
An unusual case of nasopalatine cyst in Brazilian population

Um caso incomum de cisto nasopalatino na população brasileira

Elaine Cristina Batista Basso¹, Edson Rodrigues de Paula Neto¹, Luciano Lauria Dib¹, Claudio Costa^{2,3}

¹Master Program in Dentistry, University Paulista, São Paulo-SP, Brazil; ²Dental School, University Paulista, São Paulo-SP, Brazil; ³School of Dentistry, University of São Paulo, São Paulo-SP, Brazil.

Abstract

The nasopalatine duct cyst (NPDC) is the most common non-odontogenic cyst typically found in middle-aged Caucasian female in Brazil, however the present report describes a case in a 35 year-old black male. NPDC are usually asymptomatic and are discovered incidentally during routine radiological examination. A cone-beam computed tomography (CBCT) is a valuable tool to localize a cyst within the nasopalatine canal. CBCT enables analysis of the dimension of the NPDC, analysis of the involvement of neighboring anatomical structures and assists in treatment planning. The authors at this case highlight the importance of clinical examination with an unbiased view of age, gender and ethnicity.

Descriptors: Nonodontogenic cysts; Cysts/diagnosis; Cysts/radiography; Cone-beam computed tomography; Nose diseases/diagnosis

Resumo

O cisto do ducto nasopalatino (CDNP) é o mais comum dos cistos não-odontogênicos geralmente encontrado em mulheres brancas de meia idade no Brasil, embora o presente relato descreva um caso em um homem negro de 35 anos de idade. Os CDNP são usualmente assintomáticos e são descobertos acidentalmente durante o exame radiográfico de rotina. A tomografia computadorizada por feixe cônico (TCFC) é uma ferramenta válida para localizar o cisto dentro do canal nasopalatino. A TCFC permite análise da dimensão do CDNP, análise do envolvimento das estruturas anatômicas vizinhas e auxilia no planejamento do tratamento. Os autores neste caso alertam para a importância do exame clínico, com uma visão embasada na idade, gênero e grupo étnico.

Descritores: Cistos não-odontogênicos; Cistos/diagnóstico; Cistos/radiografia; Tomografia computadorizada de feixe cônico; Doenças nasais/diagnóstico

Introduction

NPDC is one of the most common non-odontogenic cyst¹, comprising 10% of jaw cysts and occurring in 1 of every 100 persons with slight male predilection, the mean age being 42.5 years². These cysts are usually asymptomatic, unless they are secondarily infected. These entities are usually treated with surgical enucleation³. With progressive increases in the size of the cyst, the risk for minor postsurgical complications significantly increases.

The introduction of cone beam computed tomography (CBCT) represented an important new development in dentomaxillofacial radiology and precipitated a shift from 2- to 3-dimensional data acquisition, image reconstruction, and visualization. With limited CBCT imaging, 3-dimensional analysis of the exact location and size of the NPDC has become possible⁴.

Literature review

Nasopalatine duct cysts are the most common non-odontogenic developmental cysts originating in the incisive canal of the maxillae¹. These cysts were once formally classified as and called fissural cysts. They were believed to originate in entrapped epithelium in embryonic fissures during the development of the orofacial region¹. The pathogenesis is now believed to arise from

remnants of the embryonic nasopalatine duct². A nasopalatine duct cyst can arise at any age, but it is seen most often in patients between 30 and 60 years of age. There is no gender predilection. These cysts are usually asymptomatic; on occasion, they present as a palatal soft-tissue mass. On CT and panoramic radiography, a nasopalatine duct cyst appears as a well-defined bone defect in the anterior midline of the palate between and posterior to the central incisors. These cysts vary in size; most are less than 2cm, while others are large enough to cause nasal obstruction³.

Case report

The case presented here is that of a black 35-year-old man who had a nasopalatine duct cyst that had been grown in the anterior nasopalatine area causing an asymptomatic bulging of the cortical as we can see on Figure 1 by computed tomography i-CAT (Imaging Sciences International Inc, Hatfield, USA), using 120kVp and the software Xoran CT (Xoran Technologies Inc, Ann Arbor, USA). Images of Figure 2 were obtained with 0,3mm axial slice thickness, transaxial slice of 0,2mm, voxel size of 0,2mm and grayscale depth 14 bits. The radiolucency extension is 20mm height and 45mm depth. The periphery of the lesion was well defined. There was no evidence of reabsorption of the roots.



Figure 1. Axial tomogram showing a rounded hipodensity apparently perforating the nasal fossa cortical

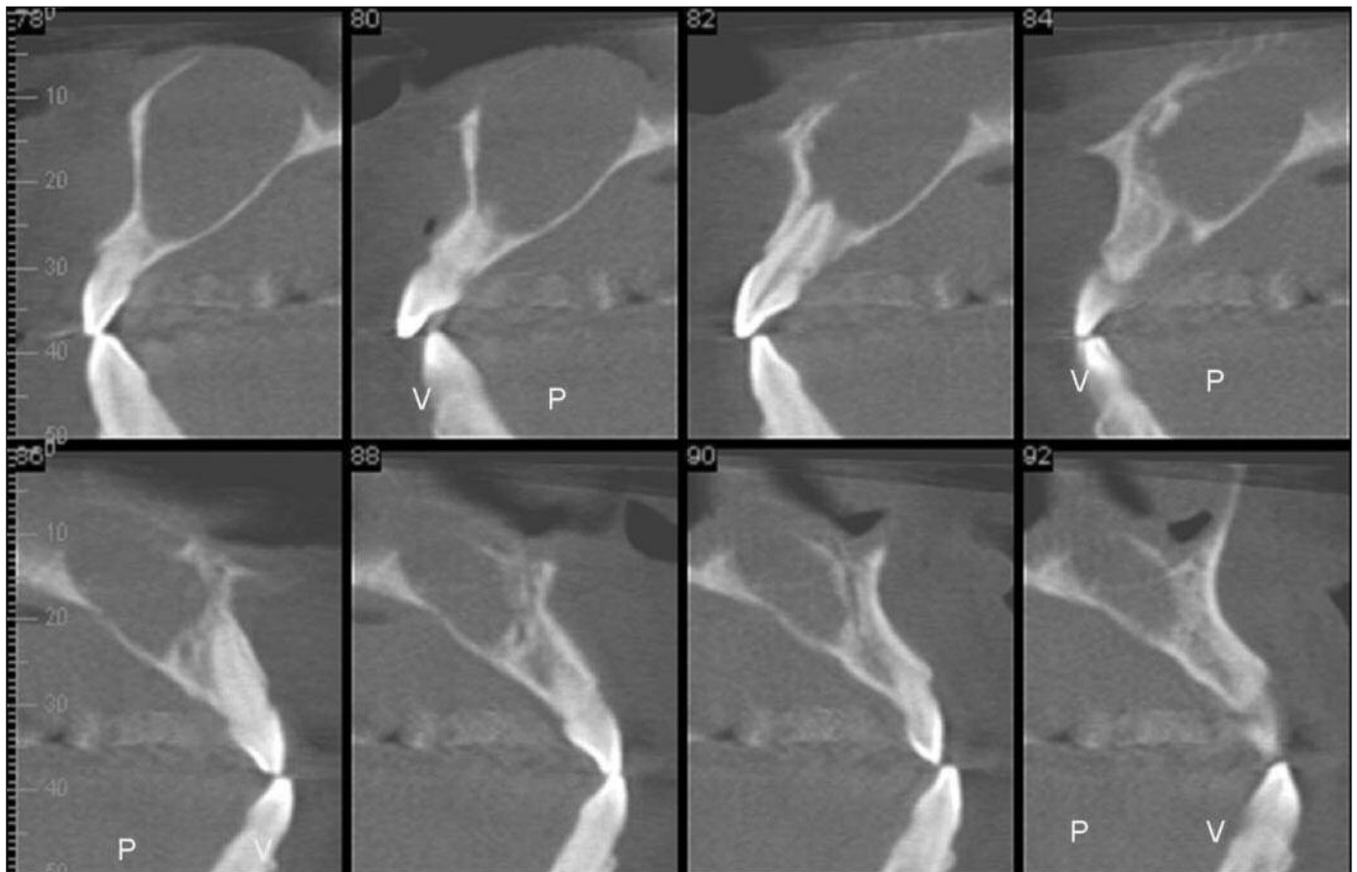


Figure 2. Transaxial tomograms with 2mm of thickness showing the resorption of nasal fossa cortical and the absence of nasopalatine duct

Discussion

A retrospective observational Spanish study⁵ was made comprising a period of 36 years (1970-2006), and yielding a series of 22 patients and one of the conclusions (as the majority of European and American studies) is that nasopalatine duct cysts (NPDCs) are almost three times more common in males than in females⁶, and show a predilection for Caucasian individuals⁷ despite the large number of studies on nOCs in the literature infor-

mation regarding the demographic profile of these lesions in different populations is scarce. Thus, the aim of this case report is to show the different distribution of NPDC in Brazil as NPDC in a recent Brazilian article of Nonaka *et al.*⁸ (2011) shows a majority of appearance in females (68,4% of 26.788 cases) .

As the incisive canal and foramen may normally vary greatly in size, the clinician may have some difficulty in distinguishing between a large incisive foramen and

a small asymptomatic incisive canal cyst on the basis of radiographic evidence alone. Some clinicians follow the rule of thumb that radiolucencies of the incisive canal measuring less than 0.6 cm in diameter should not be considered cystic in the absence of other symptoms. Even though definitive diagnosis of a nasopalatine cyst is more easily made on plain films⁹ other advanced imaging modalities such as computed tomography and magnetic resonance imaging are being used to differentiate this entity from other lesions¹⁰. Simple surgical resection is recommended, followed by clinical and radiological control to ensure correct resolution of the case.

Conclusion

Nasopalatine duct cysts occur in approximately 1% of the population with mean age of 42.5 years. The lesions may be asymptomatic or may manifest as swelling, pain, and drainage from the hard palate. A well-circumscribed, round, ovoid, or heart-shaped radiolucency is seen on radiograph. Computed tomography easily visualizes the radiotransparency on the midline, with well defined sclerotic margins, and informs of the exact location of the lesion. In addition, it facilitates planning of the best surgical approach.

Acknowledgement

We wish to thank the Coordination for the Improvement of Higher Education Personnel – Support Program for the Post Graduate Private Teaching Institutions (CAPES-PRO-SUP) for the support given to this work.

References

1. Shear M. Nasopalatine duct (incisive canal) cyst. *In*: Shear M, editor. Cysts of the oral regions. 3rd ed. Mumbai: Varghese Publishing House; 1992.
2. Wood NK, Goaz PW. Interradicular radiolucencies. *In*: Wood NK, Goaz PW. Differential diagnosis of oral and maxillofacial lesions. 5th ed. Saint Louis: Mosby; 1997.
3. White SC, Pharoah MJ. Cyst of jaws. *In*: White SC, Pharoah MJ. Oral radiology principles and interpretation. 4th ed. St. Louis: Mosby; 2000.
4. Suter VGA, Sendi P, Reichart PA, Bornstein MM. The nasopalatine duct cyst: an analysis of the relation between clinical symptoms, cyst dimensions, and involvement of neighboring anatomical structures using cone beam computed tomography. *J Oral Maxillofac Surg.* 2011;69(10):2596-603.
5. Escoda Francolí J, Almendros Marqués N, Berini Aytés L, Gay Escoda C. Nasopalatine duct cyst: report of 22 cases and review of the literature. *Med Oral Patol Oral Cir Bucal.* 2008;13(7): E438-43.
6. Gnanasekhar JD, Walvekar SV, Al-Kandari AM, Al-Duwairi Y. Misdiagnosis and mismanagement of a nasopalatine duct cyst and its corrective therapy. A case report. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod.* 1995;80(4):465-70.
7. Swanson KS, Kaugars GE, Gunsolley JC. Nasopalatine duct cyst: an analysis of 334 cases. *J Oral Maxillofac Surg.* 1991;49(3): 268-71.
8. Nonaka CFW, Henriques ACG, Matos FR, Souza LB, Pinto LP. Nonodontogenic cysts of the oral and maxillofacial region: demographic profile in a Brazilian population over a 40-year period. *Eur Arch Otorhinolaryngol.* 2011;268(6):917-22.
9. Curtin HD, Wolfe P, Gallia L, May M. Unusually large nasopalatine duct cyst: CT findings. *J Comput Assist Tomogr.* 1984;8(1):139-42.
10. Tanaka S, Iida S, Murakami S, Kishino M, Yamada C, Okura M. Extensive nasopalatine duct cyst causing nasolabial protrusion. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod.* 2008;106(4): e46-50.

Corresponding author:

Elaine C.B. Basso
Rua Doutor Bacelar, 1212 - Vila Clementino
São Paulo-SP, CEP 04026-000
Brazil

E-mail: elaine_basso@superig.com.br

Received October 6, 2011
Accepted January 19, 2012