

Middle Ear Resonance Values of Patients with Temporomandibular Disorder

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Abstract

Objective: This study aimed to investigate the effect of the disease on the middle ear resonance frequencies with wide-band tympanometry in the people with temporomandibular disorder (TMD). **Methods:** A total of 40 individuals (24 patients, 16 control groups), 18 years of age and older, 25 females and 15 males, were included in the study. For the patients who came to the Oral Diagnosis Department of XXXX University with the complaint of TMD, the patient's history and detailed examination were taken by the specialist dentist. Pure tone audiometry (125-8000 Hz air-way, 250-4000 Hz bone conduction thresholds) and speech audiometry, acoustic immitance and middle ear resonance measurements, outer ear resonance test were applied. **Results:** TMD ipsilateral and contralateral middle ear resonance values for each individual of the study group and control group and statistical data were determined. No difference was observed in the mean values of the 3 groups for middle ear resonance. However, there was a significant difference between the middle ear resonance values of the TMD ipsilateral and control groups. **Conclusion:** In a patient population with TMD the increase in middle ear RF values in the ipsilateral ears of the lesion may provide evidence of an increase in the stiffness of the middle ear system, offering a new perspective on the pathophysiology of the disease. **KEY POINTS** 1) Middle ear canal resonance frequency can be determined with wideband tympanometry (WBT). 2) There was no difference in the mean values of the three groups for the ipsilateral of the temporomandibular disorder, the contralateral of the temporomandibular disorder and the middle ear resonance values of the control group. 3) It was observed that there was a significant difference between the ipsilateral resonance values of the TMD patient group and the middle ear resonance values of the control group. 4) This study aims to present additional findings and methods for differential diagnosis by showing the differences between clinical tests applied to individuals with TMD and middle ear findings of normal individuals. 5) This study will also provide the first findings of minor middle ear pathology in patients with TMJ disorders by WBT.

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