

## Causes Symptoms and Treatment of Odontogenic Insinitis in Adults

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### ANNOTATION

*The article discusses the pathological process, in most cases, develops due to insufficient attention to the state of the oral cavity, or is a complication after dental treatment. The disease in question develops for a whole group of probable causes. The first and main one is the unfavorable condition of the oral cavity. A whole group of pathogenic and opportunistic microorganisms and viral agents lives in the mouth.*

**KEYWORDS:** *odontogenic sinusitis, pathology, maxillary sinus, diagnosis, symptom, cause, treatment.*

### Introduction

Odontogenic sinusitis is an inflammatory and infectious, less often fungal infection of the mucous membranes of the epithelium of the nasal passages and, first of all, of the maxillary (maxillary) sinuses, caused by diseases of the dental profile. The second name of the pathology is maxillary sinusitis.

The pathological process, in most cases, develops due to insufficient attention to the state of the oral cavity, or is a complication after dental treatment. Thus, the name of the disease indicates the etiology of inflammation of the maxillary sinuses.

According to medical statistics, odontogenic sinusitis develops relatively rarely. It is observed in approximately 13-15% of clinical cases. It occurs mainly in adult patients from 20 to 60 years of age and older.

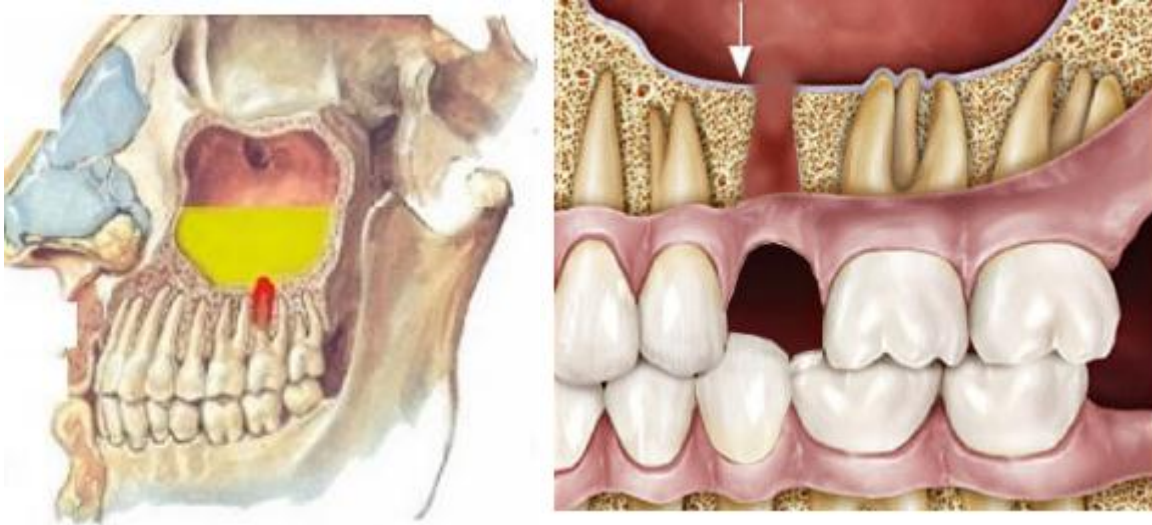
This is a complex and sometimes life-threatening disease. It requires immediate medical attention, otherwise there is a high risk of threatening complications, up to meningitis and cerebral edema due to the penetration of flora into cerebral structures with blood flow.

### What is pathology

The essence of the pathological process is the penetration of bacteria or viruses into the area of the maxillary sinuses through the indigenous painters in the upper jaw.

This is the most common scenario because the roots of these teeth protrude partially into the maxillary sinuses (sinuses) and may not even be covered by mucous membranes; in other words, it is a direct route from the mouth to the sinuses.

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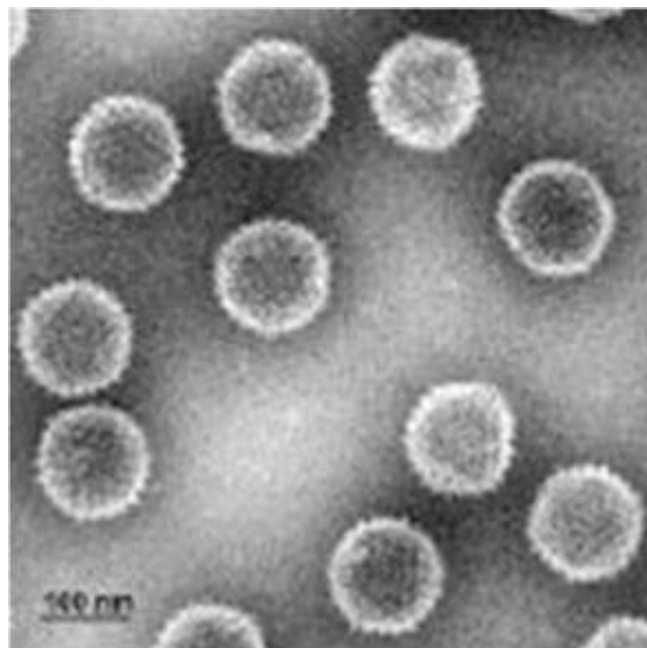
Theoretically, any inflammatory process localized in the upper jaw can cause odontogenic sinusitis, since it involves the reproduction of bacteria that are looking for new ways of spreading. These are carious cavities, inflammation of the gums or fistula, periodontal disease, periodontitis, bacterial lesions of the mucous membranes of the oral cavity, the presence of a cyst.

The second type of causes is the consequences of a dentist's surgical intervention. For example, the removal of the 5th, 6th or 7th tooth often leads to the formation of a through hole (perforation of the bottom of the maxillary sinus) through which microorganisms penetrate and an odontogenic cyst of the maxillary sinus is formed.

The remnants of the roots of the teeth or nerve endings in the gums, the penetration of the filling composition into the sinus, inaccurate installation of implants and other manipulations of the dentist also lead to inflammation.

#### **What microorganisms cause the disease**

The disease in question develops for a whole group of probable causes. The first and main one is the unfavorable condition of the oral cavity. A whole group of pathogenic and opportunistic microorganisms and viral agents lives in the mouth.



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They cause acute forms of sinusitis with involvement in the pathological process of the entire nasopharynx and oropharynx. The virus of the first type (aka HSV) provokes classic, severe forms of the disease with intense mucus flow, exudation, and swelling.

The second type of agent is relatively rare in medical practice, as well as the third (varicella-zoster most often provokes chicken pox). The fourth and fifth types (Epstein-Barr virus and cytomegalovirus) are the most dangerous. They cause purulent generalized lesions of the whole organism.

Most often in the oral cavity they live in those who practice oral-genital sexual contacts. In particular, there are ureaplasmas. Both those and others cause weak, sluggish catarrhal forms of sinusitis.

The first representative of this flora is the green streptococcus. It, like mycoplasmas, causes sluggish forms of sinusitis with involvement of the oropharynx in the pathological process. It provokes secondary tonsillitis, acute tonsillitis, pharyngitis and other diseases of the same profile.

The second typical representative is *Staphylococcus aureus*. Hemolytic *Staphylococcus* a little less often. Both have tremendous antibiotic resistance and are difficult to treat. Cause complex forms of sinusitis with a necrotic component.

- Rotaviruses. Record holders in the number of cases of the formation of problems of the otolaryngological profile.
- Adenoviruses. They are somewhat less common.

### **How do they get into the mouth**

They are transported into the oral cavity in several possible ways at once. Most often, the nutritional factor matters. In other words, bacteria and viruses enter the mouth with food. Most often with unwashed vegetables, fruits, dirty or infected foods, spoiled food.

The second most important factor is household or contact household. Often, pathogenic microorganisms “settle” in the body in childhood, when young patients are most actively “pulling” their hands and dirty objects into their mouths. In the future, this may respond in the most negative way.

Airborne route. When breathing through the mouth, viruses and bacteria can enter the oral cavity. It is enough to be in a poorly ventilated room with an infected or potentially sick person for some time to become a carrier of the bacteria yourself.

Sexual way. Rather oral-genital. Especially often we are talking about sexually transmitted infections.

Bacteria and viruses from the mouth are transported to the nasopharynx with the blood and lymph flow (lymphogenous and hematogenous pathways).

### **Why the immune defense is not effective**

The second significant category of factors concerns a decrease in the activity of the immune system. It can be argued that everyone or almost everyone is infected. But not everyone suffers. What is the reason?

It lies in immunity. The more active the work of the protective system, the less likely it is to develop sinusitis. Why is immunity reduced?

- Heavy physical activity.
- Stresses (distresses).

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- Abuse of alcoholic beverages.
- Tobacco smoking.
- Regular diseases of infectious and inflammatory type. ARI, SARS and their varieties.
- Hypothermia on a regular basis.
- Other factors, including chronic diseases of the endocrine profile, cardiological profile, and other types.
- The third group of factors is trigger causes. That is, those that provoke the immediate onset of the pathological process. Among them:
  - Traumatic lesions of the upper respiratory tract.
  - Untreated runny nose of various origins.
  - Damage to the nasal septum.
  - Polyposis of the upper respiratory tract, adenoids.

В комплексе эти причины в разных сочетаниях обуславливают начало болезни. Together, these causes in different combinations cause the onset of the disease.

### Symptoms

The first and most characteristic symptom of odontogenic sinusitis is pain. Localized in the upper teeth and gums, as well as cheeks and eyes.

It intensifies at night, when a person assumes a horizontal position. It also becomes more intense when bending over and chewing food.

The nature of the discomfort is pulling, pressing, aching. The pain radiates (gives) to the eyes, head, jaws. Swelling of the gums and cheeks is possible, on the side from which the inflammation occurs.

The following symptoms develop progressively. The most common clinical picture is:

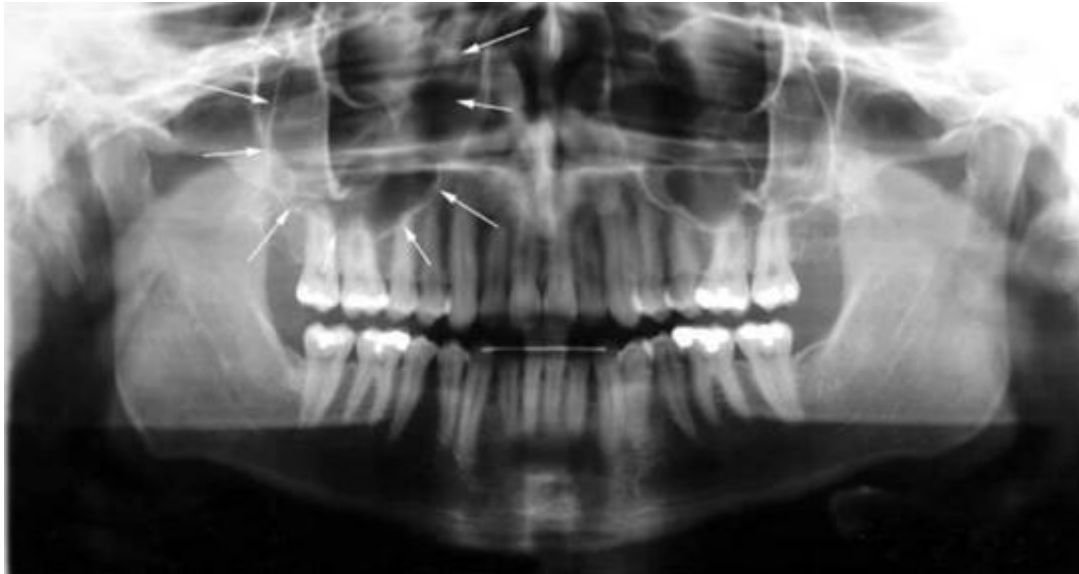
- Discharge of exudate from the nose. In the first 3-5 days, the mucus is clear. Then it thickens and becomes purulent, yellow in color with a pungent odor of necrosis (tissue death).
- Feeling of fullness in the region of the nose. It is caused by intense edema, the development of catarrhal phenomena, and stagnation of mucus in the nasal sinuses.
- Fatigue, decreased performance to a minimum.
- Hyperthermia. Body temperature rises to 38-39 degrees Celsius with an acute current process. Chronic and subacute phases occur at low thermometer readings.
- Manifestations of general intoxication of the organism. This is a headache, nausea, dizziness, fatigue, a feeling of body cottoniness, loss of normal appetite. It is characterized by the release into the blood of a large number of waste products of bacteria.
- Deterioration of cognitive functions, up to short-term memory loss (in difficult cases).

Other manifestations are possible, such as symptoms of tonsillitis, pharyngitis, secondary sinusitis.

### Diagnostics

Diagnosis is carried out by ENT doctors. To make and verify the diagnosis, an oral questioning of the patient, anamnesis, examination of the nasal passages with a rhinoscope, a panoramic x-ray of the upper jaw and maxillary sinuses are sufficient.

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If the pictures show signs of sinusitis, a bacteriological culture of mucus on nutrient media is prescribed to determine sensitivity to antibiotics. In a complex of these studies is quite enough.

### Treatment

Treatment of odontogenic sinusitis is mostly conservative. Operative techniques are used when there is a threat of cerebral edema, if severe purulent sinusitis occurs. Thus, operations are not always required. In most cases, the therapy is medical.

Specialized medicines are prescribed:

- Anti-inflammatory non-steroidal origin. Used to relieve generalized and local inflammation.
- Anti-inflammatory corticosteroids. Dexamethasone, Prednisolone. They are used in a small number of cases for the same purposes, with the ineffectiveness of the first drugs.
- Vasoconstrictor in the form of nasal drops. Used to relieve a runny nose and relieve the main symptoms of sinusitis.
- Antibacterial drugs. Appointed in the vast majority of cases. Required to destroy pathogenic flora and viral agents.
- Bacteriophages. Destroy bacteria, are used if the patient has resistance (resistance) to antibiotics, or contraindications to their use.

In severe cases, it is necessary to flush the maxillary sinuses with a Yamik catheter, but not a puncture. Puncture is an outdated technique and should be used only in potentially fatal cases (it is also desirable to avoid it). If the cause is dental problems, the intervention of a dentist is required. If necessary, an operation is performed to remove hopelessly affected teeth, followed by closing the message (perforation) between the bottom of the sinus and the socket of the extracted tooth.

### Conclusion

The pathological process, in most cases, develops due to insufficient attention to the state of the oral cavity, or is a complication after dental treatment. Thus, the name of the disease indicates the etiology of inflammation of the maxillary sinuses. If necessary, an operation is performed to remove hopelessly affected teeth, followed by closing the message (perforation) between the bottom of the sinus and the socket of the extracted tooth.

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