar Konaté, Gabriel Toure University Hospital, Mali,

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Figure 1: Swelling next to teeth 12 and 21.

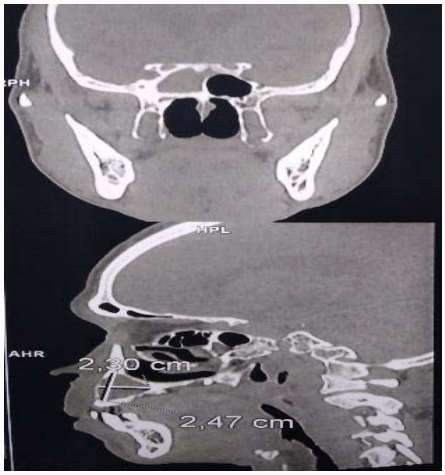

Figure 2: Above, a coronal section showing total filling of the right sphenoid sinus.

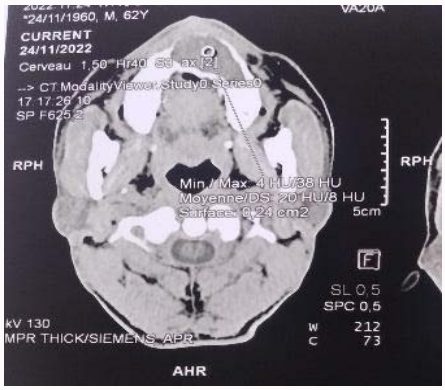

Figure 3: An axial section highlighting the nasopalatine cyst.

the presence of repetitive fistulizations whose date of appearance is not known. This swelling appeared gradually and became persistent. The patient is a known smoker with 52 packs/year. On examination of the patient, we noted:

- A swelling of the floor of the right nasal cavity revealing a hypertrophied inferior turbinate. Mucopurulent rhinorrhea on the posterior wall of the pharynx.
- Poor oral hygiene with multiple dental snags, swelling of approximately 1.5 cm on the upper gum in relation to teeth 11, 21 and teeth 12, 11, 21 and 22 were mobile, firm in consistency, not painful to palpation, depressed. This swelling would repress the median raphe.

At the end of this examination, we requested a CT scan of the facial area. She revealed a cyst next to teeth 11, 12, 21, 22, 23, 24, 25 and 26 (Figure 1) and a total filling of the right sphenoid sinus (Figures 1-3).

The patient underwent a right sphenoidotomy *via* the endonasal route and enucleation with total excision of the cyst *via* the vestibular route under general anesthesia (Figure 4). The postoperative course was simple; the wound healed after one week. Histology of the surgical specimen revealed the presence of a cyst; no signs of malignancy were noted.

Case 2

This is a 32-year-old IK, seen for consultation for hard pleasure swelling that has been going on for 5-years associated with bilateral nasal obstruction and serous rhinorrhea. On admission, his general condition was good and no particular medical and surgical history was noted. On clinical examination, we note a median swelling of the hard palate measuring approximately 4 cm × 4 cm (Figure 5) extending from the midline to the alveolar border, not painful on palpation, soft in consistency, with a regular contour. This swelling is visible at the level of the nasal filter. The mucosa was normal in appearance.

Figure 4: Intraoperative image. The enucleation orifice.

Figure 5: Swelling of the hard palate.

Figure 6: Axial section CT image showing the nasopalatine cyst.

The maxillofacial CT scan (Figure 6) revealed a well-circumscribed mass of fluid density, developed in the nasal cavity at the level of the hard palate. We made the diagnosis of a nasopalatine canal cyst.

The therapeutic attitude consisted of endodontic treatment and enucleation of the cyst. We made an incision at the level of the gingivolabial groove opposite the swelling for approximately 3 cm. Rugination and trepanation leading to visualization of the cyst. Total removal of the cyst pocket through its cleavage plane. We proceeded to close the mucosa in separate simple stitches. The postoperative course was simple.

Pathological examination of the surgical specimen revealed a reworked odontogenic cyst of the keratosis type with absence of signs of malignancy. With a follow-up of two years, we noted no recurrence.

Discussion

The terms nasopalatine or midpalatal or alveolar cyst or palatine papilla cyst are synonymous with KNP. It communicates the oral and nasal cavities and contains in addition vascular-nervous elements (descending palatine, sphenopalatine arteries and nasopalatine nerve), remains of the embryonic nasopalatine canal which in principle disappear during the 1st year of the compete.

The incomplete involution of the remains of this canal, moreover of unknown cause, gives rise to cystic formations [5,7]. Several etiopathogenic hypotheses have been raised: traumatic, infectious, glandular, genetic, ethnic origin or from accessory olfactory organs [2,3,7]. This cyst is more common in men: The sex ratio varies between 1.7/1 and 3/1. KNP can survive at any age, even in a fetus. However, the age groups most affected are the 4th, 5th and 6th decades [7]. In our two observation cases, we did not note any notion of trauma or infection. Our two cases were male and the average age of our patients was 42.5 years. Our first case was associated with right sphenoiditis. Isolated sphenoiditis is a relatively rare pathology, responsible for less than 3% of sinus lesions [8]. The development of posterior sinusitis requires a bacterial and/or fungal infectious agent and possibly factors favoring the perpetuation of the infection by limiting the caliber of the sphenoethmoidal recess. These favoring factors are: An anatomical malformation such as septal deviation at the level of the posterior third of the nasal cavity, malformation of the middle nasal turbinate; a synechia of the sphenoethmoidal recess secondary to intubation, a surgical intervention (septoplasty, ethmoidal surgery, rhino-septoplasty) a benign tumor process (Killian polyp, inverted papilloma) or malignant [9]. We did not find a correlation between nasopalatine cyst and the occurrence of sphenoiditis in the literature. The clinical spectrum of KNP presents as an asymptomatic, painless cyst. Nasopalatine canal cysts are asymptomatic in 30% to 50% and discovered incidentally on a panoramic dental X-ray, rhino-sinus CT scan or Dentascan [1,3,7]. The circumstances of discovery are diverse, KNP can be revealed during a superinfection which results in pain in the anterior palatal and/or anterior nasal spine; a medial inflammatory mass of the upper labial vestibule; an inflammatory, palatal mass of the durum which can also bombard the anterior part of one or both nasal passages; more rarely fistulization on the palatal and/or nasal side with purulent discharge.

The predominant symptomatology in our patients was nasal obstruction and swelling of the palate. The retroorbital headache was present in our first case and would be linked to sphenoiditis because it is predominant in sphenoid sinusitis and can also be at the vertex or frontal level. Among the clinical manifestations of KNP found in the literature, mobility of one of the two upper incisors exists in 78.4% of cases [1]. This mobility was present in our patients. There is no correlation between the size of the cyst and the severity of the symptoms on the one hand and the age of the patient on the other hand [1]. Our first patient had notions of fistulization of the swelling of the hard palate which would probably be linked to superinfections. Radiological examinations constitute, with histology, the two examinations essential for the diagnosis of nasopalatine cyst. CT scan allows visualization of a well-circumscribed mass, far from the dental roots, extra periosteum, with thin wall and fluid content. Adjacent bony structures (absence of bone lysis with sometimes a concave appearance of the external maxillary vestibular table). Magnetic resonance imaging confirms the fluid nature of the mass but is less effective for exploring adjacent bone. As for dental panoramic associated with an occlusal photo with or without opacification of the cyst, it is no longer practiced [1,3,5,7]. Histological examination shows that the KNP is most often bordered by a mixed epithelium: Squamous in the oral portion of the canal and cylindrical, pseudostratified, ciliated, of respiratory type in its nasal portion [5,7]. The standard treatment is surgical. It is an enucleation under general or local anesthesia via the vestibular and palatal route. For cysts less than 6 mm in size, without clinical manifestation, simple monitoring is recommended [1,5]. The after-effects can be reconstructed by palatal graft to close the naso-oral communications. Recurrences are rare, around 0% to 11%. They are due to incomplete excision [3].

Conclusion

The KNP is of embryonic origin. It must be differentiated from an apicodental cyst. Diagnosis is based on radiology and histology. The treatment is surgical. The approach depends on the size and extension in the anteroposterior direction of the cyst. The exercise must be complete to avoid a recurrence.

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