

The Role of Grey Scale and Color Doppler Ultrasound in Evaluation and Differentiation of Major Salivary Gland Lesions

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ABSTRACT

Introduction: Ultrasonography (USG) plays a significant and crucial role in the diagnosis and management of salivary gland lesions and it is widely accepted as the first imaging method for assessment of major salivary glands. Grey scale and color Doppler are valuable tools in evaluation of salivary gland pathologies. They are helpful in characterising pathologic conditions of major salivary glands. USG is useful in diagnosis of infective and inflammatory conditions of salivary glands. It is useful in diagnosis of salivary gland tumours. USG and Doppler findings are useful in differentiation of pleomorphic adenoma from other salivary gland tumours.

Aim: To study the role of grey scale and color Doppler USG in evaluation of major salivary gland lesions. Also, to evaluate sensitivity and specificity of grey scale and color Doppler USG, in differentiation of benign and malignant salivary gland tumours.

Materials and Methods: Patients with neck swelling, pain or any complaints related to major salivary glands were screened with USG. Detailed study was done by grey scale,

color Doppler, power Doppler and pulse wave Doppler in patients with major salivary gland lesions.

Results: Total 70 patients enrolled. Parotid, submandibular and sublingual glands were involved in 74.5%, 24% and 1.5%, respectively. Total 65% were neoplastic lesions and 83% of pleomorphic adenomas occurred in parotid gland. Out of 28 benign nodules 22 (78.5%) showed grade 0/1+ vascularity and of the 18 malignant tumours 16 (88.8%) had Grade 2+/3+ vascularity. PSV was >25 cm/sec in 77.7% malignant tumours. Total 72% of malignant tumours had RI of >0.8, while only 10.7% of benign tumours showed RI of >0.8. Malignant tumours showed PI of >1.8 in 66.6%, in comparison 14.3% in benign tumours. Total 13 (72.2%) out of 18 were correctly diagnosed on grey scale USG alone, while 16 (88.8%) were correctly diagnosed when Doppler was used along with grey scale USG.

Conclusion: USG is the initial imaging modality of choice in evaluation of major salivary gland lesions. Grey scale USG plays essential role in detection of salivary gland tumours. Doppler USG is helpful in differentiating benign and malignant tumours.

Keywords: Parotid gland, Pleomorphic adenoma, Malignant tumours