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Evaluation of Temporomandibular Joint Dysfunction by Magnetic Resonance Imaging

Mehmet DALKIZ¹

Emre PAKDEMİRLİ²

Bedri BEYDEMİR¹

¹Department of Prosthetic Dentistry, Dental Sciences Center, Gülhane Military Medical Academy, Ankara, ²Department of Radiology, Faculty of Medicine Pamukkale University, Denizli - TURKEY

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 [Authors](#)



medsci@tubitak.gov.tr

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Abstract: Many diagnostic imaging techniques are available to aid clinicians, including transcranial radiography, conventional tomography, computed tomography, arthrography, single photon emission computed tomography (SPECT) imaging and magnetic resonance imaging (MRI). The aim of this study was to evaluate clinical findings and MRI features of temporomandibular joint (TMJ) disorders. The clinical histories of 251 patients (502 joints) with MR images were evaluated. Eight clinical variables (articular pain, clicking, locking, limitation of mouth opening, dislocation (luxation), headache (temporal, facial or neck), occlusal disharmony) and imaging findings "Normal, Anterior Disk Displacement With Reduction (ADDR), Anterior Disk Displacement Without Reduction (ADDWR) Anterior Disk Displacement With Reduction + Effusion (ADDR +E), Anterior Disk Displacement Without Reduction + Effusion (ADDWR+E), Degeneration, Osteophyte, Posterior Disk Displacement (PDD)) were evaluated. A total of 175 of the TMJs were found to be normal according to MRI findings. Fifty-six unilateral, and 210 bilateral anterior disc displacement with reduction were detected, as well as nine unilateral, and 12 bilateral ADDWR, 21 unilateral, and 58 bilateral ADDR+E; 10 unilateral, and 18 bilateral ADDWR+E; 28 unilateral, and 35 bilateral degenerative arthritic changes; 44 unilateral, and 19 bilateral osteophytes were found. The MRI of TMJs were found normal in 17.9% patients (29.2% female, 5.6% male) with clinical variables. Most of the patients (190 female, 56 male) with TMJ disorders were found to have psychological problems. All of the patients displaying clinical symptoms of TMJ disorders have occlusal disharmony (ground teeth, premature contact, mandibular prognathy or retrognathy, overbite, deepbite, openbite, laterognathy) In this current study jaw pain, locking, limitation of mouth opening, dislocation, and clicking were found 98%, 7.17%, 90.43%, 54.98%, and 75.7% respectively. In addition, etiological factors, noticed as psychological factors, inheritance, and prosthetic appliances were found 98%, 0.39%, 71.71% respectively, but none as a results of unknown trauma, orthodontic treatment, general anesthesia, or maxillofacial intervention. MRI of the TMJ can detect the abnormal changes within the disc, joint and other tissues. Disc displacement is the most common diagnosis of these patients.

Key Words: TMJ, MRI

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