# Nasopalatine Duct Cyst : An Asymptomatic Palatal Swelling

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The nasopalatine duct cyst (abbreviated NPDC) occurs in the median of the palate, usually anterior to first molars. It is usually asymptomatic, but may sometimes produce an elevation in the anterior portion of the palate. It was first described by Meyer in 1914.[1]

The median palatal cyst has recently been identified as a possible posterior version of the nasopalatine duct cyst.

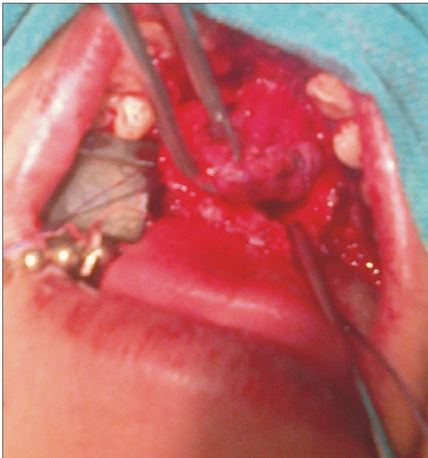

**Fig. 1 : Showing a Nasopalatine Cyst after Flap Exposure**

## Etiology and Diagnosis

Historically, the etiology of nasopalatine duct cysts has been somewhat of an enigma. Although it was originally postulated that the cyst formed from trapped epithelial cells during embryonic fusion of the palatal bones,[2] it is now thought that it forms from oronasal ducts present within the incisive canals.[3][4]

As a cyst, the nasopalatine duct cyst requires histological analysis for a definitive diagnosis. Radiographically, the nasopalatine cyst appears as a well-demarcated round, ovoid, or heart-shaped structure presenting in the midline of the maxilla.[5]

## Incidence

The nasopalatine cyst is the most common non-odontogenic cyst of the oral cavity, at an estimated occurrence rate of 73%.[6]

## Discussion

Nasopalatine duct cysts (NPDCs), also known as incisive canal cysts, are the most common non-odontogenic cyst of the gnathic bones. The cyst is so common, in fact, that it will affect approximately one out of every one hundred persons.[8] A developmental cyst, the nasopalatine duct cyst is believed to arise from epithelial remnants of the nasopalatine duct, the communication between the nasal cavity and anterior maxilla in the developing fetus. As fetal development continues, this connection gradually narrows as the bones of the anterior palate fuse. The result is the formation of the incisive canals that carry nerves and vessels, as well as epithelial rest from the degenerated nasoplatine ducts.

Nasopalatine duct cysts affect a wide age range, however, most present in the forth through sixth decades of life. There is a slight male predilection. Patients may be asymptomatic, with the lesion being detected on routine radiographs, however, many will present with one or more symptoms. Complaints are often found to be associated with an infection of a previously asymptomatic nasopalatine duct cysts and consist primarily of swelling, drainage, and pain[9,10]. The vitality of near by teeth should not be affected; however, it is not uncommon to see evidence of endodontic therapy because the nasopalatine duct cyst was previously clinically misdiagnosed as a periapical cyst or granuloma.

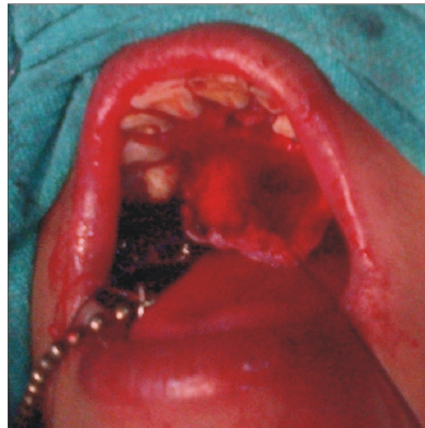

**Fig.2 : Showing the Palatal Flap after Excision of the Nasopalatine Cyst.**

Radiographically, nasopalatine ducts cysts are usually well-circumscribed radiolucencies of the anterior maxilla. The cysts are apical to the roots of the maxillary incisors and rarely cause root resorption. Cysts are round, ovoid or heart shaped due to the superimposition of the nasal spine. Cysts range in size, with an average diameter of approximately 1.5 cm . The incisive foreman, by convention, is not expected to exceed 6 mm in diameter, making the detection of a small nasoplatine duct cyst difficult.

Histologically, the nasopalatine duct cyst is lined by stratified squamous epithelium alone or in combination with: pseudo-stratified columnar epithelium (with or with out cilia and/or goblet cells), simple columnar epithelium, and simple cuboidal epithelium[10]. The fibrous wall generally contains nerves, arteries and veins. Additionally, minor salivary gland tissue and small islands of cartilage may be found. Finally, if the cyst was infected, acute and chronic inflammatory cells will be seen through out the specimen.

Treatment for a nasoplatine duct cyst is complete removal of the lesion, generally by palatal approach. Frequently the biopsy procedure results in adequate treatment. Recurrence is rare [8].

## Clinical Presentation and Treatment

Nasopalatine duct cysts usually present as asymptomatic palatal swellings, but they may rarely be accompanied by pain and purulent discharge.[7] The cysts are generally treated by excision.

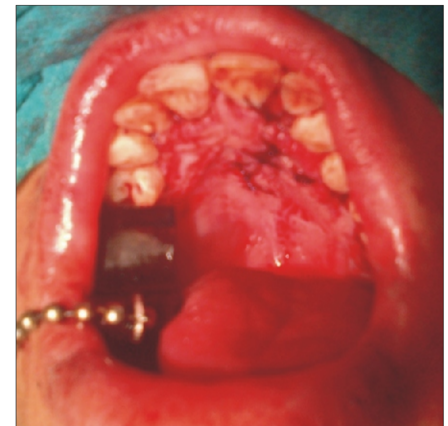

**Fig. 3 : Showing Flap Closure**

## References

1. Meyer, AW. A unique supernumerary paranasal sinus directly above the superior incisors. J Anat 1914; 48:118-129.
2. Albayram, MS, et al. Radiology quiz case: Nasopalatine duct cyst. Arch Otolaryngol Head Neck Surg 2001;127:1283-1285.
3. Gnanasekhar, JD, et al. 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;80:465-470.
4. Swanson, KS, et al. Nasopalatine duct cyst: An analysis of 334 cases. J Oral Maxillofac Surg 1991;49:268-271.
5. Elliott, KA, et al. Diagnosis and surgical management of nasopalatine duct cysts. Laryngoscope 2004; 114:1336-1340.
6. Daley TD, et al. Relative incidence of odontogenic tumors and oral and jaw cysts in a Canadian population. Oral Surg Oral Med Oral Pathol 1994;77:276-280.
7. Vasconcelos, RF, et al. Retrospective analysis of 31 cases of nasopalatine duct cyst. Oral Dis 1999;5:325-328.
8. Francolí JE, Marqués NA, Aytés LB, Escoda CG. Nasopalatine duct cyst: 2008;13(7):E438E443.
9. Swanson KS, Kaugars GE, Gunsolley JC. Nasopalatine duct cyst: an analysis of 334 cases. J Oral Maxillofacial Surg. 1991;49:268271.
10. Vasconcelos R, Aguiar MF, Castro W, Araújo VC, Mesquita R. Retrospective analysis of 31 cases of nasopalatine duct cyst. Oral Dis. 1999; 5(4):325328.