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MAXILLARY SINUSITIS: CAUSES, SYMPTOMS, DIAGNOSIS, THERAPY

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Maxillary sinusitis is an inflammatory condition affecting the maxillary sinus, often triggered by infections, allergens, or anatomical factors. The most common pathogens involved include viruses, bacteria, and less frequently, fungi. Symptoms typically encompass facial pain or pressure, nasal congestion, and a reduction in the sense of smell. Physical examination may reveal tenderness over the sinus area and purulent nasal discharge. For effective diagnosis, healthcare providers may utilize imaging techniques such as CT scans or X-rays to assess sinus health. In many cases, a thorough history and physical examination suffice. Treatment strategies often include the use of nasal decongestants, saline irrigation, and, if a bacterial infection is confirmed, appropriate antibiotics. In severe or chronic instances, surgical intervention may be necessary to enhance the sinus drainage and minimize recurrence. It is essential for practitioners to tailor a management plan that addresses individual patient needs to ensure optimal recovery.

Key words: maxillary sinusitis, odontogenic maxillary sinusitis, rhinosinusitis, oral message, filling material.

Maxillary sinusitis is an inflammation of the mucous membrane of the maxillary sinus, and sometimes the periosteum and bone walls of the paranasal sinuses. Maxillary sinusitis due to its occurrence is divided into: rhinogenic, odontogenic, traumatic. Rhinosinusitis, depending on the localization: maxillary sinusitis (damage to the maxillary sinuses), ethmoiditis (damage to the latticed sinuses), frontitis (damage to the frontal sinuses), sphenoiditis (damage to the sphenoid sinuses). By etiology: respiratory viruses (influenza viruses, rhinoviruses, adenoviruses, enteroviruses, coronaviruses, etc. D.), bacteria (aerobic, anaerobic), fungi (in patients with immunodeficiency, e.g. with poorly controlled diabetes mellitus or HIV), mixed, allergic. Rhinosinusitis in a smaller case (2-10%) has a bacterial etiology, and in the majority (90-98%) of cases it is caused by viruses.Odontogenic maxillary sinusitis is an inflammation of the mucous membrane, submucosa, and sometimes the periosteum and bone walls, the etiological factor of which is a causal tooth. Odontogenic maxillary sinusitis according to G. N. Marchenko:

– closed form: a) sinusitis as a consequence of chronic periodontitis, b) sinusitis as a result of suppuration of odontogenic cysts that have grown into the maxillary sinus;

– open form: a) perforated sinusitis, b) sinusitis that has developed as a complication of chronic osteomyelitis of the alveolar process or the body of the upper jaw.

The purpose of the study– to analyze the archival medical histories of patients diagnosed with maxillary sinusitis who were treated at the Regional Dental Clinic in Samarkand in terms of a modern view of the etiology, clinical features, diagnosis and treatment.

Materials and methods. The study is based on the analysis of 350 archived medical records of patients diagnosed with maxillary sinusitis who were treated at the Regional Dental Clinic in Samarkand from 2019 to 2024. Gender: women – 60% (210 patients), men – 40% (140 patients). The average age of the patients was 56 years. The age group was 18-60 years old. In 2019, one of the most

common diseases in the Department of maxillofacial surgery, which ranks second, is the treatment of patients diagnosed with odontogenic maxillary sinusitis (21%). During the period 2019 to 2024, 110 patients were hospitalized in the Department of Maxillofacial surgery No. 1 (clean) and 25 patients in the Department of Maxillofacial surgery No. 2 (purulent) for the treatment of odontogenic maxillary sinusitis. Odontogenic maxillary sinusitis, in accordance with the European conciliation document (EP3OS), is divided into 2 types by the nature of the clinical course: – acute sinusitis, with complete disappearance of symptoms within 12 weeks; – chronic sinusitis, with a disease duration of more than 12 weeks without complete disappearance of symptoms.

Complaints of the patient with acute maxillary sinusitis: pain in any half of the face (with irradiation to the temporal, occipital and frontal regions and teeth of the upper jaw), stuffiness of the corresponding half of the nose and a weakening of the sense of smell, an increase in body temperature to 37.5–39 ° C, sleep disturbance. When examined in the area of the upper arch of the vestibule of the mouth, hyperemia, pain in the molars and premolars when biting, especially in the area of the causal tooth, swelling of the mucous membrane, painful tooth percussion or its mobility of II, III or IV degrees are noted. Edema and hyperemia of the mucous membrane, mucopurulent or purulent discharge from the middle nasal passage or fistula, especially when the head is tilted down, forward and to the healthy side. In most cases, chronic maxillary sinusitis is asymptomatic and there are no complaints of pain. Sometimes patients report headaches of a limited or diffuse nature and decreased performance, lethargy, stuffy ears, possibly hearing loss, and no increase in body temperature. On examination, the configuration of the face is not changed, the mucous membrane of the upper vestibule of the mouth is not changed in color. Slight soreness along the transitional fold on palpation. The tooth reacts poorly to percussion, the causal tooth (teeth) with destroyed crowns, carious cavities communicating with the tooth cavity. Some patients report a feeling of heaviness in the head and headache, purulent discharge from the corresponding half of the nose and fistula. Epidemiology of odontogenic maxillary sinusitis: out of the 1,365 case histories reviewed by us for the period 2019 to 2024. 170 (48.5%) belonged to men, 180 to women (51.5%). Chronic maxillary sinusitis can occur due to an infectious process of the extracted tooth socket. Another etiological factor of ASF may be an iatrogenic cause (traumatic; medicinal; immune-toxic; infectious-allergic; mixed forms of maxillary sinusitis).

Traumatic iatrogenic ASF may be associated with dental procedures such as oral antrum (during extraction of upper teeth), traumatic perforation of the ASF wall, after surgical procedures (puncture of the anterior sinus wall, sinus lifting, resection of the root tip of the "causal" tooth). Other, less common factors of odontogenic maxillary sinusitis may be injuries to the upper jaw, an odontogenic cyst that has grown into the sinus, developing from chronic periapical granuloma, neoplasms and other pathological processes. During the study period, 55 patients were hospitalized in the Department of otorhinolaryngology for the treatment of maxillary sinusitis. During the same time period, 135 patients were hospitalized in the department of Maxillofacial surgery (CHLX-1 and CHLX-2).Rhinosinusitis, depending on the course: acute (<4 weeks); chronic (>12 weeks). Acute rhinosinusitis by the nature of pathomorphological changes is divided into: catarrhal, purulent, necrotic. Chronic rhinosinusitis: catarrhal, purulent, parietal hyperplastic, polypous, fibrous, cystic, mixed forms (Table. 10).In acute rhinosinusitis, patients complain of nasal congestion; mucopurulent discharge from the nose; headache and facial pain, aggravated by bending forward; slight increase in body temperature; hyposmia or anosmia; bad breath; pain in the teeth; soreness when palpating the

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projection points of the paranasal sinuses. In chronic rhinosinusitis, patients complain of impaired nasal breathing; localization of pain in the cheek and teeth (sinusitis); purulent discharge from the nasal cavity; nasal congestion; headache, general weakness and malaise. Epidemiology of maxillary sinusitis: the incidence is higher among women than among men.

Result and discussion. From 2019 to 2024, 350 patients diagnosed with maxillary sinusitis were hospitalized at the Regional Dental Clinic in Samarkand. The average population of the city of Samarkand for the same period of time is 573200 people. This means that over the past 5 years, 1 out of every 1,637 people has been hospitalized for maxillary sinusitis. The study was based on the analysis of 5325 archived medical records of patients diagnosed with maxillary sinusitis who were treated at the clinic, and rhinogenic maxillary sinusitis was present in 3355 (63%) patients, and odontogenic in 1970 (37%) patients. The main causes of odontogenic maxillary sinusitis in terms of the number of cases are: oral communication, chronic periodontitis, tooth root and sinuso-oral communication, foreign body (tooth root, implant, bone fragment, filling material) and other causes.

Conclusions. The study is based on the analysis of 2908 archival medical records of patients diagnosed with maxillary sinusitis who were treated at the Regional Dental Clinic in Samarkand for the period from 01.01.2019 to 31.12.2024, women accounted for 60%, men – 40%. The vast majority of people with maxillary sinusitis are 20-40 years old, the majority of patients are young and middle-aged, that is, the working-age population. Maxillary sinusitis by the nature of the clinical course: acute 25%, chronic 75% of cases. The etiology of maxillary sinusitis is rhinogenic and odontogenic in the genus. Rhinosinusitis is caused by viruses in most cases. One of the most frequent cases of treatment in the department of maxillofacial surgery, which ranks second after tooth extraction surgery, is the treatment of patients diagnosed with odontogenic maxillary sinusitis. The main causes of odontogenic maxillary sinusitis in terms of the number of cases are: oroanthral fistula, periodontitis, root and sinuso-oral communication, foreign body (tooth root, implant, fragment of bone material, filling material).

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