CASE REPORT

Nasolabial cyst: a case report

I. Zografos¹, L. Podaropoulos¹, E. Malliou² & K. I. Tosios³

¹Department of Oral and Maxillofacial Surgery, School of Dentistry, National and Kapodistrian University of Athens, Athens, Greece
²Private Practice, Athens, Greece
³Department of Oral Pathology, School of Dentistry, National and Kapodistrian University of Athens, Athens, Greece

Abstract

Nasolabial cysts are rare non-odontogenic cysts of soft tissue that usually present as asymptomatic swellings beneath the ala of the nose. Their pathogenesis is uncertain. The presence of the lesion is perceived clinically and by the aid of radiological imaging. The usual treatment is surgical excision. Nasolabial cysts, when infected, are painful and mistreated occasionally as odontogenic defects. This article reports a case of a nasolabial cyst that was initially diagnosed and treated as a periapical abscess, which lead to the loss of a tooth. Complete enucleation of the cyst was performed under local anaesthesia and its identity was confirmed by histopathology. Follow-up over a year revealed no evidence of recurrence.

Introduction

The nasolabial cyst is an uncommon, non-odontogenic developmental cyst with an incidence estimated to 0.7% of all maxillary and mandibular cysts¹,². It is located in the soft tissues of the upper lip, inferior to the nasal alar region³. Its first description is credited to Emil Zuckerkandl in 1893⁴. Nasolabial cyst is, also, referred as nasoalveolar cyst, but this name should be abandoned as it is a soft tissue cyst and the alveolus is not involved. Less common names used in the past are nasovestibular cyst, nasoglobular cyst, subalar cyst and Klestadt’s cyst⁵,⁶.

Nasolabial cysts shows a female preponderance of a ratio ranging between 2.7:1 and 3.7:1¹,⁷,⁸. They are mostly unilateral, equally affecting both sides¹,⁸, but bilateral occurrence is reported in slightly more than 10%¹,⁸,⁹. Clinically, the nasolabial cyst presents as a slow-growing painless soft tissue swelling of the upper lip elevating the ala of the nose that may cause facial asymmetry and deformity⁸,¹⁰. It measures 1 to 5 cm in diameter¹¹. Nasal obstruction may ensue, and pain follows infection of the cyst¹²,¹³.

Diagnosis is established by microscopical examination. A combination of pseudostratified squamous, stratified squamous, respiratory and cuboidal epithelium may be seen, and inflammatory cells are present⁴. Goblet cells are found in 55.6%² to 67%¹⁴ of cases.

We present a case of an infected nasolabial cyst in a 60-year old male that was initially diagnosed and treated as a periapical abscess.

Case report

A 60-year old male presented to the general dentist with a chief complaint of a painful swelling in the upper lip. He stated that the lesion was present for at least one year and did not give a history of trauma, infection or surgical operation in the area.
His medical history was non-contributory. The associated teeth were not sensitive to percussion, but the left upper canine had negative reaction to thermal vitality tests. An intraoral radiograph did not reveal any pathologic signs. The case was misdiagnosed as periapical infection associated with a non-vital upper left canine, therefore apicectomy with simultaneous endodontic treatment was performed. During the procedure pulp necrosis of the tooth was confirmed, as tissues in the root canal presented with a characteristic black appearance and odour of a necrotic pulp. Amoxicillin (1000 mg) and metronidazole (500 mg) were prescribed twice daily for 8 days. This broad spectrum antibiotic regimen was prescribed by the referring general dental practitioner due to the severity and persistence of the symptoms. However, the patient was not relieved from his symptoms and the relevant canine was extracted, since it was considered responsible for the persistence symptoms. As no improvement followed patient’s condition he was referred to our team for further investigation.

Clinical examination confirmed the presence of a slight facial asymmetry and a deformity in the left nasolabial region (Fig. 1). On extraoral palpation a round, tender and diffuse swelling was located underneath the left ala of the nose. Intraorally, the swelling was covered by reddish mucosa and was soft (Fig. 2).

The region was radiographically examined by cone beam computed tomography (CBCT) scan, but no areas of pathology were detected (Fig. 3). A conventional CT of the maxilla was performed revealing a homogeneous, well circumscribed round soft tissue mass left to the midline, below the alar base, protruding and narrowing the entrance of the left nasal cavity (Fig. 4). The lesion measured 3.4 cm × 3.0 cm.

Periapical abscess or radicular cyst was excluded from the differential diagnosis spectrum as no relevant teeth were left and involved in the region. Odontogenic cyst of non-inflammatory type was considered, however, no radiolucency on the radiographs was detected. Clinical diagnosis was directed to either a soft tissue cyst – such as dermoid, epidermoid or nasolabial cyst – or a soft tissue neoplasm. Surgical treatment under local anaesthesia and intraoral approach was decided (Fig. 5). A sublabial incision was performed and after the elevation of a mucoperiosteal flap the cyst was completely removed without perforating the nasal mucosa, however, the cystic sac was ruptured. The defect was closed by primary intention and properly sutured using resorbable 3/0 vicryl sutures (MonocrylTM, Ethicon, Somerville, NJ, USA). A cystic sac, approximately 4 × 1.5 × 0.5 cm was fixed in a 10% neutral buffered formalin solution and submitted for pathologic examination.

Microscopic examination of 5 μm thick tissue sections stained with haematoxylin and eosin showed that the wall of the sac consisted of cellular
and vascular connective tissue, lined by ciliated, pseudostratified columnar epithelium (Fig. 6). No goblet cells were found. The connective tissue presented focal inflammatory infiltration by plasmacytes and lymphocytes, mostly subepithelial, as well as haemorrhagic infiltration (Fig. 7). The final diagnosis was nasolabial cyst.

Post-operative healing course was uneventful while follow-up at 1 year with conventional CT showed no evidence of recurrence (Fig. 8).

**Discussion**

Searching the MEDLINE/Pubmed database under the terms “Nasolabial cyst”, “Nasoalveolar cyst”, “Nasovestibular cyst” and “Klestadt’s cyst” resulted in 94 published case reports. These case reports follow different methodologies in imaging, diagnosis and treatment modalities. Nevertheless, the final diagnosis and confirmation of the nature of a lesion should be performed by histological analysis.

In the case presented herein, the clinical, radiographic and microscopic features were consistent with nasolabial cyst. The patient noticed the lesion for least a year before presentation, however, he asked for medical advice only after it became
painless. Following the case from its onset, it is not clear if the nasolabial cyst caused the loss of the vitality of the upper left canine, since no pathology was detected at the periapical bone in the intraoral radiograph, or it was infected from the adjacent canine. This commonly ensues in nasolabial cyst and may mislead clinician towards a diagnosis of periapical abscess or an odontogenic cyst, that in our case lead to the loss of a tooth.

Differential diagnosis may include nasopalatine duct cyst or globulomaxillary cyst, however, the extraosseous location of the nasopalatine cyst aids diagnosis. The diagnostic spectrum will encompass, as well, soft tissue cysts, such as dermoid or epidermoid cyst, furunculosus of the base of the nose, benign tumours, soft tissue and salivary gland tumours. Malignant tumours, in particular mucoepidermoid carcinoma, should also be considered.

Intraoral or panoramic radiographs are not usually informative in the diagnosis of nasolabial cyst, but help in excluding intra-osseous lesions. Conventional CT is the most commonly used imaging tool to detect a suspected nasolabial cyst and preferred to magnetic resonance imaging (MRI) due to its lower cost. In our case, the CBCT also failed to detect the cyst, as it depicts only the hard tissues, but it was revealed in the conventional CT. In general, intraoral and panoramic radiographs as well as CBCT should not be considered the imaging method of choice for depicting a nasolabial cyst since they are hard tissue imaging modalities. In case conventional CT fails to detect the lesion, an MRI should be considered. In both conventional CT and MRI nasolabial cyst presents as a non-odontogenic homogeneous circumscribed mass, with varying intensity, with or without bony erosion. Usually conventional CT is preferred due to its lower cost, however, MRI does not expose the patient to ionising radiation. Ultrasonography (USG) is a method often used for detecting soft tissue lesions, which may be used intraorally as well. In a case report Acar et al. concluded that USG was useful and adequate when nasolabial cyst is suspected. USG is fast becoming the modality of choice in depicting oral soft tissue lesions due to its inexpensive and non-ionising nature, giving it an advantage over conventional CT or MRI. On the other hand is
an operator dependent method and its interpretation is determined by the experience of the user\textsuperscript{18,19}.

The etiopathogenesis of nasolabial cysts is debatable. Initially, it was considered as a fissural cyst derived by epithelial cells entrapped at the fusion area of the medial and lateral nasal processes and the maxillary process\textsuperscript{5,6}. Currently, an origin from embryonic remnants of the nasolacrimal duct tissue is considered more probable and supported by bilateral occurrence of some cysts\textsuperscript{2,13,20}. However, some cysts may develop due to surgical treatments and chronic inflammation\textsuperscript{21}.

Therapeutically, injection of sclerozon materials, simple aspiration and destruction by cautery\textsuperscript{13} have been tried, but show a high recurrence rate\textsuperscript{2,10,13,22,23}. The most common and effective treatment is complete surgical excision of the cyst, usually performed intraorally via a gingivolabial incision, under local or general anaesthesia\textsuperscript{8}. A transnasal approach of endoscopic marsupialisation of nasolabial cysts is described\textsuperscript{10} that according to some\textsuperscript{8,13,24}, but not all\textsuperscript{25,26} studies shows good therapeutic results. In a prospective randomised study\textsuperscript{27} it was concluded that both methods are effective. The transnasal marsupialisation has many benefits over the conventional intraoral approach, but there is no difference with regard to post-operative swelling, pain, or overall recurrence rate. Therefore, more studies with longer follow-up periods are needed to estimate in depth the two different techniques\textsuperscript{8}. A modification of the above mentioned method that is suggested is to firstly aspirate the cyst before enucleation which, according to the authors, exhibits lower recurrence rates\textsuperscript{5}. Cryosurgery has also been applied as an alternative treatment method on nasolabial cysts. Janardhan et al.\textsuperscript{28} performed cryosurgery, after a sublabial incision, in four patients. The authors suggest that the application of a cryo probe to the bed of the cyst after excision is beneficial, especially in cases when complete cyst wall removal is not a certainty. Furthermore, no complications or recurrence has been reported with this method.

Care should be taken during surgical excision, as the tight attachment of the cyst to the nasal mucosa may lead to perforation of the floor of the nose. However, in some cases this may be required to ensure the complete removal of the cyst, followed by suturing. Complications following surgery of nasolabial cysts include facial/perinatal swelling, pain, toothache, facial numbness and tooth loss\textsuperscript{8}. Recurrence is not common\textsuperscript{2} and is associated with intraoperative rupture of the cyst\textsuperscript{13}. Sheikh et al.\textsuperscript{8} analysed 79 articles with 311 patient nasolabial cyst cases and reported a recurrence rate of 1.63% in cases where the lesion was surgically excised and a recurrence rate of 2.53% in cases where the transnasal marsupialisation approach was used. Authors conclude that overall recurrence rate seems to be irrelevant of the surgical technique involved\textsuperscript{8}. In the case presented, the nasal mucosa was not perforated, but the cyst was not removed intact. However, no recurrence was found in the 1 year follow-up.

Sheikh et al.\textsuperscript{8} in a recent literature review reported 79 articles including 311 patients with diagnosed and confirmed nasolabial cysts. Several variables, which were not consistent in all articles, were included. However, an effort was made to categorise the data based upon patient demographics, location of the cyst, aetiology, radiological imaging, histology, management and outcome. Authors concluded that nasolabial cysts are rare, are best defined in conventional CT and MRI and the rates of post-operative swelling, pain and recurrences are similar in the sublabial and transnasal approach. However, they report inconsistencies between articles in the reporting of presentation, cyst characteristics, management and complications and they add that the heterogeneity of their data may subject their study to institutional, geographical and selection bias.

In conclusion, nasolabial cyst, although rare, should be included in the differential diagnosis in cases of sublabial swelling with facial deformity. Panoramic radiography and CBCT do not give substantial information, therefore, conventional CT or MRI should be preferred and USG considered. Transnasal marsupialisation or surgical enucleation seems to be equally successful in its treatment.

**Conflict of interest**

The authors confirm that there are no conflicts of interest.

**Ethical approval**

None required.

**References**


