

Magnetic Resonance Imaging in Assessment of the Effect of Displacements of the Articular Disc in the Formation of the Pain Syndrome in Dysfunction of the Temporomandibular Joint

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Abstract

The aim of the study was to determine, with the help of comparison between patient complaints and magnetic resonance imaging (MRI) findings of temporomandibular joint (TMJ), whether the reason of pain is displacement of articular disc. Dysfunction of TMJ combines various clinical conditions caused by internal disorders of TMJ, muscular disorders as well as biomechanical disorders of TMJ.

The most striking manifestation of the TMJ dysfunction are orofacial pain. The gold standard for diagnosis of TMJ dysfunction is MRI. Included in the study 150 patients with diagnosis of "TMJ dysfunction". In this study, were interpreted correlation between the presence of pain and the presence of any type of disc displacement, taking into account the pain sensation and disorders. According to the statistical analysis, there is weakly positive correlation between displacement of articular disc and pain sensation in the TMJ. We showed that articular disc displacement is not the immediate cause of pain.

Key words: Magnetic Resonance Imaging, Temporomandibular Joint, Pain, Dysfunction, Articular Disc Displacement.

References

1. *Bekreev V. V., Rabinovich S. A., Vasil'ev A. Yu. et al.* Complex treatment of patients with temporomandibular joint internal disorders. *Rossiyskiy meditsinskiy zhurnal*. 2013. No. 6. P. 37–40 (in Russian).
2. *Gus L. A., Arsenina O. I., Komolov I. S. et al.* Features of magnetic resonance tomography semiotics of temporomandibular joint in patients with distal occlusion in various clinical variants of temporomandibular joint dysfunction. *Meditinskaja vizualizaciya*. 2015. No. 4. P. 101–107 (in Russian).
3. *Silin A. V., Sinitsina T. M., Semeleva E. I. et al.* Particulars of the lateral pterygoid muscles morphology in patients with temporomandibular disorder on MRI. *Institut stomatologii*. 2015. No. 2. P. 44–46. (in Russian)
4. *Bae S., Park M., Han J. et al.* Correlation between pain and degenerative bony changes on cone-beam computerized tomography images of temporomandibular joints. *Maxillofac. Plast. Recon. Surg.* 2017. V. 39. No. 1. P. 19–25.
5. *Butts R., Dunning J., Perreault T. et al.* Patologoanatomical characteristics of temporomandibular dysfunction: Where do we stand? *J. Bodyw. Mov. Ther.* 2017. V. 21. No. 3. P. 534–540.
6. *Dias I. M., Cordeiro P. C., Devito K. L. et al.* Evaluation of temporomandibular joint disc dis-

- placements as a risk factor for osteoarthritis. *J. Oral. Maxillofac. Surg.* V. 45. P. 313–317.
7. *Fujiwara M., Honda K., Hasegae Y. et al.* Comparison of joint pain in patients diagnosed with and without articular disc displacement without reduction based on the reserch diagnostic criteria for temporomandibular disorders. *Oral. Maxillofac. Surg.* 2013. V. 116. No. 1. P. 9–15.
 8. *Hunter A., Kalathingal S.* Diagnostic imaging for temporomandibular disorders and orofacial pain. *Dent. Clin. N. Am.* 2013. V. 57. P. 405–418.
 9. *Manfredini D., Favero L., Cocilovo F. et al.* A comparison trial between three treatment modalities for the management of myofascial pain of jaw muscles: A preliminary study. *J. Cranio-mand. Sleep Pract.* 2017. V. 35. P. 1–5.
 10. *Mantelli Galhardo A. P., Baracat E. C., Leitte C. C. et al.* Characteristics related to TMJ arthralgia, visualized by magnetic resonanse imaging (3,0 T). *J. Prosthodont. Res.* 2013. V. 209. P. 1–6.
 11. *Kumar A., Brennan M. T.* Differential diagnosis of orofacial pain and temporomandibular disorders. *Dent. Clin. N. Am.* 2013. V. 57. P. 419–428.
 12. *Takahara N., Nakagawa S., Sumikura K. et al.* Association of temporomandibular joint pain accordingto magnetic resonance imaging findings in temporomandibular disorder patients. *J. Oral. Maxillofac. Surg.* 2017. V. 75. P. 1848–1855.
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