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FEATURES OF MORPHOLOGICAL VARIANTS OF SQUAMOUS CELL CARCINOMA OF THE MAXILLARY SINUS: IMMUNOHISTOCHEMICAL CHARACTERISTIC

ABSTRACT. Background. The feature of malignant tumours in maxillary sinus is a late appeal of patients (T₃-T₄), as a result of the absence of pain and minor clinical manifestations, it requires large amounts of surgical interventions and leads to disability. **Objective.** The article analyzes the morphological variants of maxillary sinus squamous cell carcinoma (SCC) with their immunohistochemical characteristic. **Methods.** In the study we analyzed the original biopsy material from 37 patients with maxillary sinus cancer T₃₋₄N₀₋₁M₀ (31 men and 6 women) aged from 37 to 71 years with histologically confirmed diagnosis of SCC for 2010-2014. The primary monoclonal antibodies CK HMW (clone AE3), p63 (clone 4A4), p16^{INK4} (clone DCS 240) were used. **Results.** Analyzing the distribution of various forms of maxillary sinus SCC, it was found that the typical forms of SCC are found in most of cases, 29 of 37 (78.4%), compared with specific morphological forms that accounted for just 21.6%. **Conclusions.** Due to the expression of the marker CK HMW it was found that in typical forms of SCC and in some special morphological forms (spindle cell carcinoma and verrucous carcinoma) with decreasing degree of squamous cell differentiation, the level of the expression of CK HMW also decreases (p<0,001, r = 0.861; p <0,001, r = 0,638). It is an indicator of poor prognosis, but aggressive behavior of basaloid SCC and adenosquamous carcinoma do not depend on the presence or absence of CK HMW. High expression of marker p63 (average level 92,5±3,67%) is a key-point of verification of basaloid SCC. Lack of positive reaction with the marker of viral lesions p16^{INK4} in forms with keratinization confirms the idea of different etiologic factors and ways of carcinogenesis of typical forms of SCC.

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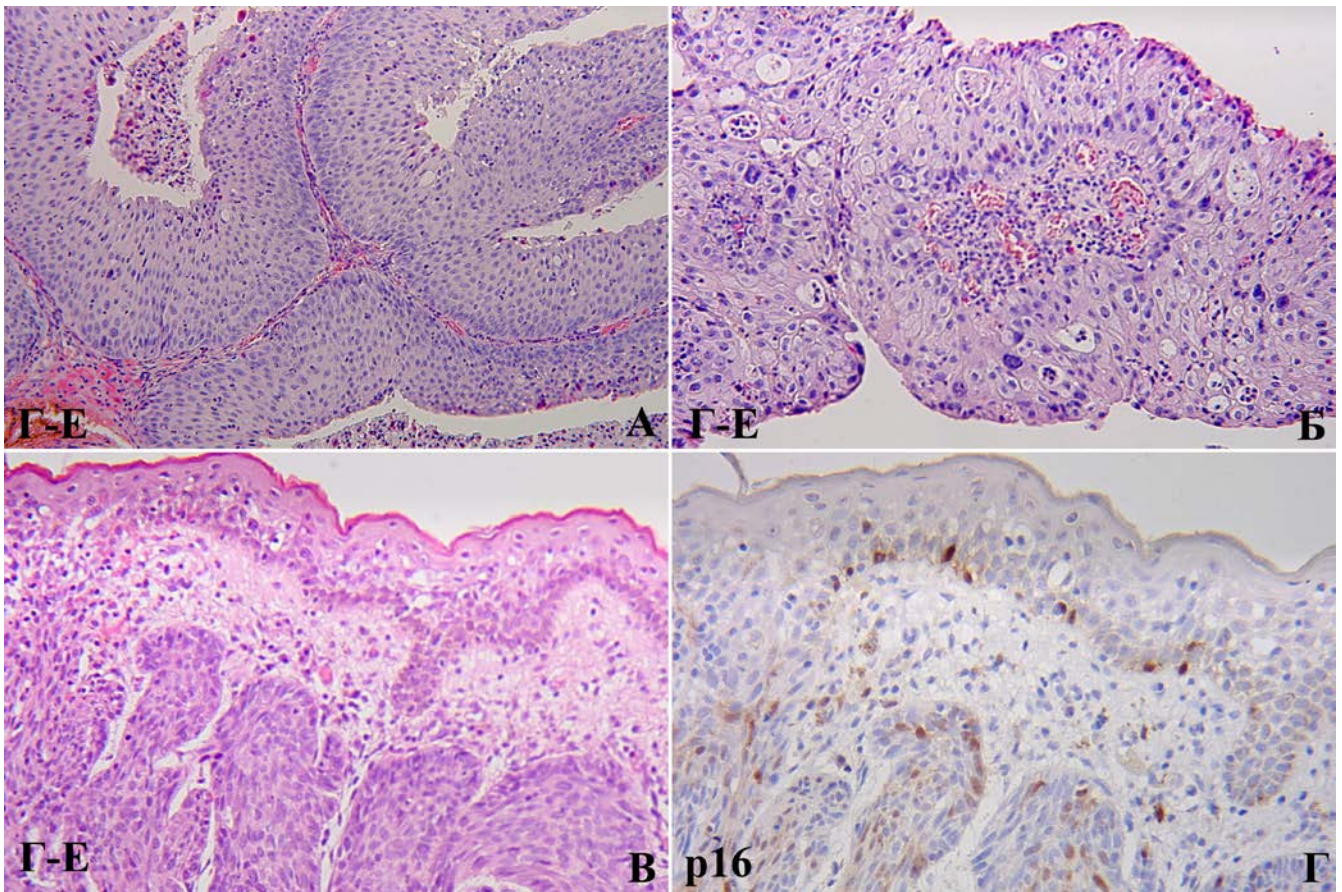


Fig. 1. A. Inverted papilloma of maxillary sinus, Hematoxylin&Eosin staining. $\times 200$. Б. Oncocytic papilloma of maxillary sinus, Hematoxylin&Eosin staining. $\times 200$. B. Typical non-cornified squamous cell carcinoma of maxillary sinus, connection to the stratified squamous epithelium having indirect signs of HPV-infection (koilocytosis, chronic inflammation), Hematoxylin&Eosin staining. $\times 200$. Г. Mixed nuclear-cytoplasmic expression of p16INK4 by single tumor cells and basal layer of epithelium, immunohistochemical method, additional staining with Mayer's hematoxylin. $\times 200$.

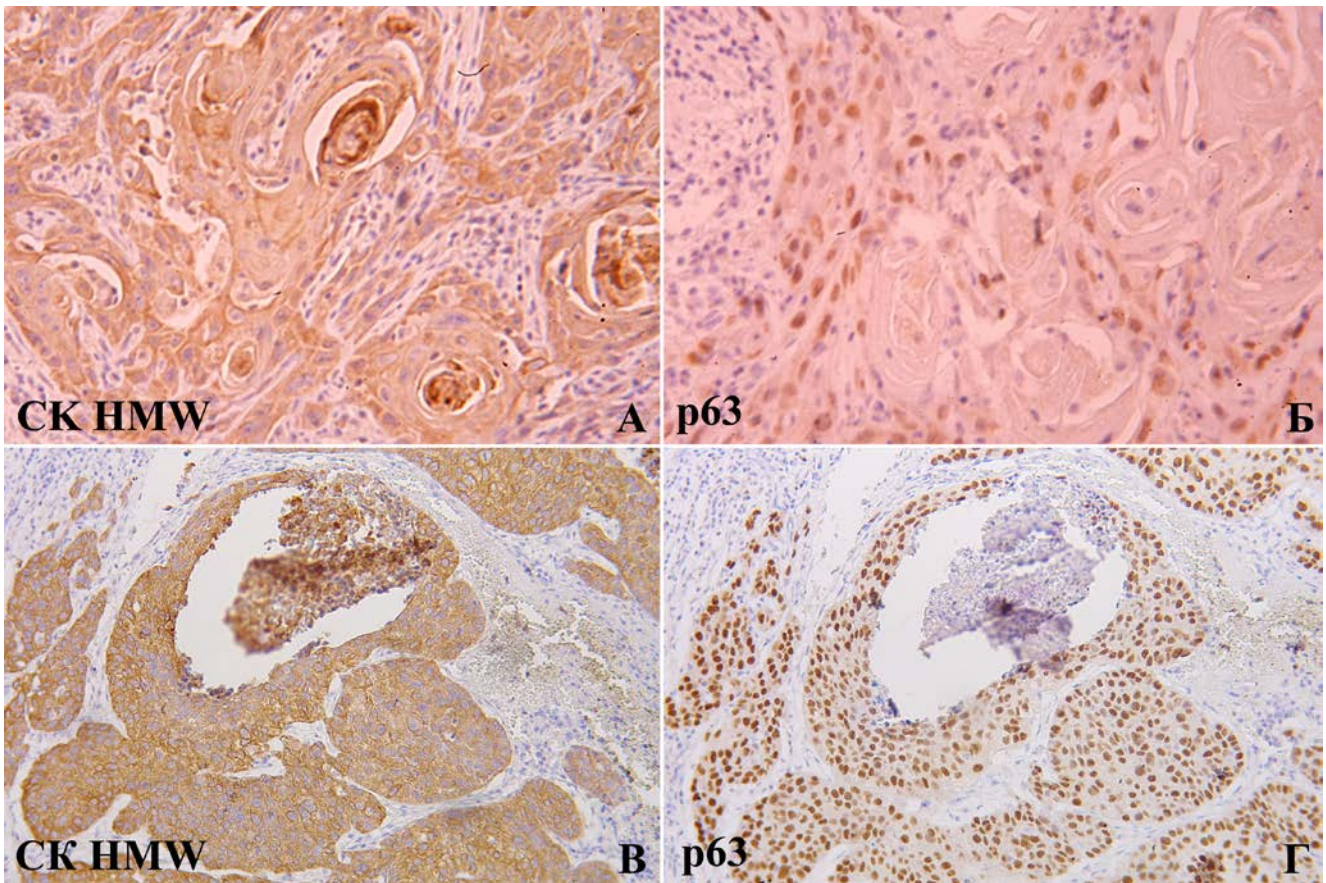


Fig. 2. A. Typical cornified squamous cell carcinoma of maxillary sinus, intensive cytoplasmic reaction (+++) with CK HMW, which indicates squamous-cell differentiation and is enhanced in keratin pearls; $\times 400$. Б. Intranuclear reaction with the marker of basal-cell differentiation p63 around the foci of cornification; $\times 400$. B. Basaloid squamous cell carcinoma with comedonecrosis in the center of "the nest", intensive cytoplasmic reaction (+++) with CK HMW; $\times 200$. Г. Intranuclear reaction with the marker of basal-cell differentiation p63 comprising the level up to 95% in basaloid squamous cell carcinoma; $\times 200$. Immunohistochemical method, additional staining with Mayer's hematoxylin.

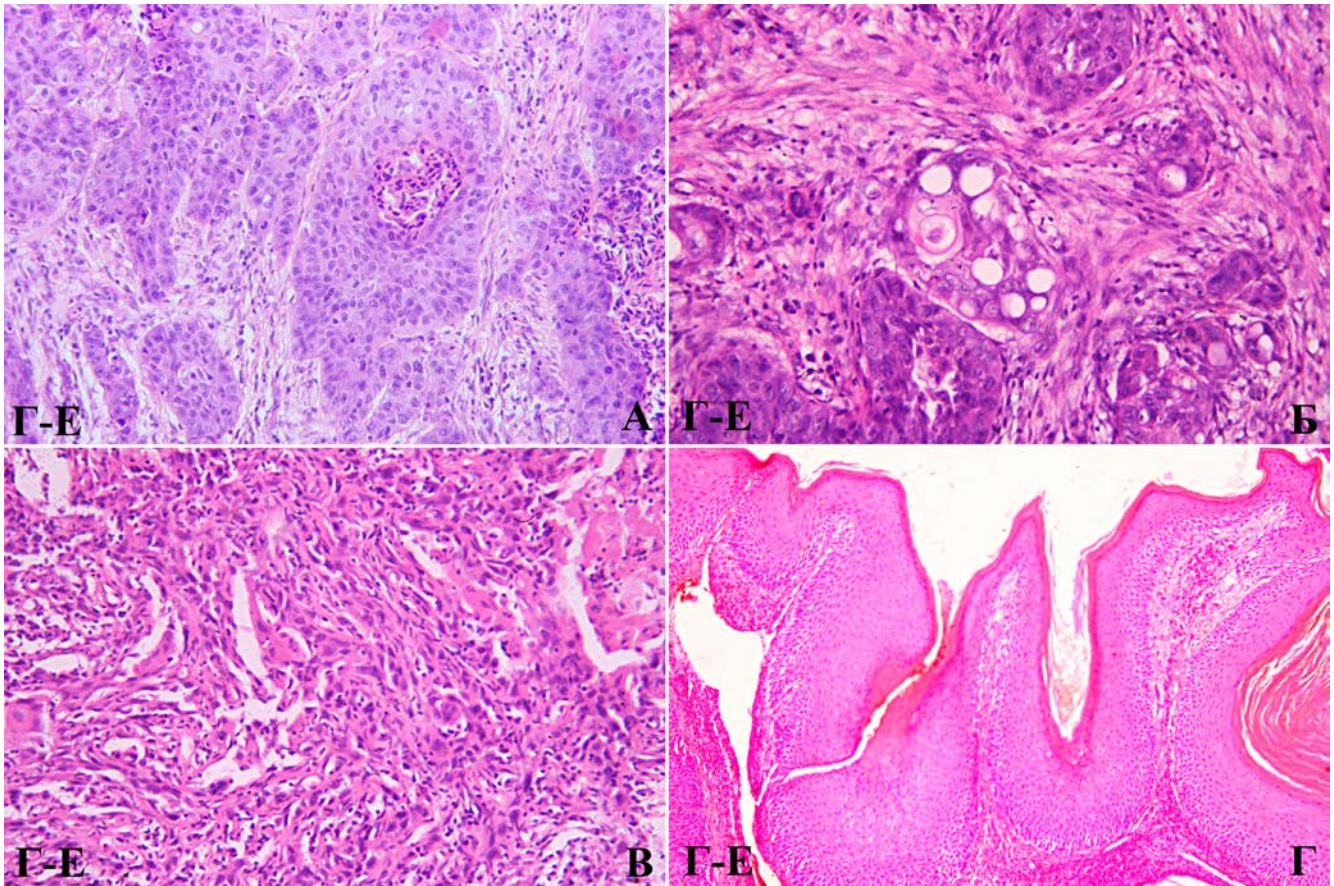


Fig. 3. Specific morphological variants of squamous cell carcinoma of maxillary sinus, Hematoxylin&Eosin staining. A. Basaloid squamous cell carcinoma, characteristic structure of roundish “nests” with central comedonecroses; $\times 200$. Б. Adenosquamous variant of squamous cell carcinoma: optically empty vacuoles of epithelial cells containing mucins, that is the evidence of partial glandular differentiation; $\times 200$. В. Spindle-cell carcinoma: malignant epithelial cells scattered in aggressive stroma; $\times 200$. Г. Verucous carcinoma: specific variant of “cancer in situ” with enhanced cornification and “church spires”; $\times 100$.

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