

Management of nasal polyposis arising from the olfactory cleft

Olfaktör yarıktan kaynaklanan nazal polipozisin tedavisi

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Objectives: Although nasal polypi frequently arise from the middle meatus, they may occasionally originate from the olfactory cleft. Removal of these polypi may be difficult because of obscure location and concomitant occurrence of septal deviation. This work describes surgical management of olfactory cleft nasal polypi with a combined approach involving septoplasty and endoscopic sinus surgery.

Patients and Methods: The study included 12 patients (4 females, 8 males; mean age 30.4; range 17 to 58 years) who were treated for nasal polypi arising from the olfactory cleft. Polypi were unilateral in four patients and bilateral in eight patients. Endoscopic removal of the nasal polypi required an initial septoplasty to allow visualization of the olfactory cleft and to straighten the nasal septum. The follow-up period ranged from three to six months.

Results: Visualization of the olfactory cleft was accomplished without complications. This allowed radical removal of nasal polypi in all the patients with relief of initial symptoms. Total relief of nasal obstruction was achieved in eight patients. Four patients who had sagging nasal mucosa and bilateral nasal polyposis had moderate relief.

Conclusions: Nasal polyposis arising from the olfactory cleft can be effectively removed by nasal endoscopy following an initial septoplasty to widen the narrow area at the olfactory cleft for better visualization and manipulation.

Key Words: Endoscopy; nasal polyps/surgery; nasal septum/surgery; tomography, X-ray computed.

Amaç: Nazal polipler sıklıkla orta meatustan kaynaklanmasına rağmen, zaman zaman olfaktör yarıktan da köken alabilir. Bu poliplerin temizlenmesi ulaşım zorluğu ve eşlik eden septal deviyasyon nedeniyle zor olabilir. Bu çalışmada, olfaktör yarıktan kaynaklanan nazal poliplerin septoplasti ve endoskopik sinus cerrahisinin birlikte uygulanmasıyla tedavisi sunuldu.

Hastalar ve Yöntemler: Çalışmaya olfaktör yarıktan kaynaklanan nazal polip nedeniyle tedavi edilen 12 hasta (4 kadın, 8 erkek; ort. yaş 30.4; dağılım 17-58) alındı. Polipler dört hastada tek taraflı, sekiz hastada iki taraflı idi. Nazal poliplerin endoskopik cerrahiyle çıkarılmasından önce, olfaktör yarığın görüntülenmesi ve nazal septumu düzeltmek için septoplasti uygulandı. Takip süresi üç ile altı ay arasında değişmekteydi.

Bulgular: Olfaktör yarığın görüntülenmesi sorunsuz gerçekleştirildi. Bu yöntem, nazal poliplerin tüm hastalarda tam olarak çıkarılmasını ve hastaların başlangıçtaki yakınmalarının iyileşmesini sağladı. Sekiz hastada burun tıkanıklığı tamamen geçti. İki taraflı nazal polipozis ve burun mukozasında sarkma olan dört hastada orta derecede rahatlatma sağlandı.

Sonuç: Olfaktör yarıktan köken alan nazal polipler, daha iyi görüş alanı ve cerrahi manipülasyon için yarıktaki dar alanın septoplasti ile genişletilmesinden sonra nazal endoskopiyle etkili bir şekilde temizlenebilmektedir.

Anahtar Sözcükler: Endoskopi; nazal polip/cerrahi; nazal septum/cerrahi; bilgisayarlı tomografi.

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Nasal polypi frequently arise from the middle meatus. At times, the origin of some polypi may be obscure because of the complex structure of the nose and paranasal sinuses. An example of a such difficulty to observe polypi during ordinary clinical examination is with those polypi arising from the olfactory cleft. Anatomically, the olfactory cleft is the space bounded by the middle turbinate, the nasal septum, the anterior face of the sphenoid sinus, and the cribriform plate of the ethmoid bone.

Although infrequent, localization of the site of origin of olfactory cleft polypi needs nasal endoscopy augmented with CT scanning of the nose and paranasal sinuses. The access to the olfactory cleft is difficult. Furthermore, removal of polypi arising from this site is hindered by their obscure location and the concomitant occurrence of septal deviation especially at its upper portion.

This work describes the surgical management of olfactory cleft nasal polypi needing a combined septoplasty and endoscopic sinus surgery to obtain access to the olfactory cleft while preserving the normal physiologic function of the nose and paranasal sinuses.

PATIENTS AND METHODS

The subjects of this study were the patients who attended the ENT outpatient clinic of the Suez Canal University Hospital in Ismailia, Egypt during the year 2001. One hundred and eighty patients with unilateral or bilateral nasal polypi with ages ranging

from 16-64 years were encountered during that period. Nasal endoscopy and CT scan of the nose and the paranasal sinuses diagnosed 12 patients (4 females, 8 males; mean age 30.4; range 17-58 years) with nasal polypi arising from the olfactory cleft (Fig. 1, 2). Polypi were unilateral in four patients and bilateral in the other eight patients. The most common symptom of this group of patients was nasal obstruction either bilateral or unilateral. The second most common symptom was hyposmia. All patients had a trial of medical treatment for an average of one month prior to surgical removal of the nasal polypi. Medical treatment consisted primarily of systemic steroids in five cases and topical intranasal steroid spray in seven. Both had no effect as regards to the existence of the nasal polypi.

Endoscopic removal of the nasal polypi at the olfactory cleft required an initial septoplasty to allow visualization of the olfactory cleft and to straighten the nasal septum.

Technique

The nose is initially decongested with packs soaked in phenyl oxymetazoline hydrochloride. Under hypotensive general anesthesia, the mucoperichondrium and periosteum of one side of the septum is elevated till the osseous septum is visualized. The septal cartilage is dissected free from the perpendicular plate of the ethmoid bone and is retracted to one side using a Killian nasal speculum (Fig 3). A part of the perpendicular plate of the ethmoid facing the middle turbinate is resected using a bone cutting



Fig. 1 - Computed tomography scan showing a unilateral nasal polyp (*) in the right olfactory cleft. The middle meatus is clear.

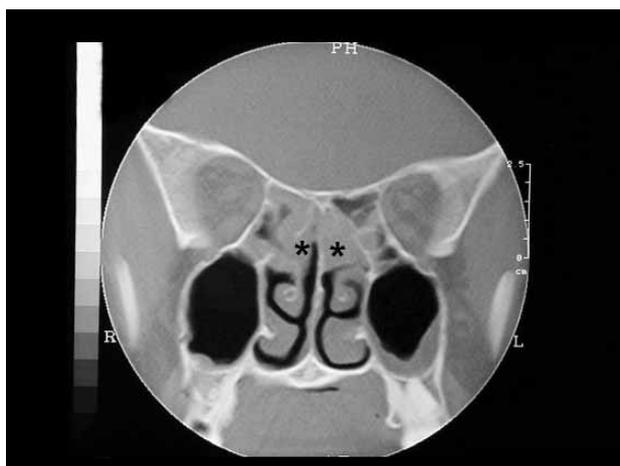


Fig. 2 - Computed tomography scan showing bilateral olfactory cleft polyps (*). The ethmoidal air cells are bilaterally opaque.

forceps (Fig 4). Additionally, opening of the anterior and middle ethmoid air cells was performed following an initial resection of the uncinete process. Resection of the basal lamella of the middle turbinate gave access to the opening of the posterior ethmoid air cells.

RESULTS

No complications related to septoplasty such as septal perforation, hematoma or infection were encountered during this study. Visualization of the olfactory cleft was accomplished using the technique adopted and described in this study. This allowed the radical removal of nasal polypi arising at this site in 100% of the cases with the relief of initial symptoms in all patients. After a follow up period ranging from three to six months, total relief of nasal obstruction was achieved in eight patients. Moderate relief was obtained in four patients who had sagging nasal mucosa in addition to bilateral nasal polyposis. Hyposmia improved in the younger four patients with unilateral polyposis and remained unchanged in the elder ones especially those with sagging nasal mucosa and long history of nasal polyposis.

DISCUSSION

Nasal polyposis is defined as an easily recognizable clinical entity resulting from the prolapsed lining of the ethmoid sinuses blocking the nose to a variable degree depending on the size.^[1] This study describes

the management of an infrequent entity of nasal polyposis, which is difficult to recognize clinically.

In a twelve-months' series of patients we have only encountered 12 patients with polypi arising exclusively from the olfactory cleft and not accompanied by other polypi arising from the middle meatus. This is much less than previously reported numbers.^[2] Augmented visualization with endoscopes endorsed with CT scan of the nose and paranasal sinuses have aided in the diagnosis and in the localization of the nasal polypi arising from this site. All nasal polypi encountered in this study originated from the superior meatus and/or superior turbinate as well as the anterior face of the sphenoid sinus. Polypi originating at the medial side of the middle turbinate were seen in eight patients with bilateral olfactory cleft polyposis. Contrary to other reports,^[2,3] no polypi arising from the superior portion of the nasal septum were encountered in this study.

The technique adopted in this work is an assortment of surgical steps used in nasal as well as in functional endoscopic sinus surgery. Freeing the cartilaginous septum from the perpendicular plate of the ethmoid^[4] allows removing bites from this plate

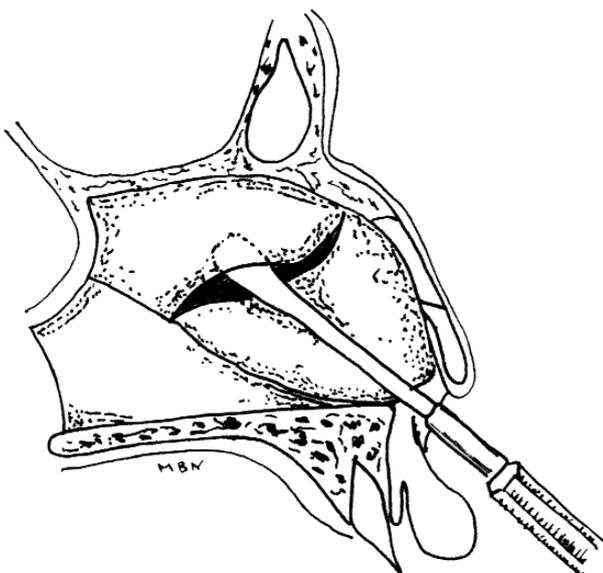


Fig. 3 - Freeing the cartilaginous septum from the perpendicular plate of the ethmoid.

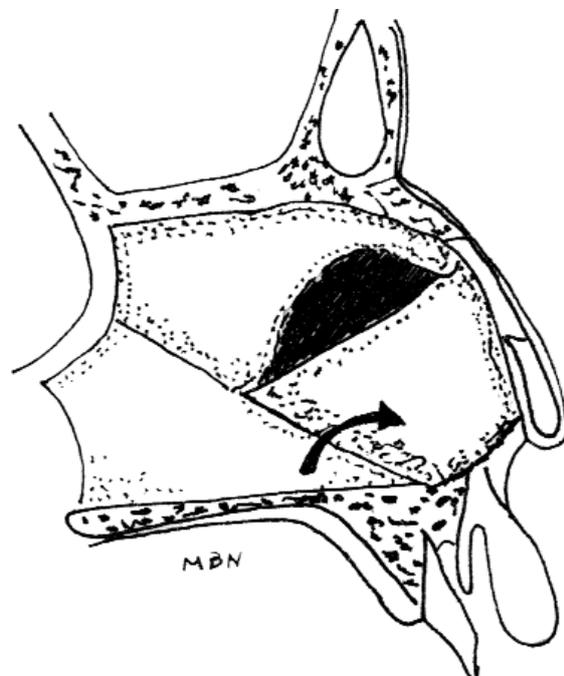


Fig. 4 - Bites of bone removed from the perpendicular plate of the ethmoid open the narrow olfactory cleft aided by lateral retraction of the cartilaginous septum (arrow).

to widen the olfactory cleft. We also found that an initial U-shaped incision made at the septal cartilage^[2] frees the cartilage permitting its lateral retraction to the opposite side providing an additional; working space especially if the septum is deviated. This opens the narrow space at the olfactory cleft and considerably improves endoscopic visualization and manipulation. Resection of the nasal polypi at the olfactory cleft was accomplished in a complete and safe manner. A postoperative finding in this kind of nasal polypi was the presence of a thick tenacious nasal discharge coming from the olfactory cleft for an average of 10 days after the removal of the nasal packs in the second postoperative day in two of the patients. The discharge eventually resolved by repeated nasal suction and saline nasal wash. This led us to the routine opening of the anterior ethmoid air cells in the middle meatus after an initial uncinectomy. Posterior ethmoidal air cells were opened after the resection of the basal lamella of the middle turbinate. This also aided in the increased visualization and manipulation at the olfactory cleft by removing the structural support of the middle turbinate thus achieving lateralization of the middle turbinate without having to resect it.^[5] Resection of the middle turbinate was reported to have a negative effect on olfaction due to damage to the olfactory fila or alteration of the aerodynamic pattern within the olfactory cleft.^[6]

In conclusion, olfactory cleft nasal polyposis is an infrequent entity of nasal polyposis not arising from the middle meatus. These polypi are difficult to see and should be suspected if a complaint of nasal obstruction and/or Hyposmia could not be accounted for by anterior rhinoscopy. In such case, nasal endoscopy is mandatory in revealing such difficult to observe polypi and CT scan will define their origin.

The management of such polyposis is difficult and can only be effectively removed by using nasal endoscopy following an initial septoplasty to widen the narrow area at the olfactory cleft for better visualization and manipulation.

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