CASE REPORT

Nasal Mucosal Cyst a Clinical and Surgical Dilemma

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Abstract A mucous cyst is a lesion which can show a wide range of symptoms but is benign and most of them can even appear several months or even years after nasal surgeries. Size of the displaced epithelial fragment is a crucial factor for the development of the mucous cyst. Complete resection of the mucous cyst is the ideal treatment. Surfing through the literature we came across 18 cases of mucous cyst formation following nasal surgery. Here we describe a mucous cyst which had resulted from a rhinoplasty procedure the patient had undergone earlier in her life.

Keywords Mucous cyst · Nasal surgery · Complication · Resection

Introduction

Rhinoplasty, a highly demanding procedure is done on the most prominent part of the face, the nose, and the complications arising from it can be either of the skeletal framework or of the soft tissue regions.

Development of mucous cyst after rhinoplasty is a very rare condition and most of them are reported to appear several months or years after rhinoplasty as a late complication.

Case Report

39 year old female patient reported to our department with chief complaint of pain in relation to upper front tooth region for 2 weeks. There was no history of trauma, periodontitis or decay but she had undergone rhinoplasty 16 years back. She had pain and swelling around the alar region along with nasal discharge one and half years back which gradually subsided on taking medications from a local clinic.

Extraoral examination showed a palpable and tender right submandibular lymph node and there were no other relevant findings. Intraoral examination showed obliteration of maxillary labial vestibule in relation to 11–23 region (Fig. 1) as well as a missing 14.

Intraoral periapical radiograph (Fig. 2) showed a well defined radiolucency involving the apex of 11,21,22,23. There was negative response to vitality test for 21,22 and 11,23 showed a delayed response. Orthopantomograph (Fig. 3) showed a well circumscribed radiolucency extending from apex of 12–22. CT scan confirmed the extent of the lesion (Fig. 4). Aspiration (Fig. 5) done using a wide bore needle produced a mucoid material. With periapical cyst as our primary diagnosis we decided to go ahead with endodontic treatment and surgical enucleation.

Surgical Technique

An intraoral buccal approach to the alar base was planned and a trapezoidal flap was raised 14–24 region under bilateral infraorbital and nasopalatine nerve block. A cleavage plane was identified between the lesion and the eroded bone to separate it from nasal floor. The cyst which had a distinct capsule was removed in toto (Fig. 6). Apicectomy along with obturation of the teeth was done

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Fig. 1 Clinical picture

and the excised lesion was sent for histopathologic examination.

Histopathology report revealed a cystic lumen epithelium in association with connective tissue capsule. The lining epithelium is regular non keratinized stratified squamous epithelium comprising of 1–4 cell thickness with scattered mucous cells, suggestive of nasal mucosal cyst (Fig. 7).

Discussion

Aetiology as well as the primary reported case of mucous cyst after rhinoplasty was done by Mc Gregor et al. [1]. Since then various authors have reported and proposed different etiologies for the formation of mucous cyst. First and foremost theory was proposed by Mc Gregor [1] which was of the herniation of nasal mucosa in the direct post-operative period which resulted in the formation of mucous cyst. In Mouly [2] discarded this hypothesis and proposed that the herniation or subsequent growth of nasal mucosa can take place leading to formation of the mucous cyst.

Senechal [3] upheld Moullys hypothesis and reported two such cases. In Shulman and Westreich [4] gave the most reasonable explanation of the proliferation of ectopic or displaced mucous membranes, that it is the result of inadequate removal of mucous epithelial remnants and bony or cartilage parts. Subsequently various authors [5, 6] have proposed that it's the poor surgical techniques which disrupt the intranasal mucosal lining to cause encystation of nasal mucosal epithelium leading to the occurrence of cyst. Cysts may also develop from the obstruction of sebaceous glands as a result of scar tissue formation [7].

The etiology of this lesion has been hypothesised to the seeding of mucous tissue during nasal surgery or osteotomy, or due to retained surgical remnants. This theory more or less explains the various locations described in the

literature, and the absence of connections with the internal nasal lining [8].

The usual clinical presentation is that of an asymptomatic swelling in and around the nasal cavity with the patient complaining of continuous pressure sensation over the region. On palpation the cyst may be mobile and non tender mass. Sometimes it can be a sessile, painless, soft mass fixed to the adjacent structures. The overlying skin is usually more vascular than the closest region [8]. Functional and aesthetic problems caused by the lesion include remarkable asymmetry of the tip and the nostrils, persistent nasal obstruction, impaired nasal breathing and swelling, deviation of the septum and saddle nose deformity. Infection and abscess may also be seen in association with the lesion.

The majority of these cases are known to occur along the nasal bone in the line of nasal osteotomy with the nasal dorsum being the most affected site. Literature also reports of lesions occurring paranasally along the maxillary osteotomy [9, 10], the lateral wall, the tip of the nose, the alar, the inner canthus, the radix nasi, and even the glabella [2, 7, 8].

Clinical examination, nasal endoscopy, imaging studies and histological analysis after biopsy will define the possible diagnosis. Differential diagnosis of nasal mucous cyst includes the entities beyond infections and which are usually seen as cysts in these regions. The unlikely suspects

Fig. 2 Intraoral periapical radiograph prior to RCT showed well defined radiolucency in relation to apex of 11,21,22,23

Fig. 3 Orthopantomograph showing well circumscribed radiolucency extending from apex of 12–22

Fig. 4 Axial CT scan showing the extent of the lesion

Fig. 5 Aspirate containing the mucoid material

includes lipogranulomas or paraffinomas [11], benign tumor-like nasal lesions such as epidermoid inclusion cysts, tumefactive cartilage proliferation, osteomas, lipomas, pleomorphic salivary adenomas, granulomatous diseases, congenital midline nasal masses like gliomas, encephaloceles, and nasal dermoid sinus cysts. Malignant neoplastic lesions like squamous cell carcinoma, malignant melanoma, adenocarcinoma, sarcoma, and lymphoma involving the nasal region must also be kept in consideration [12, 13].

The location, extent of the lesion as well as the patient age determines the surgical procedure. Eradication of the lesion surgically remains the appropriate treatment for mucous

Fig. 6 Cyst which with distinct capsule removed in toto

Fig. 7 Microscopic view showing the characteristic features

cysts of the nose. Complete resection avoiding rupture is curative. Several approaches have been mentioned in literature, including percutaneous incisions, intercartilaginous and intracartilaginous incisions, open rhinoplasty technique and buccal approach for alar base cyst [8].

Conclusion

Though there are a high number of rhinoplasty procedures done around the world every year, the published cases of nasal mucosal cyst occurrence are very low. It is concluded that intraoperative tissue dispersion leads to entrapment of fragments of epithelial tissues which begin to proliferate when conducive conditions are given. The clinician should keep in mind the possible chance for development of the mucous cyst after nasal surgeries and also as a potential suspect for swellings in and around the nasal region.

Compliance with Ethical Standards

Conflict of interest None.

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