

# **Topic of the lecture:**

**Inflammatory diseases of  
paranasal sinuses. Rhinogenic  
complications.**

# Terminology

**Sinus – fourth declension**

**Genitive case plural– sinuum;**

**Base of the word is sinu + itis;**

**Correct form, thus, is sinuitis, not sinusitis.**

# Definition

**Sinuitis – is an inflammation of mucous membrane, submucous layer and in some cases osseal wall of paranasal sinuses.**

**25-30% of stationary ENT patients;  
15-16% of ambulatory ENT patients.**

# Which sinuses are affected more often?

- 1. maxillary (highmoritis).**
- 2. ethmoid (ethmoiditis).**
- 3. frontal (frontitis).**
- 4. sphenoid (sphenoiditis).**

**In children of age less than 1 month ethmoiditis (80-92%).**

# Following forms of sinusitis can be distinguished:

- 1. Monosinusitis.**
- 2. Polysinusitis**
  - a) hemisinusitis;**
  - b) pansinusitis.**

# Etiology

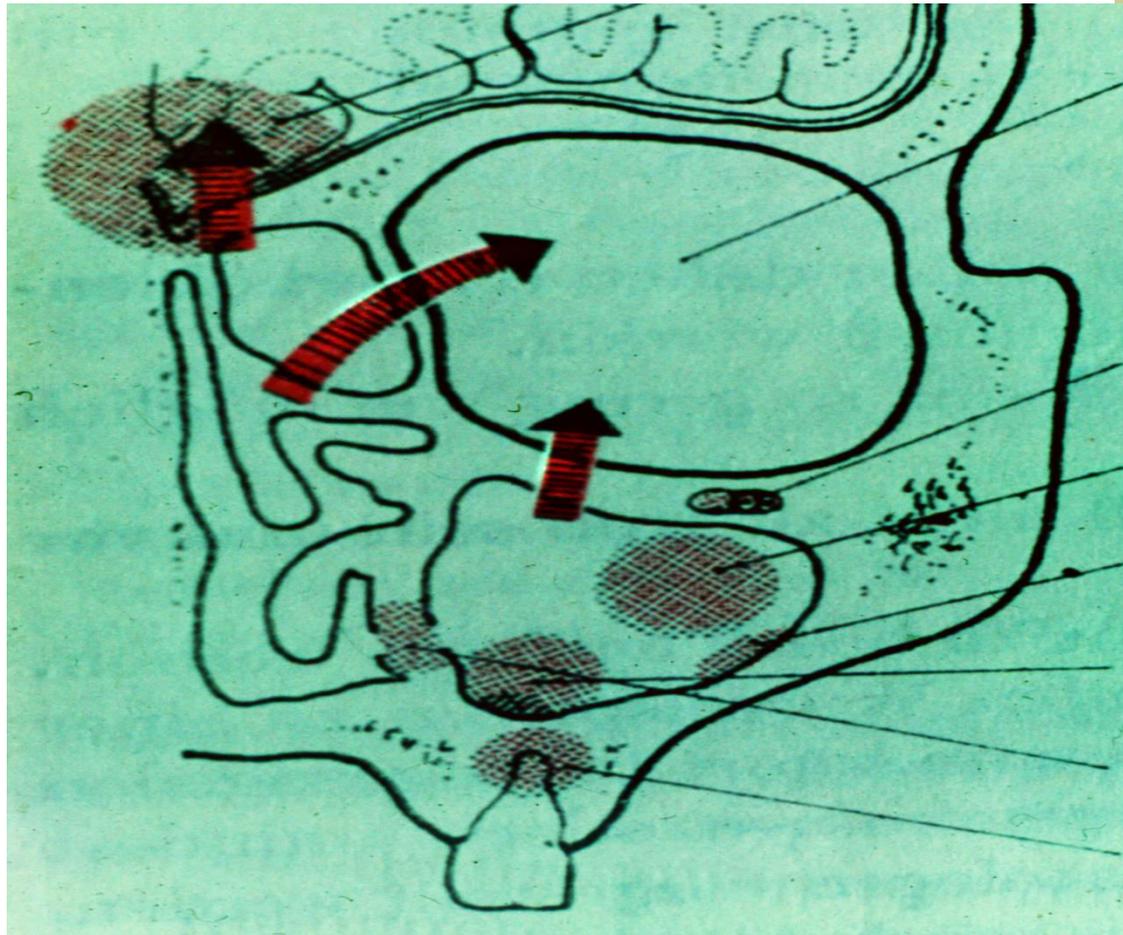
- ◆ **Bacteria and viruses.**
- ◆ **Acute sinusitis can be caused by: Str. pneumoniae, Streptococcus spp., H. influenzae, M. catarrhalis, S. aureus.**
- ◆ **In chronic sinusitis besides those mentioned above, cause can be anaerobic flora and fungi**

# Ways of infection spreading:

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- 1. Rhinogenic.**
- 2. Odontogenic.**
- 3. Traumatic.**
- 4. Haematogenic.**
- 5. Allergic.**

# Ways of infection spreading:

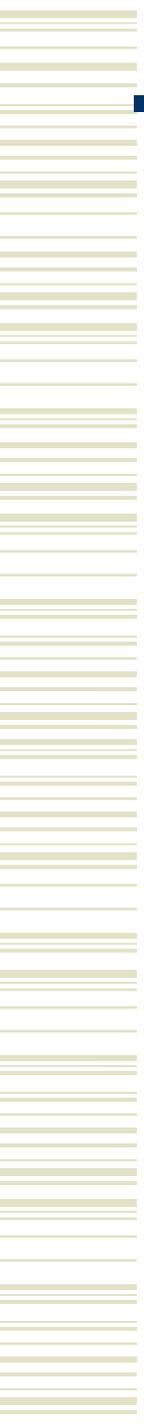


# **Factors contributing sinusitis development:**

- 1. Decrease of common body reactivity.**
- 2. Pathology of nose and nasopharynx.**

# Classification

<b>Acute</b>	<b>Chronic</b>
<b>1. Catarrhal</b> <b>2. Purulent</b> <b>3. Necrotizing</b>	<b>1. purulent - 78%</b> <b>2. Polyps</b> <b>(polyposous)</b> <b>3. Polyps and</b> <b>purulent</b> <b>(polyposous-</b> <b>purulent)22%</b>



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# Clinic of acute sinusitis

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- 1. Common symptoms.**
- 2. Local symptoms.**

# Clinic of acute sinusitis

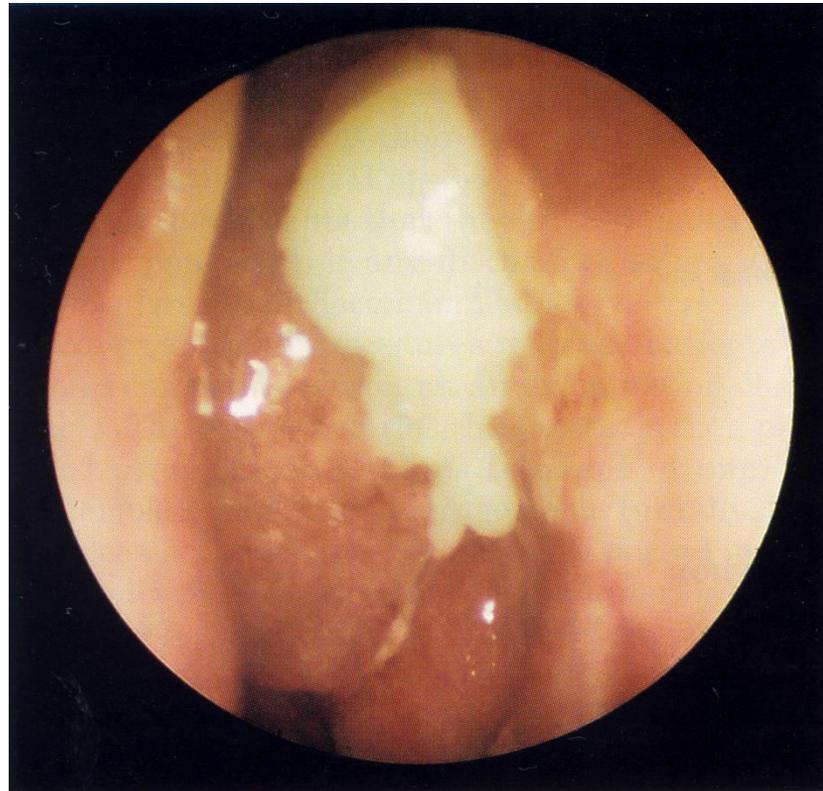
## Common symptoms

- 1. Common weakness, decrease of appetite, fever.**
- 2. Characteristic blood change for inflammation.**

## Local symptoms

- 1. Pain according to localization of the sinus.**
- 2. Nasal obstruction.**
- 3. Purulent secretions.**
- 4. Olfaction disorders.**
- 5. Swelling of facial soft tissues.**
- 6. Lacrimation.**

# Purulent sinusitis



# odontogenic maxillary sinusitis

- 1. Anatomical localization – contact of lower maxillary wall with roots of upper teeth.**
- 2. Infection is spread through premolars and molars of the upper jaw:**
  - Periodontitis**
  - Periostitis**
  - Osteomyelitis**
  - Purulent radicular cysts;**
  - Damage of maxillary sinus during tooth extraction.**

# Specific clinical features

- 1. Causal tooth.**
- 2. Unilateral affection.**
- 3. Pain is absent.**
- 4. Pus with unpleasant smell.**
- 5. Primary chronic origin.**
- 6. Common among adults.**

# **Additional diagnostic methods**

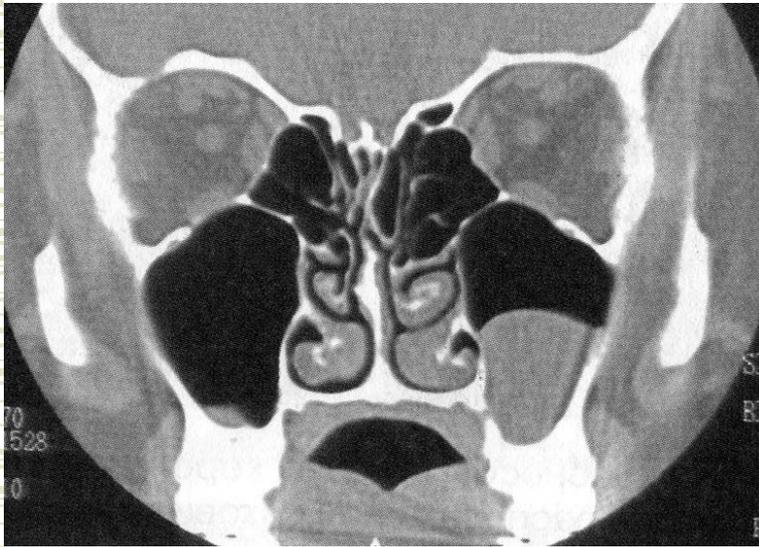
- 1. Diaphonoscopy.**
- 2. X-ray .**
- 3. Thermography.**
- 4. Echography.**
- 5. CT and MRI.**
- 6. Optical rhinoscopy.**
- 7. Maxillary sinus puncture.**

# X-ray of paranasal sinuses in front projection

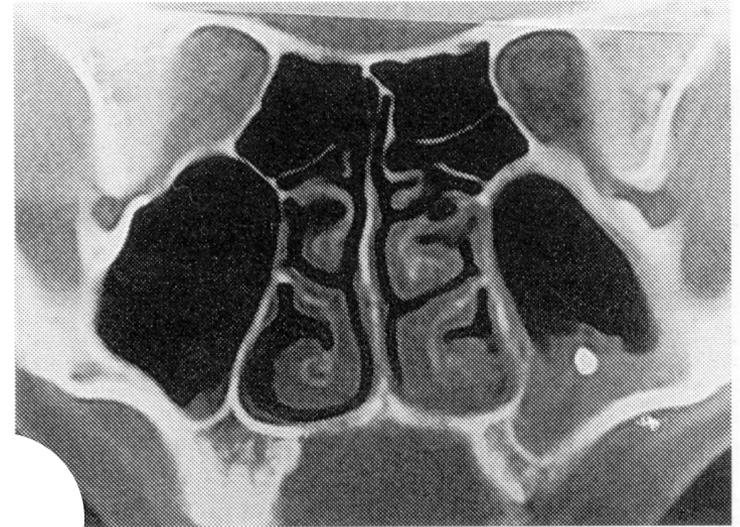


**Decrease of  
transparency of  
the right maxillary  
sinus**

# Diagnosis of sinusitis with help of CT and MRI

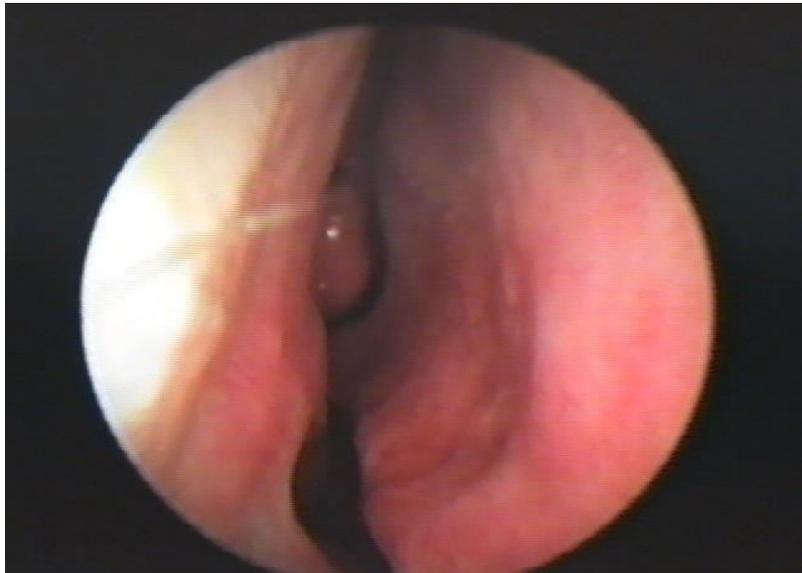


**Cyst of the left maxillary sinus**

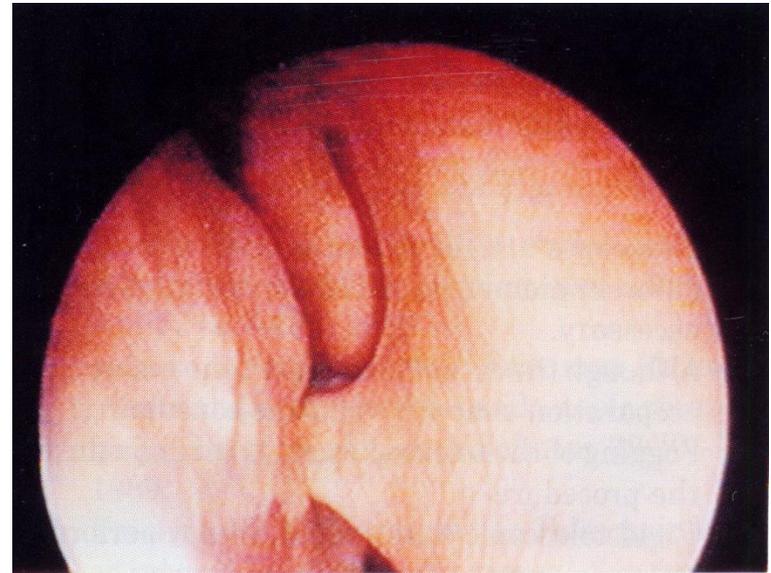


**Mycetoma of the left maxillary sinus**

# Endoscopic examination of nasal cavity

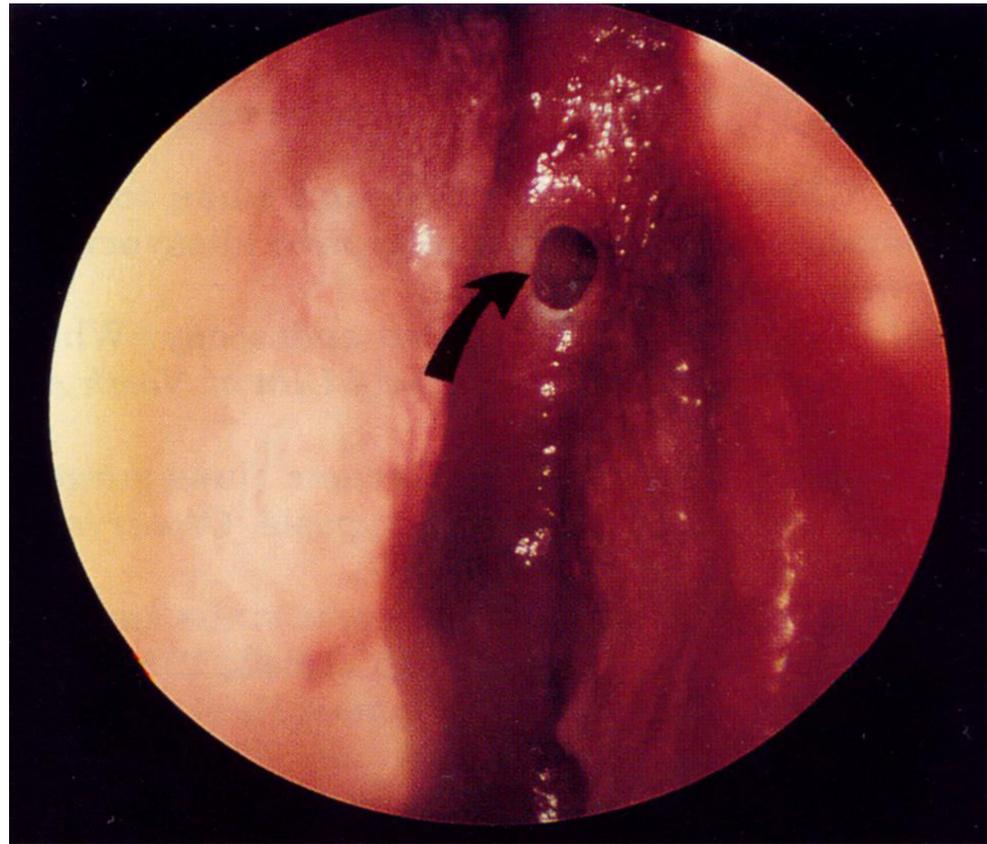


**ridge of nasal septum**



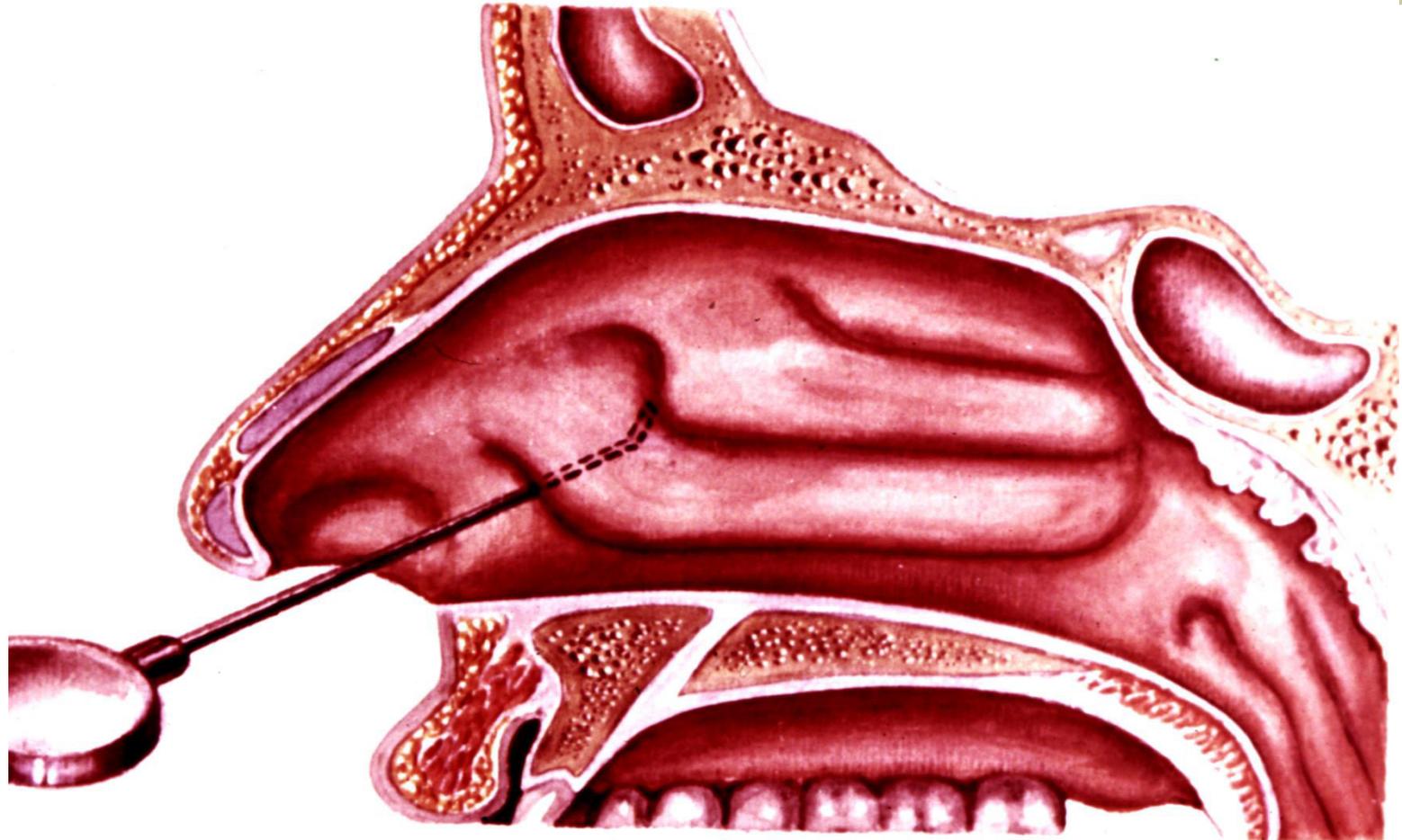
**Crest of nasal septum on the left**

# Endoscopic examination of nasal cavity



**Nasal opening of  
sphenoidal sinus**

# Puncture of maxillary sinus



# Treatment of acute sinusitis

## 1. Anti-inflammatory treatment

### Antibiotics:

- Cephalosporins (цефазолін, дурацеф, цефаклор, цефтріаксон).
- Semi synthetic penicillines Напівсинтетичні пеніциліни (амоксицилін, амоксил), including those combined with Clavulanic acid (амоксиклав, аугментін, енханцин).
- Macrolides (кларітроміцин або клацид, роваміцин, макропен або мідекаміцин).
- Lincosamides in odontogenic processes (далацин або кліндаміцин, лінкоміцин)
- Combined medications – Fluimucil - antibiotic with mucolytic agent

# Treatment of acute sinusitis

## **Anti - inflammatory medications**

**Ереспал (in combination with antibiotics).**

## **2. antihistamine**

**Оринол плюс (2 антигістамінних препарата + фенілефрін).**

## **3. decongestant**

**Полідекса з фенілефріном (антибактеріальний препарат + деконгестант).**

## **4. Secretolytics: Синупрет , АЦЦ.**

## **5. Immunomodulatory medications**

**ІРС-19, Рибомуніл, Бронхо-Мунал – лізати бактерій;  
Умкалор, Тонзілгон, Сінупрет – фітопрепарати;  
Тонзилотрен, Цинабсин – гомеопатичні препарати.**

# Treatment of acute sinusitis

- 6. Symptomatic treatment.**
- 7. Odontogenic maxillary sinusitis – tooth treatment.**
- 8. Puncture of paranasal sinuses.**
- 9. Necrotizing form of sinusitis must be treated surgically.**

# Chronic sinusitis

**Causes - untreated acute sinusitis**

**Contributing factors:**

- 1) Changes of reactivity**
- 2) Sinus drainage disorders;**
- 3) Defective mucous membrane.**

# Forms of chronic sinusitis

- 1. Purulent.**
- 2. Polyps (polyposous)**
- 3. Polyps and purulent (polyposous-purulent)**

# Disease course

- 1. Remission : common condition normal, smelly discharge, working ability decreased, nasal breathing blocked, olfaction disorders.**
- 2. Acute periods (worsening): fever, common weakness, pain, swelling of eyelids, characteristic changes of blood formula.**

# Rhinoscopic picture of chronic sinusitis



**Purulent discharge in left middle nasal meatus, polyps in the right**

# Treatment

## **More effective - surgical** **Surgeries on maxillary sinus**

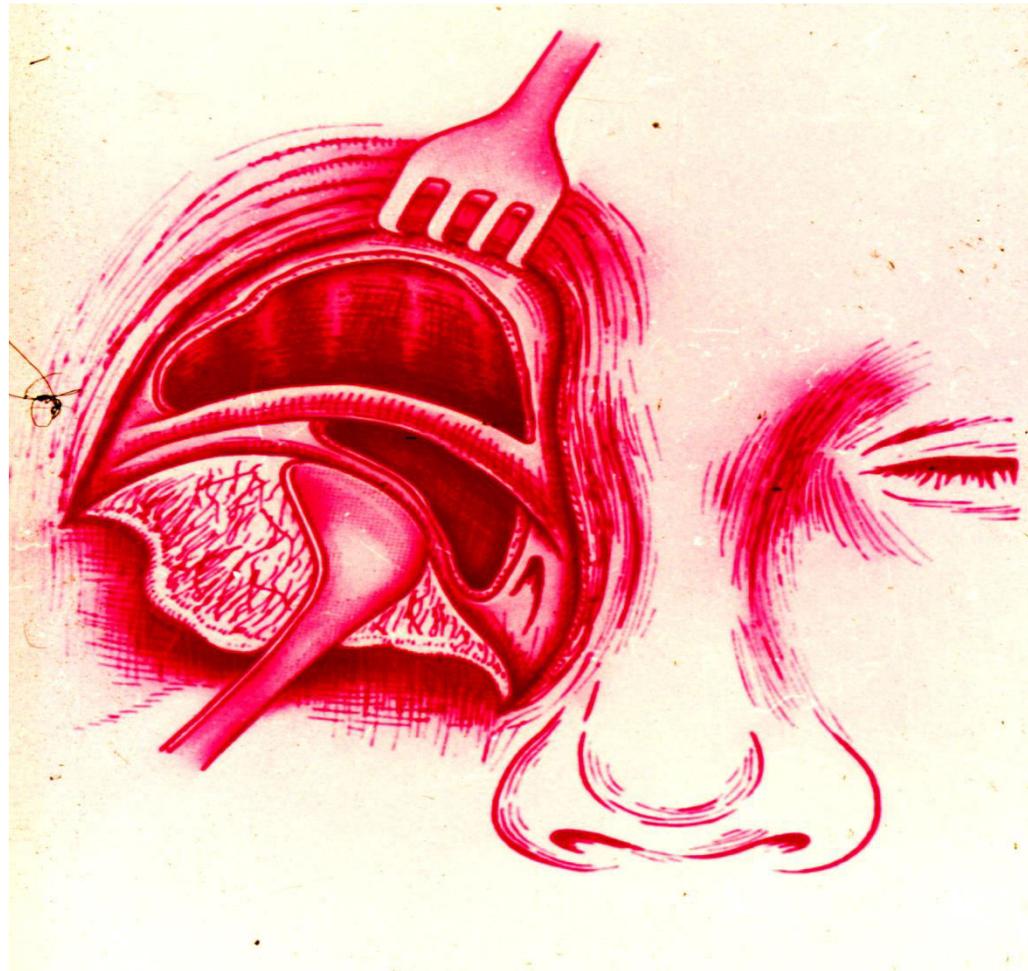
- ◆ **Endonasal;**
- ◆ **Extranasal Caldwell-Luc surgery.**  
**(G.W.Caldwell, 1834-1918, American otolaryngologist, H.Luc,1855-1925, French otolaryngologist).**

# Treatment

## Frontal sinus surgery

- ◆ Killian surgery;
- ◆ Belogolovov surgery;
- ◆ Операція за Янсенom-Ріттером.

# Killian surgery



# Treatment

## Surgeries on methodical sinus

- ◆ Операція за Вінклером;
- ◆ Операція за Галле.

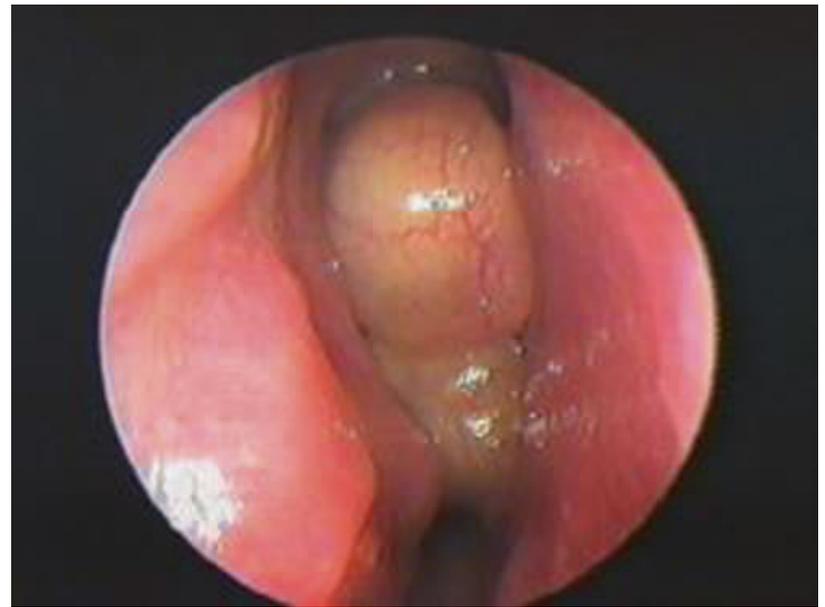
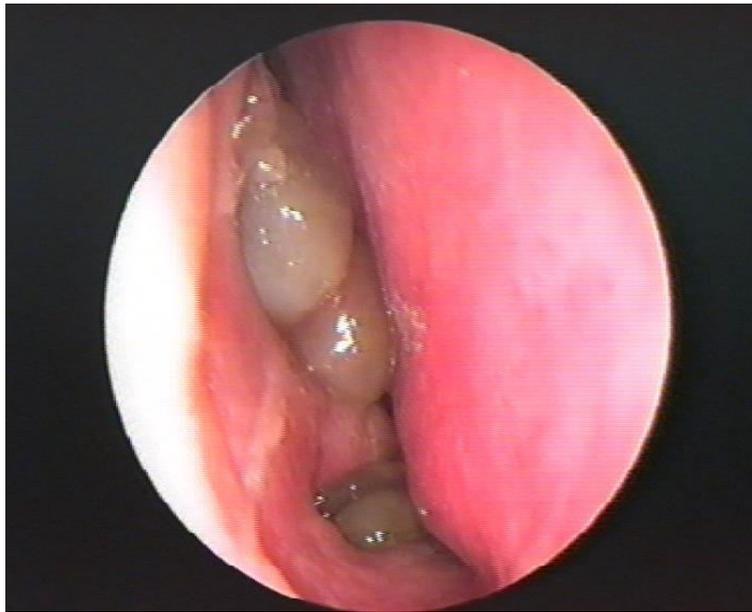


# Nasal polypotomy and endonasal incision of ethmoidal bullae according to Halle



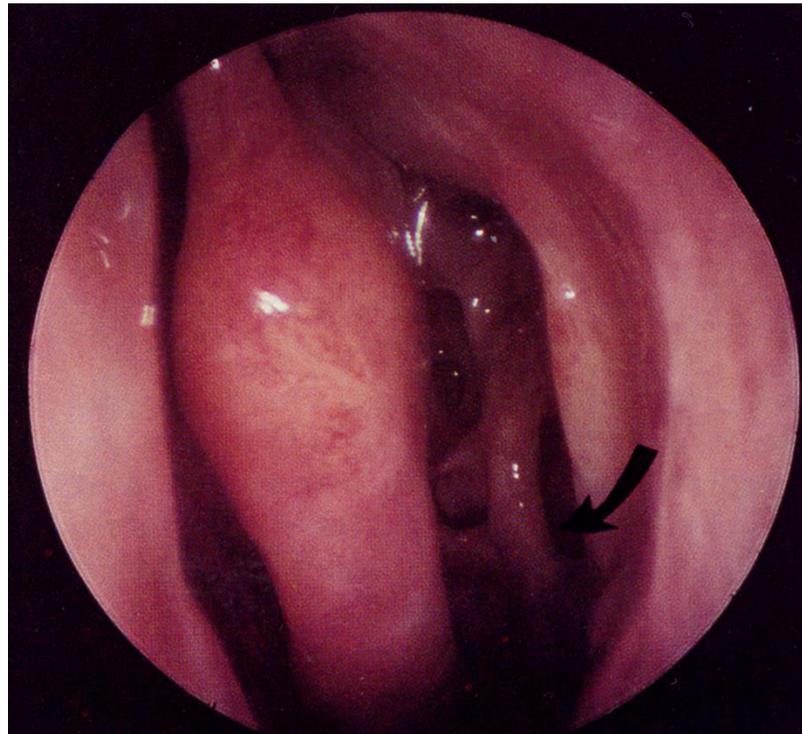
# Treatment

## Endoscopic surgeries of nose and paranasal cavities



**Nasal polyps**

# Nasal cavity after ptyoethmoidotomy and fenestration of left maxillary sinus



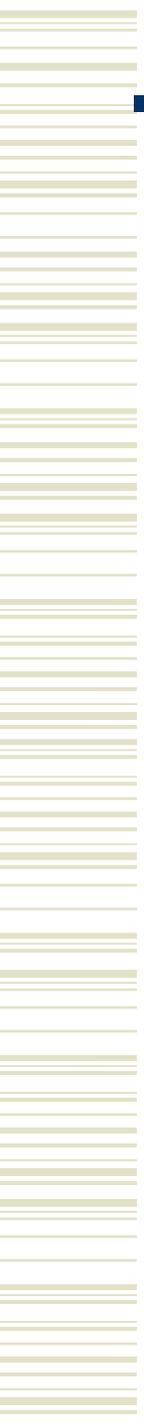
**Opening of  
maxillary sinus**

# Rhinogenic complications

- 1. Orbital.**
- 2. Intracranial.**

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Національного медичного  
університету ім. О.О.Богомольця

- ◆ Has stationary patients with sinusitis, 4-6 among them have rhinogenic complicationsЗа рік лікується 550-650 стаціонарних хворих на синуїти, з них 4-6 хворих з риногенними ускладненнями.



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# etiology Етіологія

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- 1. Grip virae.**
- 2. Bacterial microflora**

# Conditions for occurrence of rhinogenic complications

- 1. Close anatomic location**
- 2. Angio-nervousos contact**