ORIGINAL ARTICLE

TUMORS AND TUMOR-LIKE LESIONS OF THE SALIVARY GLANDS: MORPHOLOGICAL CHARACTERISTICS OF THE SURGICAL MATERIAL

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ABSTRACT

The aim is to give a morphological characteristic of tumors and tumor-like lesions of the salivary glands in the course of a comprehensive analysis of the surgical material.

Materials and methods: The study used surgical material from 67 patients with various pathologies of the salivary glands. The patients were treated at Kyiv City Clinical Hospital No. 12 (Ukraine, Kiev) from 2014 to 2018. The resulting material was fixed in a 10% solution of neutral formalin (pH 7.4) for 24-48 hours, carried out according to the generally accepted technique and embedded in paraffin. Serial sections 2 μm thick were made from paraffin blocks and stained with hematoxylin and eosin. Microspecimens were studied, using Olympus BX-41 microscope (Japan).

Results: A comprehensive morphological study of the surgical material of patients with salivary gland pathology undergoing treatment at Kyiv City Clinical Hospital No. 12 (Ukraine, Kiev) for the period from 2014 to 2018 revealed benign tumors and tumor-like lesions of these glands. Pleomorphic adenomas and adenolymphomas represented benign tumors of the salivary glands, while cysts represented tumor-like lesions.

Different ratios of parenchymal and stromal components characterized pleomorphic adenomas of the salivary glands. On this basis, we identified three tumor variants (mesenchymal (15 cases, 50.0 %); mixed or classic (10 cases, 33.3 %); epithelial (5 cases, 16.7 %)). A characteristic microscopic feature of salivary gland adenolymphomas was a pronounced predominance of the parenchyma over the stroma. A well-defined wall, represented by connective tissue fibers and epithelial lining, characterized the cysts of the salivary glands. The connective tissue capsule separating the tumor tissue from the intact tissue of the salivary gland was clearly pronounced in adenolymphomas, and in pleomorphic adenomas it could be clearly expressed, intact, with tumor invasion or absent. In mesenchymal and mixed variants of pleomorphic adenomas, in comparison with the epithelial variant, there was a frequent tumor invasion of the capsule, thinning of the capsule or its absence.

Conclusions: Morphological examination of the surgical material allows us to diagnose tumors (pleomorphic adenomas and adenolymphomas) and non-tumor lesions (cysts) of the salivary glands. This, of course, is of great therapeutic, diagnostic and prognostic value. Among the identified pathology of the salivary glands, pleomorphic adenomas cause certain difficulties in morphological diagnosis due to their structural diversity and heterogeneity, sometimes requiring morphometric, immunohistochemical or genetic research.

KEY WORDS: tumors, tumor-like lesions, salivary glands, surgical materials, morphology

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INTRODUCTION

Saliva, produced by salivary glands, is a complex mixture of fluid, electrolytes, enzymes, and macromolecules. They function together and perform several important roles: lubrication to aid in swallowing and digestion; digestion of starches with salivary amylase; modulation of taste; protection against dental caries; and defense against pathogens [1]. The salivary glands are the paired parotid, submandibular and lingual glands alongside several hundred minor salivary glands, distributed through the upper aerodigestive system [2].

Many diseases, both local and systemic, can affect the salivary glands. Prevailing salivary gland diseases depend on various etiological factors. Small stones formed in the gland ducts can block the glands. Viral, bacterial, or (rarely) fungal agents may infect the glands or they may be the targets of autoimmune attacks, affecting their functions. In the salivary glands, benign and malignant tumors can develop [3]. Tumor-like lesions can also develop in the salivary glands [4].

At present, there are special methods diagnosing diseases of the salivary glands along with the questioning of the patient, examination and palpation of the affected area. These are: echography, thermal visiography, sialometry, scintigraphy and radionuclide scanning, radiography of the salivary gland, using radiopaque substances, and computed