



MINIMALLY INVASIVE MAXILLARY SINUS APPROACH

Professor Sergey KARPISCHENKO

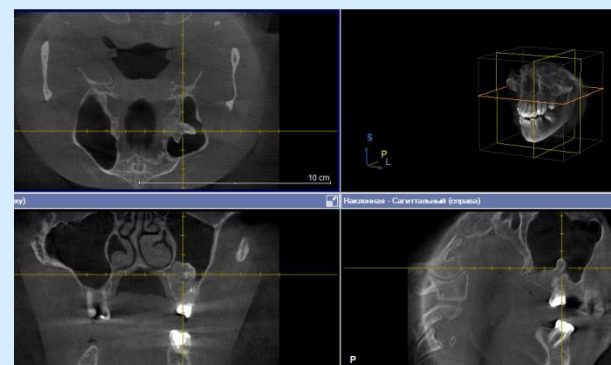
Chairman of ENT Department Pavlov First Saint Petersburg Medical State University, Russia

Maxillary sinus opening is one of the most common surgical procedures. External via anterior maxillary wall, lateral and via tooth line approaches are mostly using in stomatological and oncological practices. For rhinological situations endonasal sinus intervention is more preferable. Microscopes and endoscopes can be used endonasally, intervention can be performed trans middle meatus or rarely via inferior meatus with artificial window formation.

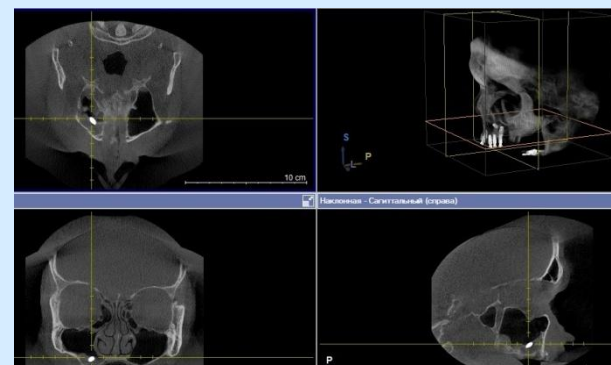
Purpose: To analyze the effectiveness of the treatment of patients with various forms of pathology in the maxillary sinuses by intranasal endoscopic approach to the sinuses through the middle and inferior nasal meatuses.



CT scan of the left maxillary sinus cyst

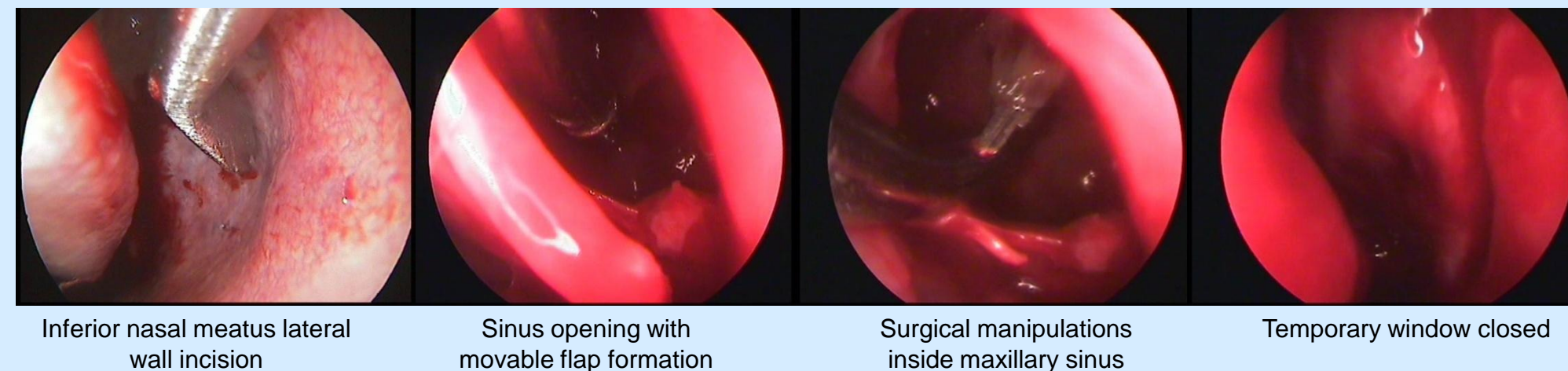


CT scan of the left maxillary sinus osteoma



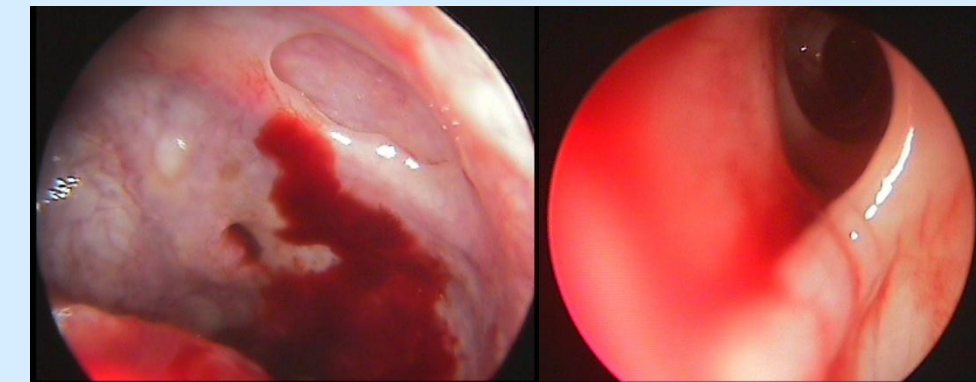
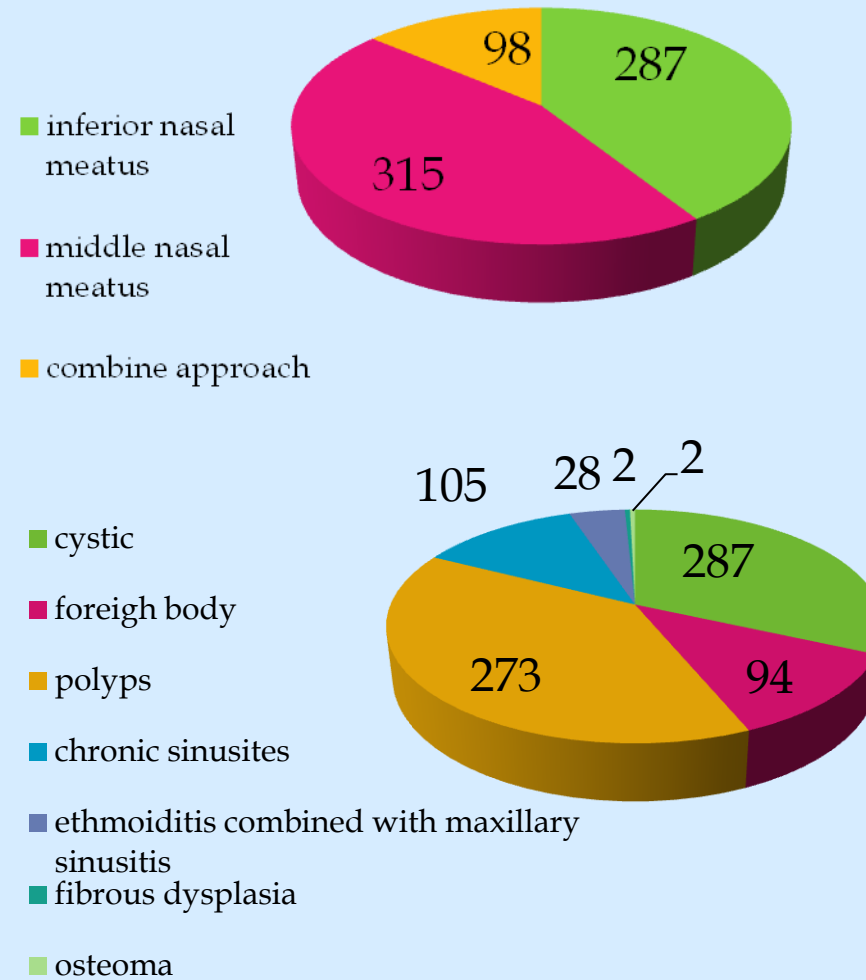
CT scan of the left maxillary sinus foreign body

Materials and methods: Last years number of patients with stomatological indications for maxillary sinus surgery highly increases. Most of these patients have no rhinological complains. CT examination made prior to tooth implantations and sinus lifting often detected pathological changes in maxillary sinus floor. These changes such as cysts, foreign bodies, edema are not significant for rhinology but important for implantology. In such cases, trans middle meatus approach is traumatic and technically difficult. Also this surgical strategy leads to destruction of physiological function of osteomeatal unit. 457 patients after endoscopic maxillary sinus surgery were analyzed post-operatively. 700 cases of the maxillary sinuses opening are presented.



Inferior nasal meatus lateral wall incision

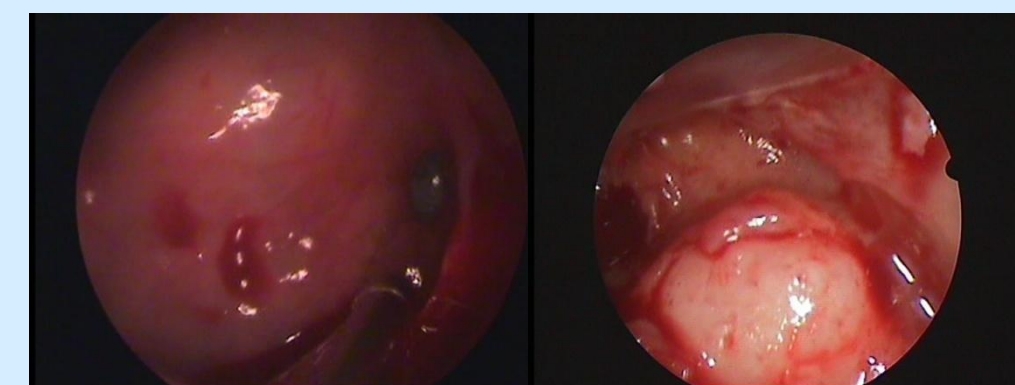
Sinus opening with movable flap formation



Hasner's valve and after puncture of the left maxillary sinus orifice

Patulous Hasner's valve in the left inferior nasal meatus

Required angle of instruments depends on situation. At the end of surgical procedure osteomucosal flap can be returned back to close gap of temporary approach and, if necessary mucosa can be fixed by sutures. Nasal packing is not indicated in most cases. Postoperative period and care is easy, surgery can be performed in the office. Our experience shows the advantages of the abovementioned approach as one of minimally traumatic methods of maxillary sinus surgery.



Foreign body in the left maxillary sinus

Osteoma of the left maxillary sinus



The lateral wall condition in the inferior nasal meatus in 2 month

Results: During more than 7 years we prefer inferior meatus temporary approach without artificial window formation for maxillary sinus endoscopic surgery. Intervention can be performed in most cases under local anesthesia. After Hasner's valve is identified, area of incision can be chosen and be performed with elevator. Osteomucosal flap preparation depends on situation with prevention of lacrimal pathways damage and bony walls retraction. For complete maxillary sinus examination and removal of pathological tissues we use different angled endoscopes, flexible tip or changeable view directions and rotation.

Conclusion:

- Temporary inferior meatus approach gives less bleeding and postop complains in compare with other methods of maxillary surgery
- The temporary approach can be effective in case of pathological dental conditions and pathology on the alveolar bottom
- Safe for the nasolacrimal ducts
- This approach can be used for diagnostic maxillary sinusoscopy