32nd Annual World Dentistry Summit

Aug 31-Sep 01, 2018 | Boston, USA

MRI-based determination of occlusal splint thickness for temporomandibular joint disk derangement: A randomized controlled clinical trial

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Objective: This the prospective study examined a method using magnetic resonance imaging (MRI) to assess the appropriate effective occlusal splint vertical thickness in the management of disk derangement.

Study Design: Patients were diagnosed as having internal disk displacement of the temporomandibular joint and were divided into 2 groups. Group, I (disk displacement with reduction) was subdivided randomly into 2 subgroups: subgroup IA (control group) comprising patients treated with 3-mm-thick splints; and subgroup IB (study group) comprising patients treated with MRI-based splint thickness. Group II (disk displacement without reduction) was subdivided randomly into 2 subgroups: subgroup IIA (control group) comprising patients treated with 3-mm-thick splints; and subgroup IIB (study group) comprising patients treated with MRI-based splint thickness. The primary outcome variables were maximum voluntary mouth opening and visual analog scale scores for pain. The secondary outcome variable was the joint sound. The final sample was composed of 162 patients (Group I = 90 and Group II = 72).

Results: Statistical analysis showed significant improvement of the clinical outcomes in subgroups IB and IIB compared with that in subgroups IA and IIA.

Conclusions: On the basis of MRI measurements and clinical outcome, the present study we recommend 4-mm and 6-mm vertical splint thickness for disk displacement with reduction and disk displacement without reduction, respectively, for 1 year.

Biography

Ayman Hegab is a Clinical Associate Professor of Oral & Maxillofacial Surgery, Faculty of Dental Medicine. Al-Azhar University, Cairo, Egypt. He has the privilege to design and introduce Tooth-Borne, Custom-Made Distraction Device for closure of the alveolar cleft which is approved by the American Journal of Oral and Maxillofacial surgery (Hegab Alveolar Distraction Device). Also, he has the privilege to design and introduces split acrylic splint for treatment of pediatric mandibular fracture which approved by the British Journal of Oral and Maxillofacial Surgery (Hegab Pediatric Mandibular Fracture Device). He has over 20 publication in peer-reviewed journals. He is one of AEEDC Young Researcher Award Participants for 2012 & 2013. He was speaker in many of the international conferences in USA, Qatar, and UAE

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