Case Report

Nasopalatine Duct Cyst – A Diagnostic Plight

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Abstract

Nasopalatine duct cyst is considered to be the most common non-odontogenic cyst in the maxillofacial region. It is a developmental, epithelial, non-neoplastic cyst that develops in only a single anatomical location – the midline anterior maxilla. Nasopalatine cysts are usually asymptomatic and are often discovered incidentally during routine radiological examination. Present case modelled a diagnostic plight by minimal clinical presentation and investigative findings.

Keywords: Nasopalatine duct, nasoplatine duct cyst, non-neoplastic cyst, non-odontogenic cyst, maxillofacial region

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Introduction

Nasoplalatine duct cyst (NPDC), an epithelial and nonodontogenic cyst first ever described by Meyer in 1914.[1] It originates from the epithelial remnants along the nasopalatine duct. Nasopalatine duct is the communication between anterior maxilla and nasal cavity.[1,2] It regress in fetal life, later on persistent ductal epithelium leads to cyst.[4] In literature review, conflicts are present regarding gender predilections.[1-3] and it affects wide age range from 4th to 6th decade of life.[2]

NPDC is generally asymptomatic and detected as incidental findings but sometimes as swelling in anterior palate[4] behind the papilla can be reported. Location of cyst exhibits close proximity to the apices of upper anteriors and hence can cause diagnostic dilemma. The objective of the article is to report a case of nasopalatine duct cyst posing dilemma for diagnosis.

Case Summary

A 19-year old female patient reported with a complaint of pus discharge from upper front region of tooth for 7 months. On detailing the history gradual onset of swelling was noted 7 months back it was intermittent in growth associated with pus exudation and gradual subsidence followed by recurrence after sometimes. It was not associated with any history of trauma. Patient experienced pus discharge with salty taste from the same region. Extra orally no other abnormality was noted and no lymphadenopathy was detected. On intra oral examination, solitary, sessile, diffuse mid swelling was seen in midline just behind incisive papillae posing as elevation of palatal rugae, approximately of 3mm diameter, ill-defined borders, circular shaped, normal overlying mucosa. On palpation it was soft in consistency, non-tender, non-mobile, reducible, with exudation present.

Hence, a provisional diagnosis of lateral periodontal cyst (fig.1) was established based on clinical findings with a differential of periodontal abscess, gingival abscess, cyst of palatine papillae, incisive canal cyst. For further investigation, pulp vitality test for 11 12 21 22 by thermal test and electric pulp test were done. Vital pulp response was noted. Later, radiographic investigation, e.g., intraoral periapical radiograph (IOPA) (fig. 2a, 2b) was done.

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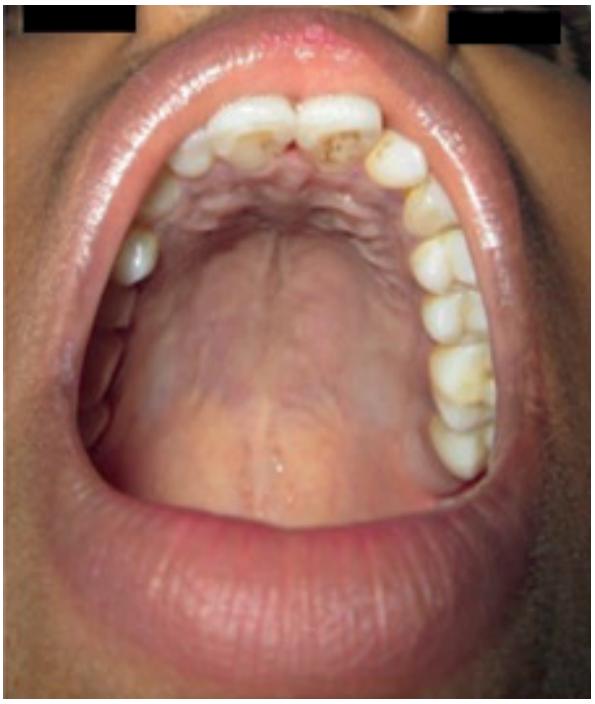

Figure 1: Intraoral swelling found during examination (1st visit)

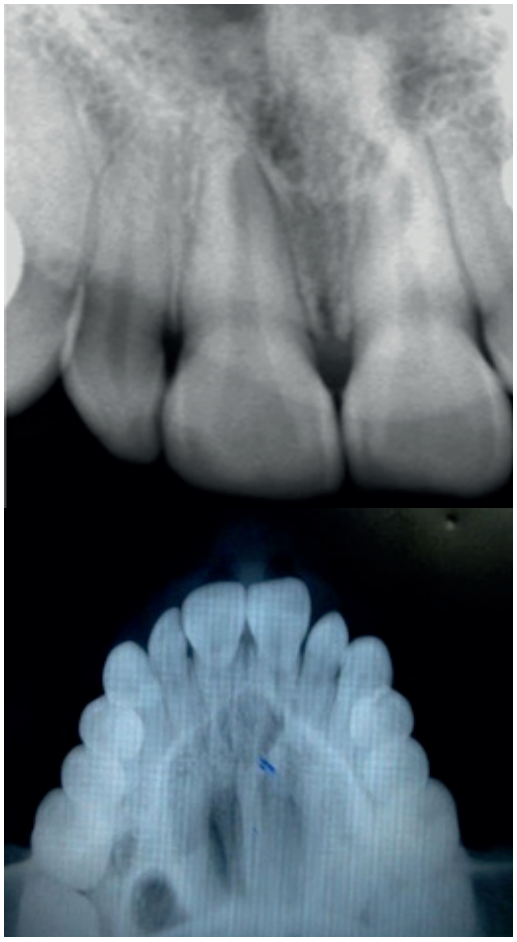

Figure 2 (a,b): IOPA at 11 and 21 (maxillary cross-sectional occlusal view)

Tablet Metronidazole 400 mg 8 hourly was prescribed as symptomatic treatment. On her next visit, the patient was non-reactive to the treatment; therefore, tablet Amclaid 500 mg (Amoxycillin+Clavulanic Acid) 8 hourly for 3 days was prescribed. On her third visit, the patient was not relieved of symptoms (fig. 3), therefore, a fine needle aspiration cytology (FNAC) examination was done and straw-colored fluid with mixture of blood was revealed (fig. 4).

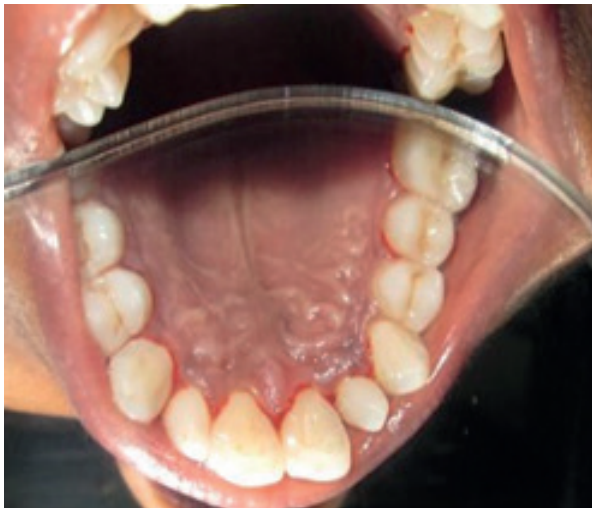

Figure 3: Intraoral lesion seen during the 3rd visit

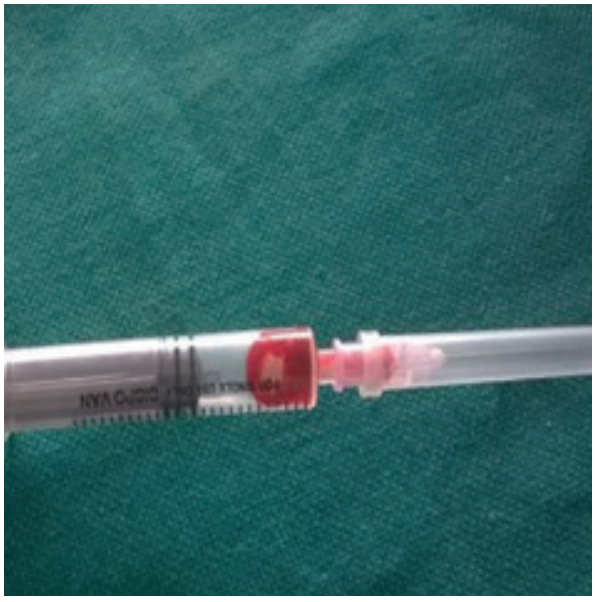

Figure 4: Intralesional aspirate showing a straw-colored fluid with mixture of blood

Later, on excisional biopsy, histopathological findings revealed parakeratinized stratified squamous epithelium showing moderately collagenous connective tissue stroma, which is relatively free of inflammation (figure 5a). The

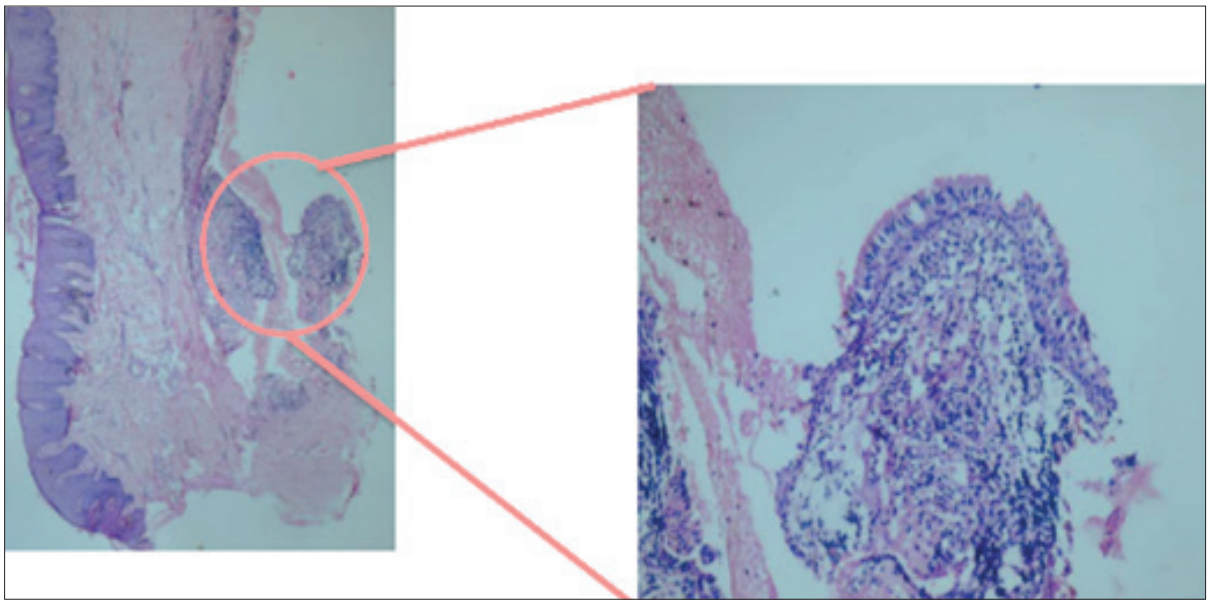

Figure 5 (a,b): Histopathological examination of the intraoral lesion

deeper periphery of the connective tissue is lined by thin non keratinized epithelium with focal areas of psuedostratified columnar ciliated epithelium. The connective tissue adjacent to the cystic epithelium shows a moderately dense patchy chronic inflammatory infiltrate predominantly composed of lymphocytes (figure 5b). Those histopathological features were consistent with our provisional diagnosis – nasopalatine duct cyst.

Discussion

NPDC has unknown etiology however hypothesis of stimuli due to trauma, infection exist.[3] In present case no history of previous trauma or infection was present. It is earlier known as fissural cyst and according to WHO classification it is defined as a non-odontogenic, developmental, epithelial cyst of the maxilla.[4] NPDC are mostly asymptomatic, or oligosymptomatic, slow growing and accidentally discovered. Symptoms, if present are generally of well-defined swelling and associated pain near incisive papilla at the midline of palate. Present case reported symptom of very mild swelling with occasional pus discharge only not associated with pain. Other symptoms which can be reported are tumefaction at midline in palatal and vestibular region, bony expansion, abscess, bulging of nasal cavity, nasal septum distortion, slow healing after dental extraction.[5] In some cases patient reports of salty taste,[6-8] due to overflow of cystic content into oral cavity as it was reported in the present case.

NPDC is diagnosed based upon patients' reminiscence of symptoms, clinical examination done by operator and radiographic examination. In clinical setup with limited investigative facilities as 3D imaging, probabilities of misdiagnosing the lesion are more. Differential diagnosis from periapical cyst or odontogenic keratocyst of anterior maxilla is important to rule out by pulp vitality test.[4-7]

Nasopalatine duct cyst (NPDC) poses a difficulty to diagnose case for clinician due to its anatomical location and subtle symptoms[8] as it was in the present case. As we have seen, the present case did not have typical clinical and radiographic features of a nasopalatine duct cyst; hence, it stands out for the diagnosis of similar lesions, which can easily be misread as periapical cyst and unintended root canal therapy of surrounding vital teeth can be evaded.

Conclusion

This case of nasopalatine cyst of 19-year-old female patient was one of its kind due to its subtle clinical presentation and no associated history along with its anatomical location making it difficult to diagnose by clinician. The case is presented to create awareness among healthcare providers (as a part of knowledge dissemination).

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Author's contribution: All authors were equally involved in concept and design, literature search, compilation, major revision and final approval of the manuscript.

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