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CASE REPORT

Nasopalatine Duct Cyst: A Case Report

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Abstract

Nasopalatine duct cysts are the commonest occurring non-odontogenic and non-neoplastic cyst of the oral cavity. These develop from the epithelial remnants of nasopalatine duct. It is often misinterpreted as radicular cyst. This case report deals with a case of Nasopalatine duct cyst in a 31 year old male patient along with radiological and histopathological reports. (2019, Vol. 03; Issue 01: Page 29 - 32)

Key words: Nasopalatine duct, Epithelial remnants, Radicular cyst.

Introduction

Nasopalatine duct cyst (NPDC) was 1st de- scribed by Meyer in 1914 as "superneu- mary nasal sinus" (1). It is the commonest occurring non-odontogenic cyst in maxilla and occurs in approximately 1% of the population (2). It is said to be derived from the epithelial remnants of the nasopala- tine duct; which is the communication be- tween the nasal cavity and the anterior maxilla in developing foetus (3).

It is seen in the anterior maxillary region in association with the maxillary central incisors and in maximum cases the asso- ciated teeth are vital. NPDCs occur in 4th- 6th decade of life. Males are affected 1.8-2 times more than females (4).

This cyst is generally asymptomatic and is only incidentally found in patients on rou- tine examination. Larger cysts can lead to symptoms like swelling and pain (5).

Radiographically it occurs as a well de- fined round, oval, pear shaped or heart shaped radiolucency involving the maxil- lary central incisors and extending in the incisive foramen region. Due to its posi- tioning it is often misdiagnosed as periap- ical cyst and median palatine cyst (6). This is the reason why different authors have cited that the prevalence of this cyst might be higher than presented in the literature

(7). Surgical enucleation of the cyst from a palatal approach is method of choice for treatment (4).

Case report

A 31 year old male patient (Fig 1A, B) re- ported to the Department of Oral Medicine And Radiology with the chief complain of pain in upper front teeth region since 1-

1and ½ months.

The pain was sudden in onset, intermit- tent, mild, localized, dull throbbing type aggravated upon chewing food and was re- lieved upon taking medication. The pa- tient also gives a history of swelling in the affected area which was gradual in onset and for a time period even increased in size but was reduced and resolved upon taking medication. The patient had no swelling when he reported to our depart- ment. No history of any trauma was re- ported either. Patient's past medical, den- tal and family history were non-contribu- tory.

Upon clinical examination there was no swelling present, nor there any tooth dis- colouration or any signs of trauma (Fig 1C). Upon probing slight bleeding was pre- sent in the region of 11 and 21. We did the electrical pulp testing of 11 and 21 and both the tooth were vital. The patient gave us feeling of sensitivity on the value of 5 on mid electrical range and was normal positive value (Fig 1D). We gave the provi- sional diagnosis as Localized periodonti- tis. Keeping the history of swelling in mind we kept chronic periodontal abscess in our differential diagnosis.

Fig 1: A, B- Profile view of the patient, C- Intraoral view of the patient, D- Electric pulp testing.

We sent the patient for an intraoral peri- apical radiograph along with a maxillary cross-sectional occlusal view. The in- traoral periapical radiograph (Fig 2A) showed a well defined almost oval shaped homogeneous radiolucency of size 0.5 X 1cm approx in the periapical region of 11 and 21. The lamina dura of both the teeth are intact but there is slight lateral dis- placement of root of 21. There is no pulpal obliteration or loss of crown structure or any kind of discontinuity in the tooth structure. The occlusal radiograph (Fig 2B) showed a well defined, almost pear shaped, homogeneous radiolucency of size 1 X 1.5cm approx in the periapical region of 11 and 21; extending from the periap- ical region of 11 and 21 upto the palatal midline. There is lateral displacement in the root region of 11 and 21. The radiolu- cency is surrounded by a well- defined ra- diopaque border. We gave the radiological diagnosis as Benign Cystic Lesion with dif- ferential diagnosis as Nasopalatine duct cyst, Median palatine cyst and Radicular cyst.

The earlier differential diagnosis of chronic periodontal abscess was ruled out radio- graphically because the radiolucency was well defined and not ill defined and was also more than 1cm in diameter. Also the lamina dura was intact and there was no visible bone loss in the affected region.

We first asked the patient to get a routine blood test before proceeding for treatment and the reports were all under normal lim- its.

We sent the patient to Department of En- dodontics And Conservative Dentistry for the root canal treatment of 11, 12, 21 and 22 followed by to the Department Of Oral And Maxillofacial Surgery for the surgical removal of the cystic lesion.

The root canal treatment was successfully performed (Fig 2C) and the cystic lesion was removed surgically (Fig 3A, B, C). The surgical specimen (Fig 3D) was sent for histopathological analysis to the Depart- ment Of Oral Pathology And Microbiology.

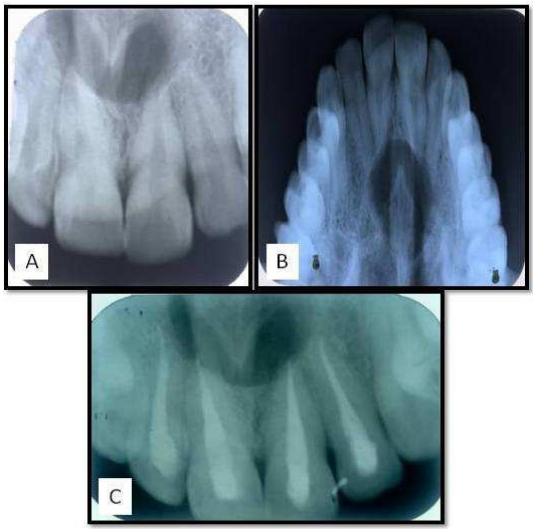

Fig 2: A- Intraoral Periapical Radiograph showing the lesion, B- Occlusal view showing the Pear Shaped Radiolucency, C- Root Canal treatment done.

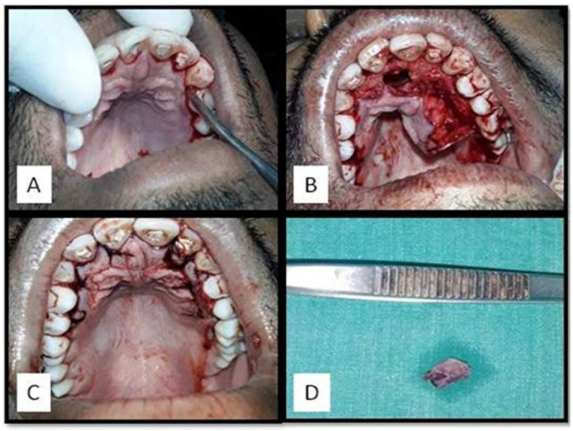

Fig 3: A, B, C- Surgical procedure, D- Surgical specimen.

The histopathological report stated the presence of cystic lumen lined by epithe- lial lining with underlying fibrous connec- tive tissue wall. The connective tissue wall shows areas of haemorrhage, heavy colla- gen deposition and chronic inflammatory cell infiltration particularly lymphocytes (Fig 4). Under high magnification the epi- thelial lining showed pseudo-stratified cil- iated epithelium (Fig 5). Based on the his- topatholgy the diagnosis was given as Na- sopalatine Duct Cyst.

We considering the clinical, radiological and histopathological features gave the fi- nal diagnosis as Nasopalatine Duct Cyst or Incisive Canal Cyst involving 11 and 21.

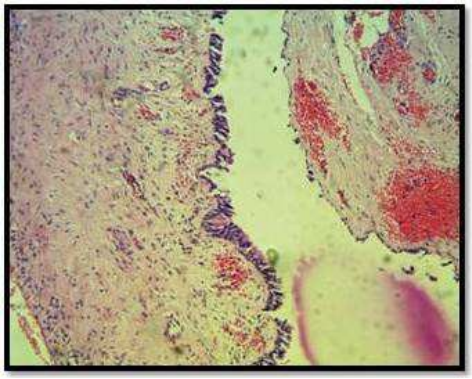

Fig 4: 10X magnification showing Cystic lumen, Connective tissue wall, areas of haemorrhage, chronic inflammatory cell infiltration.

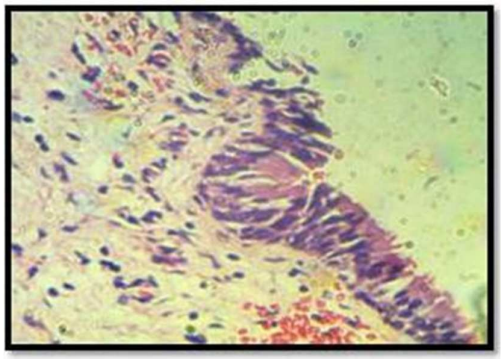

Fig 5: 40X magnification showing Pseudo-stratified Ciliated Epithelial lin- ing.

The differential diagnosis of radicular cyst

was finally excluded after the histopatho- logical report as psuedostratified ciliated epithelium is not seen in radicular cyst. Moreover clinically the affected teeth were vital as well which also helped us in ruling out this diagnosis.

The patient was recalled after 7 days for suture removal and will be recalled after 1 month for follow up.

Discussion

Nasopalatine duct cysts are the most com- mon epithelial and non odontogenic cysts occurring in the oral cavity. It is a devel- opmental cyst and is supposed to be de- veloped from the proliferation of embry- onic epithelial remnants of nasopalatine duct. The etiology of the cyst at times has been reported to be bacterial infection and trauma that can stimulate the nasopala- tine duct remnants to proliferate. However there is not much evidence present to sup- port this hypothesis (8). Main (1970) in his theory has explained that NPDCs like ker- atocysts develop spontaneously (6). In our case there was no history of trauma or bacterial infection so it was a case due to spontaneous development.

It occurs as a heart shaped, round, oval or pear shaped radiolucency involving the apex of maxillary central incisors. In our case the lesion was an almost oval to pear shaped radiolucency involving 11 and 21. The involved teeth in cases of NPDCs are vital in most of the cases and it was same in our case as well as it gave true positive value upon electrical pulp testing.

It is reported that 71.8% of NPDCs have squamous, columnar, cuboidal or a com- bination these epithelium histopathologi- cally. Only 9.8% have pesudostratified cil- iated epithelium which is also seen in res- piratory tract (4). In our case pseudo-stratified ciliated epithelium was seen un- der high magnification (40X).

Our case had all the typical clinical, radi- ological and histopathological feature of Nasopalatine duct cyst.

Conclusion

This cystic entity is very interesting one and the diagnostician should have proper knowledge of its features so that proper di- agnosis can be done. Failure to diagnose can lead to misinterpretation of other le- sions.

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