

ULTRASONOGRAPHIC FEATURES OF PAROTID GLAND TUMORS

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Introduction. For the purpose of preliminary diagnosis, in order to determine the adequate scope of future surgical treatment, any surgical intervention on the parotid salivary glands is preceded by a clinical, laboratory and special examination. And an accurate diagnosis is made only on the basis of cytomorphological examination of the tissues of the removed neoplasm. The frequency of diagnostic errors in patients with neoplasms of the salivary glands remains high. Clinical examination of patients with this pathology should be complemented by the results of cytological examination, since none of the methods makes it possible to accurately diagnose [1, 2]. Based on this, the above issues of developing an algorithm for the comprehensive diagnosis of salivary gland neoplasms are currently relevant and directly affect the success of treatment.

The aim of the study is to determine specific ultrasound signs of PSG neoplasms.

Materials and Methods. We analyzed the data of 124 patients with PSG neoplasms who received inpatient treatment at the Department of Adult Maxillofacial Surgery at the Tashkent State Dental Institute Clinic in the period 2022-2024 in order to identify specific signs, which were further compared with the results of a pathomorphological study. The neoplasms were divided into nosological forms according to the international histological classification of salivary gland tumors (WHO, 2022).

Further, we analyzed additional ultrasound data of 28 patients with PSG neoplasms who applied to the clinic of the adult Clinical Hospital of the Tashkent State Medical University Dental Clinic, and 25 patients who were treated at the Department of Clinical Hospital of the Republican Specialized Scientific and Practical Medical Center for Otorhinolaryngology and Head and Neck Diseases (RSPMC of Otorhinolaryngology and Head and Neck Diseases). The results were compared with the conclusions of a pathohistological study performed at the center and various private laboratories.

The data was analyzed using descriptive statistics. Statistical processing of the obtained data was carried out using nonparametric methods (Mann-Whitney criterion) and correlation analysis (Pearson criterion). The results were presented as a median, and the reliability of the difference in average values was evaluated according to the Student's criterion. The principles of evidence-based medicine are used in the organization and conduct of research. The statistical analysis was performed using the OriginPro 8.6 program (OriginLab Corporation, USA).

Results and Discussion. Initially, PSG neoplasms were assessed based on the following criteria: localization, size, shape, contour clarity, homogeneity/inhomogeneity of structure, average density, presence or absence of signs of invasive growth in adjacent anatomical structures, the presence of lymphadenopathy of regional lymph nodes and invasion of facial nerve trunks.

Based on the results of the ultrasound study, the characteristic signs for each type of PSG neoplasm registered in the medical documentation for the period under study were identified. The structural features were also studied by color Doppler mapping (CDM). The data was analyzed and summarized in a Table 1.

Table 1. Ultrasound signs of PSG neoplasms

Type of neoplasm	Ultrasound signs	Ultrasound + CDM
Pleomorphic adenoma	reduced echogenicity, moderately heterogeneous echostructure with the presence of smooth or uneven, but always clear contours, clearly visible capsule, distal acoustic amplification	single vascular structures of small diameter with low-speed blood flow (linear speed 10-20 cm/s) along the periphery or absence of signs of vascularization
Adenolymphoma	clearly defined, hypoechoic or isoechoic with smooth contours, internal cystic inclusions and multiple septa	the blood flow in the projection of the formation is not determined, single vascular structures in the capsule of the neoplasm
Lymphangioma	cystic formation of multiple cavities, hypoechoic cystic components with thin septa, anechoic contents or with small echo inclusions, the boundaries are clear, but may also be uneven	weak perfusion along the internal walls and peripheral walls of the formation
Monomorphic adenoma	reduced echogenicity, smooth clear contours, sometimes distal acoustic amplification, the structure is almost homogeneous	moderate peripheral blood flow along the capsule
Adenocarcinoma	reduced echogenicity, uneven contours, heterogeneous structure	central vascularization with predominance of vessels with arterial blood flow and high speed (>30 cm/s)

Conclusion. Thus, textural analysis of ultrasound is an important component in the diagnosis of parotid salivary gland neoplasms, which provides valuable additional quantitative information about the structural features of tissues and reveals the most specific signs of each nosological form. The radiomic analysis program requires further improvement to increase sensitivity and specificity. The developed diagnostic model has demonstrated high efficiency and accuracy by significantly reducing the risk of

diagnostic errors, subsequently leading to the choice of the wrong method of surgical treatment, relapses and repeated interventions.

REFERENCES

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