

**NASOPALATINE DUCT CYST CONCURRENT WITH SUPERNUMERARY TOOTH:
A CASE REPORT#**

**SÜPERNUMERE DİŞLE BİRLİKTE GÖRÜLEN NAZOPALATİN KANAL KİSTİ :
VAKA RAPORU**

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ABSTRACT

Nasopalatine duct cyst is a cyst located in the anterior maxilla and constitutes 1% of the cysts located in that region. Presence of a cyst concurrent with a supernumerary tooth at that region is rarely seen. The best we know, there is only one report in literature which nasopalatine duct cyst concurrent with a mesiodens in a case. This case report presents an expanded nasopalatine duct cyst that includes a supernumerary tooth within its boundaries.

Keywords : Nasopalatine duct cyst, Supernumerary teeth, Decompression treatment

ÖZET

Nazopalatin kanal kisti üst çene anterior yerleşimli bir kisttir ve bu bölge kistlerinin % 1'ini oluşturmaktadır. Bu bölgede kistin süpernumere bir dişle aynı anda bulunması oldukça nadir bir durumdur. Bildiğimiz kadarıyla, literatürde nazopalatin kanal kisti ile meziodensin aynı anda birlikte bulunduğu sadece bir olgu mevcuttur. Bu olgu bildiriminde; geniş sınırlara ulaşmış ve içinde süpernumere diş bulunduran nazopalatin kanal kisti olgusu sunulmaktadır.

Anahtar Kelimeler : Nazopalatin kanal kisti, Süpernumere dişler, Dekompresyon tedavisi

INTRODUCTION

Nasopalatine duct cyst (NPDC) is the most common non-odontogenic cyst of oral cavity¹. It was first described by Meyer in 1914². This lesion, also known by other names such as anterior middle cyst, maxillary midline cyst, anterior middle palatine cyst and incisor duct cyst was regarded as fissural cyst previously³. Although the exact pathogenesis is unclear, it is largely accepted that this lesion originate from remnants of nasopalatine duct which connects the oral and nasal cavities in the incisive canal area^{4,5}.

It generally develops in the midline of anterior maxilla near the incisive foramen. It is slightly more prevalent in males with the mean age of 42,5⁶. It is an intraosseous developmental cyst which is considered to be the most common (about 70%) type of the non-odontogenic cysts and occurs in approximately 1% of the population⁷. It may occur at any age but mostly seen between the fourth and sixth decades of life⁴.

Supernumerary teeth, also known as hyperdontia, is the condition where more than normal number of teeth are present in the jaws⁸. The frequency of supernumerary teeth ranges from 1 to 3 percent⁹. According to Luthen, 97% of supernumerary teeth are located in anterior region, while only 3% of cases are in premolar side¹⁰.

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Mesiodense teeth, teeth situated between the maxillary central incisors, are the most common supernumerary teeth with a reported incidence of 0.15-1.9%¹¹⁻¹². Nasopalatine duct cyst with a supernumerary tooth can be observed as an extremely rare event. The best we know, there is only one report in literature which nasopalatine duct cyst concurrent with a mesiodens in a case. Our case report presents an expanded nasopalatine duct cyst that includes a supernumerary tooth.

CASE REPORT

A 27 year-old male patient has referred to our clinic with a complaint of swelling in the anterior region of his palate. In extraoral examination, a swelling that elevates the lip, base and the wings of the nose could be seen. It was also leading to the loss of nasolabial sulci.

In intraoral evaluation, a huge swelling could be observed which was covering a large part of the hard palate and was extending between the maxillary right second premolar and the maxillary left second premolar teeth. In the vestibular area, a swelling that extends to the roots of the anterior teeth was located and the base of the nose was elevated. The color of the swelling at the palatal area was ordinary but fluctuation and crepitation could be detected. Maxillary right canine was devital. Maxillary central and lateral incisors were restored with porcelain and maxillary right first premolar tooth was treated with root canal treatment; so the vitality test was not applicable for these teeth.

In radiological evaluation, a lytic area with smooth edges could be seen. The spina nasalis anterior was destructed and the lytic area was extended between the maxillary right first premolar and the root of the maxillary left canine concurrent with a horizontally located supernumerary tooth between the maxillary right central and lateral incisors (Figure 1,2,3). In addition, the roots of the incisor teeth were deviated to the vestibular area because of the cyst. The aspiration fluid taken from the lesion at the palatal area was brown-yellow in color.

There was no pain at the relevant region; the only problem was aesthetic appearance. In his medical and social history, no hereditary or chronic diseases were recorded. He was smoking but never used any

alcohol before. A consent form was taken from the patient and was given detailed information about the operation to be applied. The treatment was planned as reducing the size of the lesion by decompression treatment with following enucleation. The root canal treatments of the related teeth were performed and a drainage tube was prepared from a dental syringe cover. Double-sided palatinus majus anesthesia was administered, mucoperiosteal flap was removed from the palatal region and samples were taken for the incisional biopsy containing the walls of the bone and the cyst. A window was opened over the region of palatal mucosa and a drainage tube was inserted and sutured into the mucosa (figure 4). The tube was removed after about 1 week. The lesion was confirmed as NPDC with the histopathological examination. The cavity was irrigated at regular intervals with saline solution from the opening we obtained. This process was continued for 6 months and decompression of the cyst was achieved. Then, the enucleation of the shrank cyst was performed with palatal approach. Subsequently, extraction of the supernumerary tooth and apical resections of the affected teeth were performed.

In histopathological examination, cystic lesion lined by two rows of epithelium with cilia, edematous connective tissue at the wall and bone tissue at the periphery could be seen (Figure 5). In early period and two years after operation, follow-up process of the healing was uneventful (Figure 6). There is no recurrence to date and the patient follow-up is ongoing.



Figure 1 . Panoramic radiography shows the large radiolucent area located in the upper jaw and the horizontally located supernumerary tooth



Figure 2. The cephalometric radiography shows the lytic area that destructed the spina nasalis anterior and radiated to the base of the nose



Figure 3. CT scan enables 3D view of the lesion



Figure 4. The decompression treatment performed in order to shrink the cyst with a drainage tube inserted and sutured into the mucosa

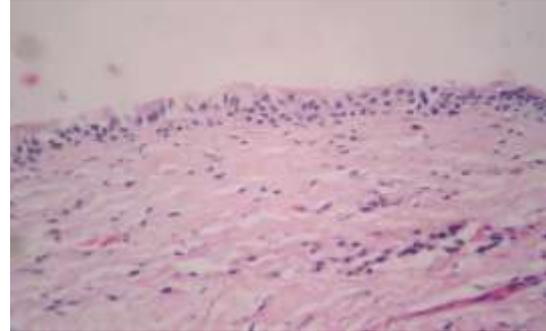


Figure 5. Cystic lesion lined by two rows of epithelium with cilia can be seen in histological section. Edematous connective tissue is seen at the wall and bone tissue is seen at the periphery. HEx200



Figure 6. No recurrence can be seen in panoramic view of post-op 2 years.

DISCUSSION

Nasopalatine duct cysts are developmental cysts derived from proliferation of embryonic epithelial remnants of the nasopalatine duct⁴. Clinically, a swelling at the vestibular and/or palatal area can be seen. When appears near the surface, the swelling is fluctuant and blue with a crepitation¹³.

Radiological exploration is essential for diagnosing NPDCs. In addition to panoramic X-rays, other complementary techniques are advised such as periapical and occlusal X-rays and computed tomography (CT). CT findings of a nasopalatine cyst reveal a midline location, smooth expansion with sclerotic margins¹⁴. Radiographically, NPDCs are usually well-circumscribed radiolucencies of the anterior maxilla. They are round, ovoid or heart shaped due to the superimposition of the nasal spine⁴. Nortje and Wood reported the round shape as the most common form while Anneroth et al found ovoid

shape to be the most⁷⁻¹⁵. Similar to the latter study results, a huge ovoid lesion could be observed in our case at the maxillary palatal area.

A correct tentative diagnosis should be based on positive dental vitality test and negative percussion findings of the permanent upper central incisors¹⁶. Because of the restorations or previously administered root canal treatment, we could not determine the vitality most of the teeth related with the lesion; but confusingly the only tooth that vitality test could be administered was devital, in contrast to the knowledge of the literature.

Supernumerary teeth, also known as hyperdontia, is the condition where more than normal number of teeth in the jaws are present⁸. The most common supernumerary tooth is called as mesiodens, which is situated between the maxillary central incisors¹¹. Clinically, supernumerary teeth are able to cause different local disorders including retention of the primary tooth, delayed eruption of the permanent tooth, ectopic eruptions, tooth displacements, follicular cysts and other alterations requiring surgical or orthodontic intervention¹⁷. Swelling of the upper lip, as seen in our case, reported to be developed from salivary tumor, regional infections-inflammations and dentigerous cysts¹⁸. Mesiodens teeth can erupt or remain impacted, and often cause to developmental disturbances and eruption problems of adjacent permanent teeth; leading to crowding, displacement, diastema, radicular resorption and dentigerous cyst formation¹⁹. In our case, resorption of the roots was not observed exactly but deviation of the roots was present.

Enucleation, marsupialization and decompression can be used as treatment methods of the NPDCs. Nasopalatine cysts are usually treated with enucleation; but in case of large cysts, marsupialization may be considered. The treatment method for symptomatic supernumerary teeth is extraction, while it is periodic follow-up for the asymptomatic ones.

Recurrence is noted only in 2% of the cases²⁰. This rate shows us how little the possibility of relapse is, especially in extended cases as presented in this report. There have been no recurrence so far in our case and the patient follow-up is ongoing.

This report presents a rare event; an extended NPDC concurrent with a supernumerary tooth. It is

difficult to differ clinically and radiologically from radicular cyst because of the adjacent devital teeth which were devitalised by the cyst and from dentigerous cyst because of the impacted supernumerary tooth surrounded by the cyst. The histopathological examination is the decisive method to distinguish such complicated cases.

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