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ANALYSIS OF THE FREQUENCY OF MAXILLARY SINUS PATHOLOGY AMONG MALE AND FEMALE ADULTS

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Abstract

The maxillary sinuses diseases are an actual clinical problem today. **The aim** of our study was to determine the frequency of pathology of the maxillary sinuses of different origin and its age dynamics in adults.

500 series of anonymized tomograms of adults were analyzed: 22-35 years (1st group) and 36-60 years (2nd group in men) and 36-55 years (2nd group in women). Cone-beam computed tomography (CT) of the nose, paranasal sinuses, and upper jaw was performed on a

Point 3D Combi 500 cone-beam tomograph. RealScan software was used to analyze the test results.

The results of the study showed that among the adults who applied for examination of the maxillary sinus, only 20% had no pathology. Patients of the first age group are most often diagnosed with pathological changes of the maxillary sinus, which have a rhinogenic origin. In persons of the second age group, regardless of gender, the pathology of the maxillary sinus of odontogenic origin is most often diagnosed. With age, the number of pathologies of odontogenic origin increase both in men and in women, and the number of pathologies of other origin, including rhinogenic - decreases.

Key words: maxillary sinus; adulthood; cone-beam computed tomography; rhinogenic pathology; odontogenic pathology.

Introduction

Diseases of the maxillary sinuses are serious clinical problem of two related specialties - otorhinolaryngology and dentistry [1-5]. Literature sources indicate that acute sinusitis amount 40-60% in the structure of patiens presentations to ambulant treatment [1, 6], and their frequency increases by 1.5-2% per year [1, 7]. According to Andreychyn Y.M., Omelyash V.I. [1] about 15% of the population suffers from acute and chronic sinusitis. Due to the possible asymptomatic course in the initial stages of the disease, in more than 30% of cases this pathology is not diagnosed in time, which leads to complications, prolongation of treatment, reduced quality of life, prolonged disability and shifts the problem into a medico-social category. [1, 8]. Modern diagnostic methods, which include cone-beam computed tomography, make it possible to diagnose the development of pathology in the early stages, to clarify its etiology and choose the most effective treatment algorithm for each case [9-11].

The aim of our study was to determine the frequency of pathology of the maxillary sinuses of different origin and its age dynamics in adults.

Material and methods. 500 series of anonymized tomograms of adults - patients of the center of medical 3D diagnostics (Lviv) were analyzed. All examined individuals were divided into 2 age groups: 22-35 years (1st group) and 36-60 years (2nd group in men) and 36-55 years (2nd group in women). Cone-beam computed tomography (CT) of the nose, paranasal sinuses, and upper jaw was performed on a Point 3D Combi 500 cone-beam tomograph. RealScan software was used to analyze the results of tomographic examination using layered sections of the DICOM format.

Results

An analysis of 500 series of computed tomograms of the maxillary sinus (MS) showed that only 20% among adults who apply for examination of the sinuses, in a sample formed by randomization, showed no pathology (Table 1). It was found that the percentage of people without pathology of the MS among men and women is the same.

Analysis of the incidence of various types of MS pathology in adults of different gender revealed that the frequency its in men tends to decrease with age, and in women to increase (Table 1).

Among the identified pathologies of the MS, sinusitis of rhinogenic and odontogenic origin was most often diagnosed, much less often - polyps, injuries, post-traumatic and postoperative complications, etc. (Table 1, Fig. 1-4).

Table 1

Frequency of occurrence of various types of pathology of the MS in adult males and females

Group of subjects		Condition of the maxillary sinus	Number of cases		Total
men	22-35 years	Without pathology	25		126
		Pathology of rhinogenic origin	49	101	
		Pathology of odontogenic origin	33		
		Other types of pathology	19		
	36-60 years	Without pathology	22		104
		Pathology of rhinogenic origin	29	82	
		Pathology of odontogenic origin	44		
		Other types of pathology	9		
women	22-35 years	Without pathology	32		159
		Pathology of rhinogenic origin	58	127	
		Pathology of odontogenic origin	48		
		Other types of pathology	21		
	36-55 years	Without pathology	23		111
		Pathology of rhinogenic origin	30	88	
		Pathology of odontogenic origin	47		
		Other types of pathology	11		

Both men and women of the first age group are most often diagnosed with pathological changes of the MS, which have a rhinogenic origin (Table 1, Fig. 5). Their

frequency is 38.9% in men and 36.5% in women. Pathologies of the MS of odontogenic origin are less common - in 26.2% of men and 30.2% of women.

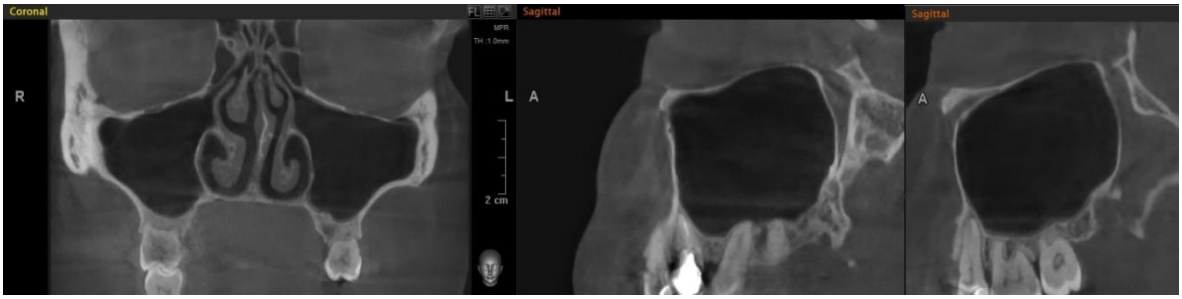

Fig. 1. CT image of the MS without pathological changes

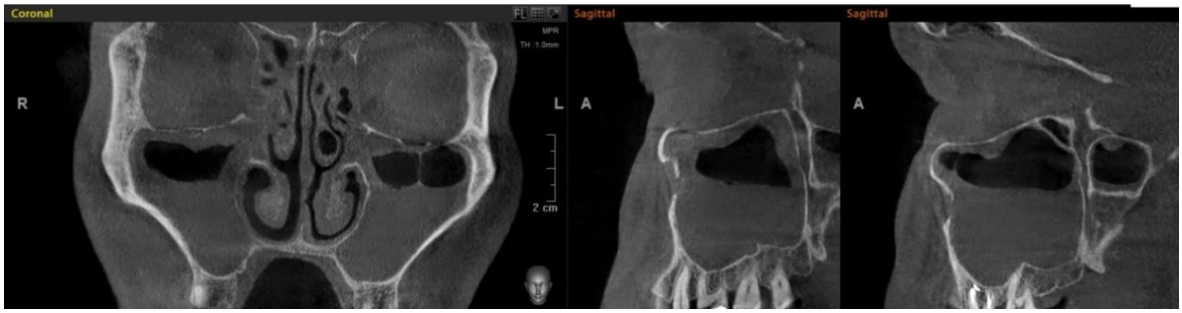

Fig. 2. CT image of the MS with diagnosed rhinogenic sinusitis

Fig. 3. CT image of the MS with diagnosed odontogenic sinusitis

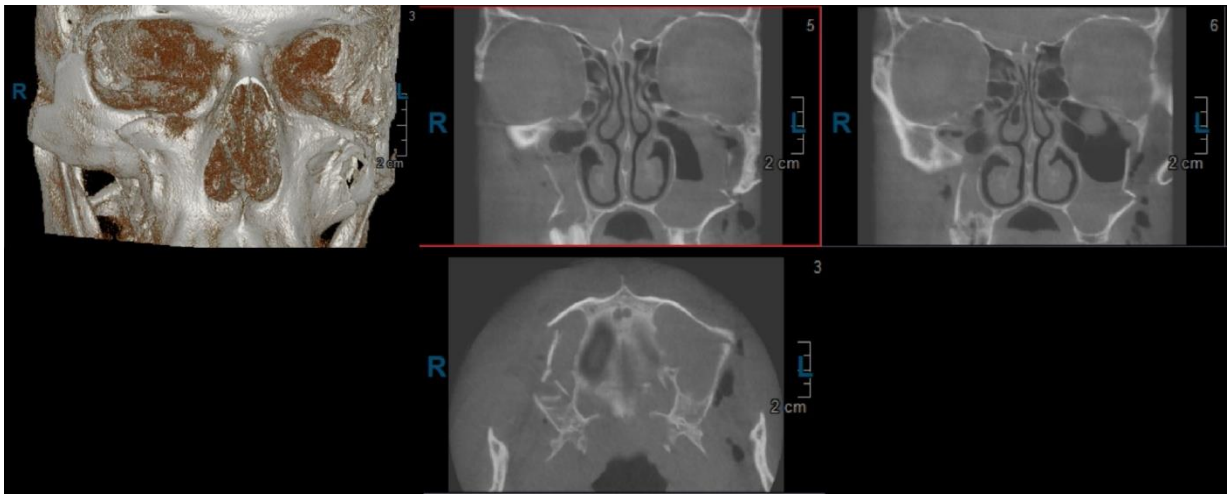

Fig. 4. CT image of the MS after injury

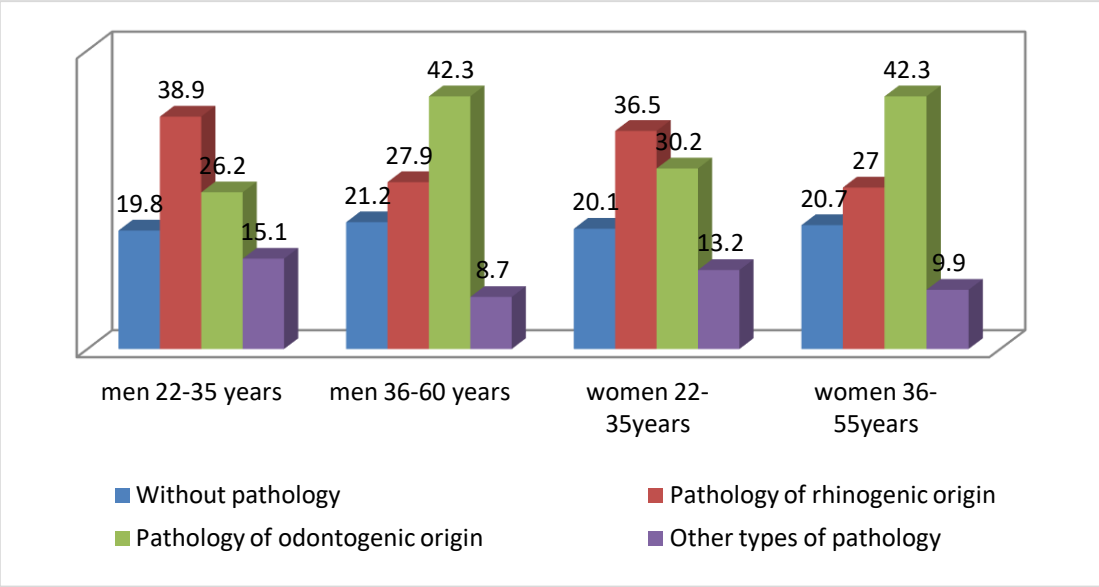

Fig. 5. Comparison of the frequency of detection of MS pathologies of different origin in males and females during different periods of adulthood according to CT (%)

In persons of the second age group, regardless of gender, the pathology of MS of odontogenic origin is most often diagnosed (Table 1, Fig. 5). Both men and women it amounts 42.3%. Pathology of MS of rhinogenic origin in this age group was 27.9% for men and 27% of women.

Pathologies of the MS of other origin (injuries, tumors, etc.) in the subjects of both age groups, regardless of gender, were rarely found (table. 1, fig. 5). In men, their particular share in the first age group was 15.1%, in the second - 8.7%, and in women 13.2% and 9.9% for each age group, respectively.

The analysis of the age dynamics of the frequency of detection of MS pathologies of different origin showed that with age the number of pathologies of odontogenic origin increases, and the number of pathologies of other origin, including rhinogenic - decreases (Fig. 5).

The results of the study allowed us to draw the following **conclusions:**

1. Among the adults who came for the examination of the MS, only 20% had no pathology. The percentage of people without MS pathology among men and women is the same.

2. In men, the incidence of MS pathology with age tends to decrease, and in women to increase.

3. Among the identified pathologies of the MS, sinusitis of rhinogenic and odontogenic origin was most often diagnosed, much less often - polyps, injuries, post-traumatic and postoperative complications, etc.

4. Patients of the first age group are most often diagnosed with pathological changes of the MS, which have a rhinogenic origin. In persons of the second age group, regardless of gender, the pathology of MS of odontogenic origin is most often diagnosed.

5. With age, both men and women increase the number of pathologies of odontogenic origin, and the number of pathologies of other origin, including rhinogenic - decreases.

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