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ENDOSCOPIC TRANSSEPTAL SPHENOTOMY WITH REMOVING SEPTAL CARTILAGE

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Annotation: Sphenoiditis is an inflammatory disease of the mucous membrane of the sphenoid sinus. As a rule, changes in the main sinus are combined with other rhinological pathology, while its isolated lesion accounts for only 1-2% of cases among all inflammatory pathologies of the paranasal sinuses. Surgical approaches to the sphenoid sinus have recently undergone significant changes . Thanks to the development of endonasal transsphenoidal surgery of the skull base, approaches to the main sinus are distinguished by their .In the surgical treatment of isolated sphenoiditis, there are four main approaches to the sphenoid sinus: transnasal, transethmoidal, transpterygoidal and transseptal approaches. Before surgery, the patient's data is analyzed and the optimal access to the main sinus is selected . This takes into account: preoperative diagnosis, location of the pathological process, degree of pneumatization of the sphenoid sinus, taking into account the spread of the lateral sinus recess, and so on . No less important in choosing an access is the equipment of the clinic, the availability of surgical equipment and the surgeon's experience in performing endoscopic sinus surgery.In traditional functional endoscopic endonasal surgery (FESS), the sphenoid sinus is opened by identifying and expanding its natural anastomosis . In some cases, opening of the anastomosis is supplemented by lateropexy or partial resection of the middle and superior turbinates to improve the drainage function of the sinus . Depending on the area of removal of the anterior wall of the sphenoid sinus, the following types of opening of the main sinus are distinguished: 1, 2 and 3 types . Detection and expansion of the natural anastomosis of the sphenoid sinus with the nasal cavity is characterized as type 1 sphenotomy. However, when the anastomosis expands in the vertical direction, the sphenotomy is usually classified as type 2. Subtotal or total removal of the anterior wall of the sphenoid sinus, sometimes in combination with partial removal of the posterior wall of the ethmoidal labyrinth cells covering the entrance to the sinus, is classified as type 3 sphenotomy.The latter approach is part of the transsphenoidal approach to the base of the skull and consists of the widest possible removal of the anterior wall of the sphenoid sinus, uniting the sinuses on both sides into a single cavity .Transethmoidal access to the main sinus implies the presence of a pathological process in the cells of the ethmoidal labyrinth, mainly in the posterior sections. This approach requires opening from the anterior sections of the ethmoidal labyrinth to the posterior sections bordering the sphenoid sinus . It is critical to rely on four known anatomical landmarks during surgery to successfully approach the main sinus: the base of the skull (superior), the horizontal portion of the superior turbinate (inferior), the superior turbinate (medially), and the lamina paper (lateral) . In order to open the sphenoid sinus, it is always necessary to follow the inferior - medial direction after identifying the posterior cells of the ethmoidal labyrinth. This approach may be complicated by the presence of Onodi cells, in which case the main sinus will have a horizontal location.Thus, analyzing the available arsenal of surgical techniques for opening the sphenoid sinus, the method of choice in the treatment of isolated sphenoiditis is endoscopic transnasal and endoscopic transseptal approaches .A distinctive feature of the method is minimal invasiveness and functionality in the treatment of main sinus pathology.

Key words : Sphenoiditis, sphenoid sinus , transseptal, transpterygoid.

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Introduction. The transseptal approach to the sphenoid sinus is a surgical technique that was once often used in sublabial transnasal transseptal microscopic pituitary surgery. With the introduction of endoscopic technologies, access through gingival dissection is no longer required . Instead, an incision is made in the left side of the nasal cavity, parallel to the nasal septum. This approach allows you to simultaneously open both sphenoid sinuses without disturbing the physiological drainage system of the sinus (natural anastomosis). In functional endoscopic endonasal surgery, the transseptal approach is considered minimally invasive and allows for immediate correction of deviation of the nasal septum and safe opening of the sphenoid sinus . The approach has found wide

also used in pituitary surgery, having undergone some modification - removal of the posterior parts of the nasal septum with transition to the vomer and bilateral opening of the sphenoid sinus .

The spectrum of pathologies found in the sphenoid sinus is very variable and includes both neoplasms and inflammatory changes in the mucous membrane. The variety of diseases is due to the location of the main sinus so that the lesion is associated with both sinus pathology and pathological changes originating from the cranial cavity [1-4]. Among the neoplasms, benign ones are distinguished, such as inverted papilloma, pituitary adenoma, and malignant ones: squamous cell cancer, adenocarcinoma sinonasal poorly differentiated cancer, metastases of other organs [6]. In addition, fungal diseases, antrachoanal and sphenochoanal polyps, cystic formations, mucoceles, acute and chronic inflammatory changes in the mucous membrane of the sphenoid sinus, fibrous dysplasia, and bone osteomas are identified [5,7,9-13] . Pathologies associated with the cranial cavity include meningocele, encephalocele, meningoencephalocele, sinonasal liquorrhea, and vascular aneurysms .

Results. During endoscopic examination, degeneration of the middle turbinate was discovered in 5 patients. Of these, only 3 patients belong to the group of ineffective conservative treatment. Under anesthesia, to provide access to the anterior wall of the sphenoid sinus, in 8% of patients, the bullous middle turbinate was dissected with a scalpel along its anterior surface, followed by removal of the lateral portion (Figure 1).

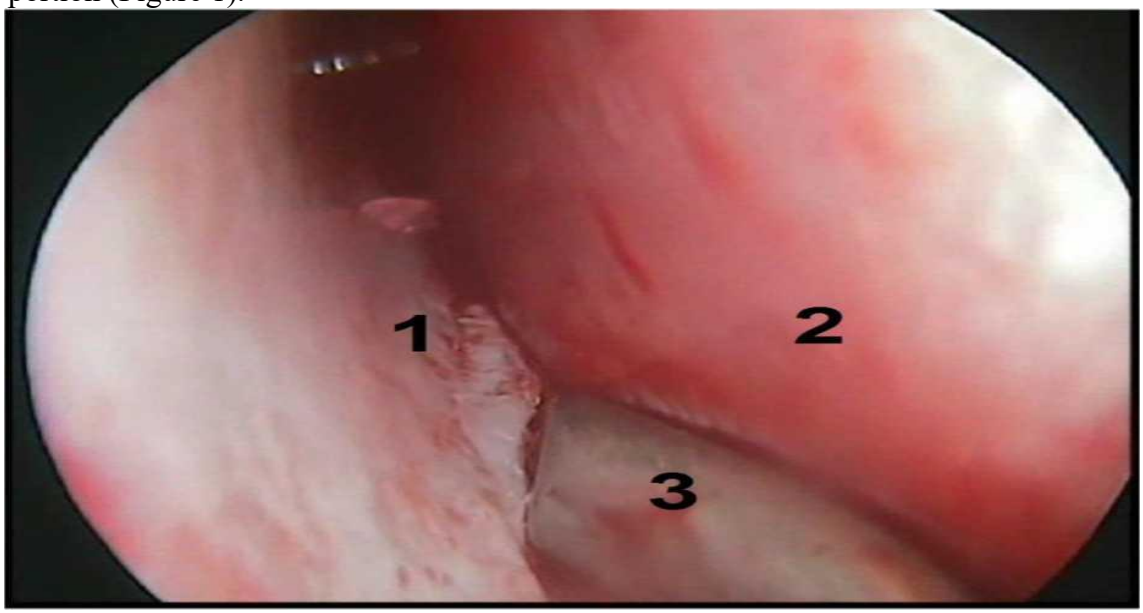

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Figure 1. Endoscopic submucosal resection of deviation of the nasal septum. 1 - crest of the nasal septum; 2 - mucous membrane of the nasal septum with perichondrium; 3 - raspatory.

This procedure was performed only on the affected side of the sphenoid sinus. Since one patient had bilateral turbinate degeneration, it was decided not to perform surgical correction on the unaffected side. Further, the stages of sphenotomy were similar to those in the previously described method.

Under conditions of general anesthesia using artificial ventilation and fluoride-containing anesthetics after anemia of the nasal mucosa Sol. Adrenaline hydrochloride 0.1% was infiltrated with Sol.Ultracaini 2.7 into the area of the bottom of the nasal cavity on the left, and

hydropreparation of the nasal septum mucosa. After an incision in the vestibule of the nasal cavity on the left, the surgeon identified a deformed area of the nasal septum, its cartilaginous and/or bone part. The modified portion of the nasal septum was removed using Blakesley forceps (Figure 10).

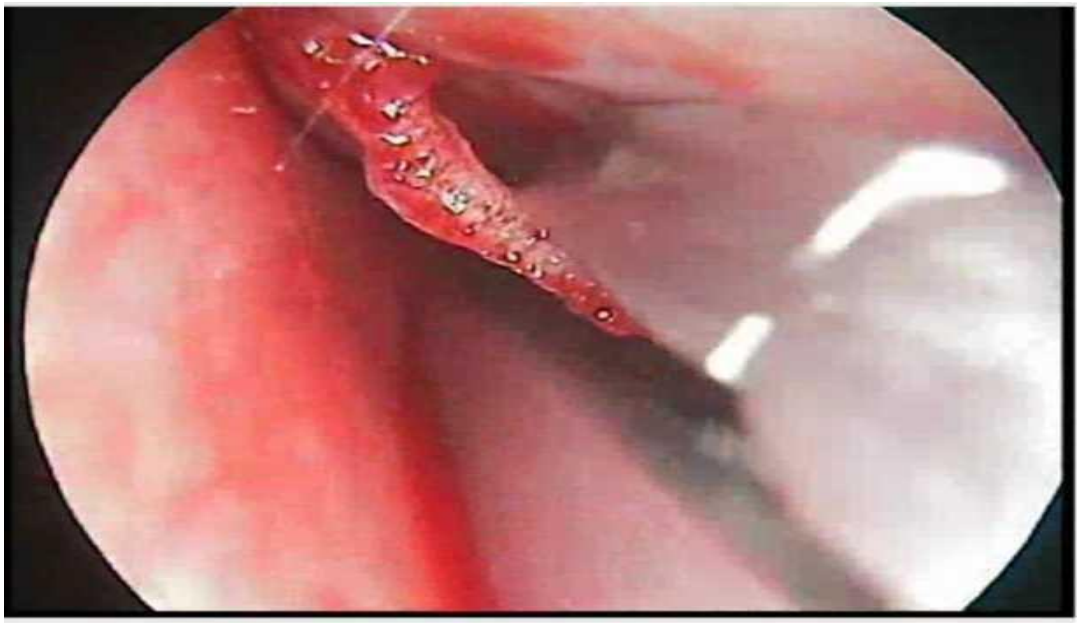

Figure 2. Bone ridge removal using Blakesley forceps under endoscopic guidance.

Conclusions Thus, a careful study of preoperative computed tomography and individual planning of surgical access to the affected sinus is the key to successful sphenotomy without complications. Endoscopic transseptal access when opening the sphenoid sinus can be used in case of hypopneumatization of the sinus due to deviation of the nasal septum, as well as the presence of Onodi cells in adults and pediatric patients .

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