CASE REPORT

Sinonasal mucous cyst: A rare complication of septorhinoplasty

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Abstract Introduction: Septorhinoplasty is a common performed surgery. Late complications of septorhinoplasty are uncommon but may be serious and difficult to manage. Nasal septal mucous cyst is a rare post-operative complication.

Objectives: We aim for discussing the etiological theories and suggesting strategies to prevent this complication.

Case report: We report a case of septal nasal cyst developed 15 years after a closed septorhinoplasty procedure. It was a 68-year-old man presenting with a chronic progressive headache with intermittent rhinorrhea. Rhinologic examination revealed a prominent bulge in the posterosuperior wall of bilateral nasal fossa. CT scan and MRI helped make the diagnosis of a sinonasal mucous cyst. Complete removal of this formation was performed using an intranasal endoscopic surgery.

Conclusion: It seems that the proliferation of entrapped fragments of epithelial tissue is the cause of this phenomenon. To avoid such a complication, procedures of septorhinoplasty should be performed appropriately and mucosal lining should be kept intact.

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1. Introduction

Reconstructive surgery of the nose is a widely performed procedure nowadays. After a septorhinoplasty, results are for the most part satisfactory and patients are pleased. However, like in any other surgery, complications do occur. Early complications include bleeding, septal hematoma, infection and poor wound healing. Late complications are generally related to external nasal deformities or septal perforation. Cyst formation in the nasal septum is an extremely rare but avoidable late complication. Although a mucous cyst is a
benign lesion, it is considered to be a serious complication of septorhinoplasty. Given the large number of septorhinoplasty operations performed worldwide every year, the number of the published cases of post-operative mucous cyst is on the contrary very low.

2. Case report

A 68-year old man presented with a chronic progressive headache with brown mucoid intermittent rhinorrhea. The patient presented with neither nasal obstruction nor bleeding. He reported being hospitalized at emergency unit 1 month ago for exacerbation of his headache associated with fever at 38.5 °C. These symptoms responded well to antibiotics administration. Medical history revealed that the patient underwent a closed septorhinoplasty 15 years ago to correct a traumatic deformation of his nose associated with an obstructive septal deviation.

Rhinologic examination revealed a prominent bulge in the posterosuperior wall of bilateral nasal fossa with a regular mucous layer. There was no obstruction of bilateral choana. The computed tomography (CT) revealed a 4.2 × 3.5 cm mass originating from the posterior part of the nasal septum extending to the ethmoid cavities. This mass had poorly defined soft tissue density. The CT scan showed signs of sphenoiditis (Fig. 1). Because of the poor definition of the nasal mass a magnetic resonance imaging (MRI) was performed. The MRI scan revealed that the mass had high signal intensity on T1-weighted images and high signal intensity on T2-weighted images similar to fluid density and compatible with a large nasal septal cyst. No fistula or dural contact was noted (Fig. 2).

Under general anesthesia, an intranasal endoscopic approach was used to excise the septal cyst. This involved marsupialization with drainage of the mucous cyst. The remaining cystic structure was totally removed by dissecting the cystic wall away from the underlying septal cartilage. By the excision of the cyst capsule, most ethmoidal cells were already opened. The ethmoidectomy was completed and a bilateral sphenoidotomy was performed. Because of bleeding, anterior nasal pack

Figure 1 (A) CT(axial plane) shows an isodense soft tissue nasal mass originating from the posterior part of the nasal septum. (B) CT (coronal plane) shows extension to the ethmoid cavities. The maxillary sinuses are clear.

Figure 2 (A) MRI (sagittal plane) in T1-weighted scan shows a large nasal septal mass with hyperintense signal. (B) MRI (coronal plane) in T2-weighted scan reveals hyperintense signal. No fistula or dural contact was noted.
was required. The packing was removed 1 day after the surgery. The patient made a good immediate postoperative recovery.

The patient reported that his headaches have completely resolved since the cyst was excised. A postoperative CT scan, made 7 months later, revealed no recurrence (Fig. 3). At 2 years follow up, the endoscopic examination revealed no sign of recurrence. There were bilateral synechiae between the inferior and medial turbinates without any functional consequences.

3. Discussion

In Rhinologic practice, postoperative mucous cyst formation is extremely rare. The sites of cyst occurrence can vary. The majority of these cysts occur over the nasal bone along the line of nasal osteotomy, with the nasal dorsum being the most affected site. Dorsal cysts and mucoceles of the septum after a rhinoplasty seem to be more frequent than nasal septal cyst occurring after a submucous resection. The etiology of this lesion remains unknown and controversial. In 1958, McGregor et al. suggested the hypothesis of the herniation of nasal mucosa into the subcutaneous space in the direct postoperative period when the patient blew her nose. The most reasonable explanation of cyst formation is the entrapment of nasal mucosa in the subcutaneous space and subsequent proliferation of ectopic or displaced mucous membranes, followed by improper clearing of mucous epithelial remnants and bony or cartilage parts. Entrapment of epithelium from the nasal vestibule or mucosal lining may be caused by transcutaneous osteotomies or inappropriate transmucous resections.

The cyst formation can arise from technical failure during the procedure. Some authors postulated that specific local condition may inadvertently exacerbate the entrapment of free mucosal remnants. The postoperative nasal packing especially if traumatic may have a contributory role in the pathogenesis of nasal septal cyst. Chronic rhinitis seems to stimulate the mucosal epithelium to undergo cystic degeneration.

In order to prevent iatrogenic cyst formation it is important to use an appropriate surgical technique. It is important to keep the mucosal lining intact during septorhinoplasty procedures, or to meticulously restore the disturbed mucosal lining. To this effect subperichondrial and subperiosteal tunnels should be established over the septum and under the nasal septum before any surgical alteration be made to these structures. Meticulous removal of all bony, cartilaginous and mucous remnants from the surgical field is essential.

Patients normally complain about persistent nasal obstruction, increased snoring, and impaired nasal breathing and swelling, deviation of the septum and saddle nose deformity. In our case, because of its location, no signs of obstruction accompany the cyst which was diagnosed after a cracking causing brown rhinorrhea and symptoms of inflammation.

The differential diagnosis for nasal mucous cyst must include inclusion cysts, dermoid cysts, abscess, foreign body retention, granulomatous disease, infections, encephaloceles, minor salivary gland neoplasm, schwannomas and lymphomas.

A preoperative assessment with CT and MRI is mandatory to determine the extent of the lesion, to ascertain the possibility of intracranial involvement, as well as to evaluate bony erosion and nature of contents within the mass.

Surgical excision remains the appropriate treatment for mucous cysts of the nose. Surgical approach depends on the location, the size and the extent of the lesion. Dorsal, nasal tip and septal lesions are treated via open rhinoplasty or intranasal techniques. Glabellar or paranasal cysts require a cutaneous approach.

4. Conclusion

Postoperative mucous cyst is a preventable complication. Meticulous removal of all bony, cartilaginous and mucous remnants is essential. Maintaining mucosal integrity during osteotomy is also important to prevent such complication. Great success has been seen following complete excision of the nasal mucous cyst capsule.

Conflict of interest

None declared.

References


