

Concurrent Occurrence of Nasopalatine Cyst and Impacted Supernumerary Tooth

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Abstract

Developmental cysts in the jaw are mostly coincidental finding. Nasopalatine cysts occurs in approximately 1% population. Epithelial remnants or entrapment during formation of jaws, trauma, bacterial infections or mucous retention are possible etiological factors. Supernumerary tooth can be observed as an extremely rare event, although cases associated with mesiodens were reported. Here is a case report of 35 year old patient had a nasopalatine cyst and also impacted supernumerary tooth in routine OPG. As vitality of central incisors are retained it is diagnosed as nasopalatine cyst. Enucleation along with surgical removal of impacted supernumerary tooth was done and healing was satisfactory.

Keywords: Nasopalatine duct cyst, Developmental cyst, Supernumerary tooth, Maxilla

INTRODUCTION

Nasopalatine duct cyst (NPDC) was first ever described by Meyer in 1914.^[1] It represents up to 1% of all maxillary cysts^[2] and almost 3–4 times more common in males than females.^[3] The etiology underlying these lesions is unknown, but hypothesis of spontaneous proliferation from embryonic tissue remains other possible etiology including trauma, poor fitting dentures, or existing local infection.^[3,4] Supernumerary tooth can be observed as an extremely rare event, although cases associated with mesiodens^[5] were reported. This case report presented a NPDC in a 35-year-old male patient who was asymptomatic and been diagnosed with nasopalatine cyst and simultaneous occurrence of impacted supernumerary tooth unrelated to cyst in routine radiographic examination.

CASE REPORT

A 35-year-old male patient presented with pain in lower left back tooth region since 1 year. On routine, radiographic examination with orthopantomogram found well-defined heart-shaped radiolucency with radiopaque border measuring about 1 × 0.5 cm in midline and above the apices of roots of 11 and 21, and impacted supernumerary tooth at the apices of roots of 22 and 23. The patient was asymptomatic and no clinical changes were evident at the site of cyst, maxillary incisors have no carious lesion, and no associated history of trauma. Occlusal radiograph was taken for confirmation, which showed well-circumscribed heart-shaped radiolucency in the midline being symmetrical bilaterally

in anterior maxilla between roots of central incisors (Figure 1). No evidence of root resorption is seen. Based on clinical and radiographic finding it is diagnosed as nasopalatine duct cyst.

Pulp vitality test was performed for 11 and 21 to check for the vitality of teeth which showed positive response. Diagnostic impressions were taken for palatal stent preparation and tube shift technique was used to identify the location of impacted supernumerary tooth. After the due consent of the patient, enucleation of cyst was done under local anesthesia by palatal approach with mucoperiosteal flap elevation from 14 to 25 teeth, a bony window identified in the mid palatal region 1cm away from 11 and 21, complete enucleation of cystic lining is done with severing of nasopalatine vessels, and nerve (Figure 2) and surgical removal of impacted supernumerary tooth done in the same appointment. After the closure of the flap, palatal stent was placed to stabilize and adapt the flap to the palatal bone which aids in better healing and prevent flap ischemia and necrosis (Figure 3). Immediate 1st day post-operative Occlusal radiograph was taken to ensure complete enucleation of cyst and complete removal of impacted tooth. Excisional biopsy sent for histopathological examination

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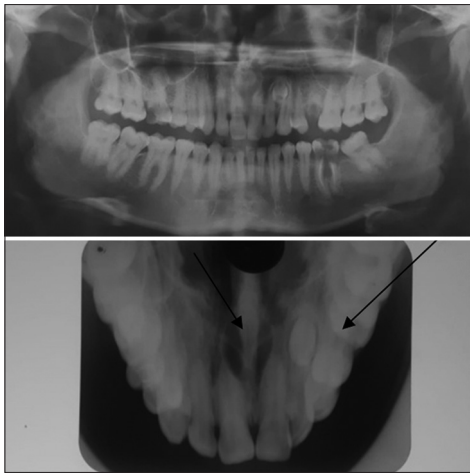


Figure 1: Orthopantomogram and Occlusal view shows the characteristic heart shaped radiolucency with radiopaque border at the apices of 11 and 21 and impacted supernumerary tooth



Figure 2: Flap elevation through palatal approach and appreciation of bony window with nasopalatine nerve and vessels at the incisive foramen

which revealed cyst wall lined by flattened to cuboidal epithelium with underlying fibrocartilagenous tissue, focal nerve bundles, mild lymphocytic infiltrate, areas of congestion, and blood vessels which are the characteristic features for NPDC (Figure 4). Post-operative 1-month follow-up showed good healing.

DISCUSSION

NPDC is a non-odontogenic developmental cyst. It may develop at almost any age but most common in the 4th–6th decades of life. It is located in the midline at incisive papilla. During fetal development, the duct gradually narrows until one or two central clefts are finally formed on the midline. The neurovascular bundle is located within the duct and emerges from its intrabony trajectory through nasopalatine foramen. Cyst range in size, with average of approximately 1.5 cm and incisive foramen, is not expected to exceed 6 mm in diameter. The absence of lamina dura and enlargement of periodontal space around the apex of central incisor indicates inflammatory lesion. The vascular and neuronal elements emerge separately;



Figure 3: Palatal stent placed to stabilize the flap for better healing

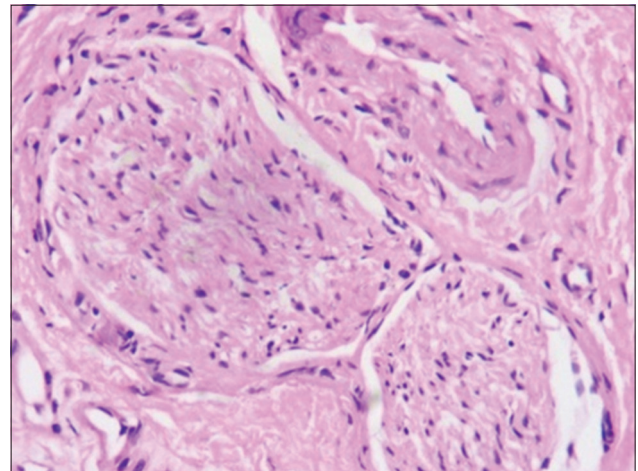


Figure 4: Microscopic view in $\times 10$ shows the neurovascular bundle

in this sense, foramina containing exclusively vascular elements are known as Scarpa's foramina.^[6]

NPDCs are usually central lesions, and radiographically, they are seen as well-defined round/oval radiolucencies in midline, although some lesions appear characteristic heart shaped,^[6] either because they are notched by nasal septum during their expansion or because the nasal spine is superimposed on radiolucent area. During similar lesions, it may be misdiagnosed as periapical lesion. This is why many authors believe that the prevalence is actually higher than presented in the literature.

Supernumerary teeth also known as “hyperdontia”, a condition where more than normal number of teeth present in jaws.^[7,8] The frequency of supernumerary teeth ranges from 1 to 3 percent.^[9] According to Luthen, 97% of supernumerary teeth are located in anterior region and 3% of cases are in premolar site.^[10] NPDC and presence of supernumerary tooth are an extremely rare condition. The present case had typical radiographic features of a NPDC. The importance of this case is in the diagnosis of such lesions which can easily be misinterpreted as periapical cyst and inadvertent root canal therapy of surrounding vital teeth can be avoided.

CONCLUSION

NPDC must be distinguished from other maxillary anterior radiolucencies. Vitality testing of teeth adjacent to or involved with a cyst-like lesion and post-operative care to stabilize the flap to avoid morbidity is mandatory.

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