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## ABSTRACT

work were patients with the following features in the studied areas: no teeth in the posterior and lateral area, a history of trauma, previous orthognatodontic and surgical therapies, structural malformations, systemic diseases. To these basic criteria was added, for the dysfunctional group, the presence of a TMJ disorder. The dysfunctional pathology was diagnosed with the integrated RDC/TMD methodology and the dysfunctions encountered in groups Ia, Ila were considered. The data were subjected to Spearman and Pearson correlation analyses.

**RESULTS:** the only statistically significant finding was the reduction in the cranio-cervical angle (Pearson R 0.004), this data was significantly greater in the group with TDM.

**CONCLUSIONS:** our results seem to indicate modest correlation between Class II occlusion and abnormalities of the cervical spine. The analysis appears to be more consistent in the TMD group emphasizing the possibility that back rotation of the head on the neck might be related to joint dysfunction.

### **An innovative way to treat gnathologic disorders: progressive aligners with gnathologic attachments**

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**BACKGROUND:** Conservative treatment of temporomandibular joint disorders includes different approaches, such as occlusion treatment with gnathological splints.

During a gnathological treatment with splint, it cannot make dental displacements, while, with our attachment provided in the aligners, we can eliminate interference and precontacts presented in certain sectors.

The splints can be performed either to release or to reposition the mandible and have the purpose of removing or "bypassing" etiological occlusal factors, such as precontacts and interferences, which often cause, facilitate or maintain the articular pathology.

The advantage of this method is to find, at the end gnathological therapy, an occlusion with improved function and the elimination of precontacts that might lead to a relapse.

**METHODS:** The aim of our work was to project a series of progressive customized aligners, characterized by the addition of some accessories with gnathologic purposes. Actually, with the digital set up, it is possible to add attachments with several designs, complete clearance plans or repositioning plans. Such devices allow to a controlled, progressive treatment of the occlusal component in the disfunctional patient in a safe and an effective mode.

**RESULTS:** The "gnathological" attachments need to be produced and tested and further reaserch is needed on this topic. Anyway, a preliminary survey on patients afferring to the departments "ATM", Umberto I Policlinic, George Eastman Hospital, Rome, and "Oral Pathology", Department MESVA, University of L'Aquila, showed that patients seem more compliant, thanks to the possibility to align teeth while solving the temporomandibular joint disease and decreasing pain. In fact, the aligners are easily accepted by the patients, especially by

the adult ones who work in public, because they are much more wearable compared to the classic splints.

**CONCLUSIONS:** Further studies are needed on this topic. The attachments need to be produced and tested on a sufficient number of patients. Anyway, the aim of our study was to prove that it is possible to solve a temporomandibular problem, decreasing the pain, which is the most important matter to the patient, while aligning the teeth. That leads to a mayor satisfaction of the patient and thus to more compliance of the patient itself.

### **Efficacy and effect induced by functional orthodontic appliance in a cohort of patients with juvenile idiopathic arthritis with a temporomandibular joint involvement**

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**BACKGROUND:** Juvenile Idiopathic Arthritis (JIA) is one of the most common chronic diseases in childhood. In these patients, the temporomandibular joint (TMJ) involvement is a frequent, with a prevalence that varies between 38% and 72% depending on the JIA subtype, the diagnostic method used and the population studied. The aim of this study was to assess possible correlations between the clinical parameters of temporomandibular joint arthritis and pathologic MRI findings of the TMJ in patients affected by JIA, and the effect of a functional orthodontic therapy with a Class II activator.

**METHODS:** Fifty-three patients (41 girls and 12 boys, age ranging from 7 to 17 years) were selected for this study. Each patient had JIA based on the ILAR criteria with a median age of 5.5 years at disease onset and a median disease duration of 2 years. Clinical examination included facial evaluation and dynamic examination of the TMJ. A questionnaire was devised to evaluate the presence orofacial pain considering pain characteristics and location. Each patient with TMJ involvement was treated for 24 months with an Andresen activator, with a central screw and a vestibular arch. Magnetic resonance imaging included T1 (pre-treatment) and T2 (post-treatment) sequences in order to assess the TMJ involvement. **RESULTS:** In the sample selected for the study, only 15 patients (10 girls, 2 boys) showed TMJ involvement; 7 patients were affected by oligoarthritis JIA, 8 patients by a polyarthritis JIA. Among the 15 patients with TMJ involvement the pathologic findings observed were: bilateral TMJ click (25); bilateral functional limitation (12); monolateral TMJ click (7); monolateral chewing pain (7); monolateral chewing pain + monolateral TMJ click (7); bilateral chewing pain + monolateral functional limitation (7); bilateral functional limitation + monolateral click (7); monolateral swelling + bilateral click + deviation (6); bilateral functional limitation + deviation (7); bilateral chewing pain + functional limitation + deviation (7); deviation (7). Comparing pretreatment and post-treatment with Andresen activator for 24 months, clinical signs, a significant improvement of TMJ symptoms

was observed; TMJ pain, jaw deviation and mouth opening limitation were considerably improved in almost all patients. An improvement in facial profile with a reduced skeletal discrepancy and an increased function was observed, as the significant regression of orofacial pain.

**CONCLUSIONS:** The results of this study showed that a Class II activator could prevent severe problems of the TMJ in JIA patients with TMJ involvement. Moreover, an early treatment of patients with TMJ involvement with a Class II activator could prevent severe TMJ disorders caused by hypoplastic condyles and growth alterations of the mandible. Increasing of posterior vertical facial height and the consequent mandibular counterclockwise rotation can improve occlusion, masticatory function and facial profile. A regular clinical examination, together with progressive monitoring of the craniofacial development, in cooperation with paediatric rheumatologists, should be trained to early recognize TMJ disorders in patients affected by JIA.

### CDM therapy by fixed bite plate in dysfunctional adult patients

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**BACKGROUND:** we present 3 cases report of treatment of DCM in adult patient affected of II class 2 div.

**METHOD:** We select 3 adult patients affected by II class 2div with signs and symptoms of DCM ( i.e.pain at head and shoulders , at back, locking and clicking on opening and closing motion of mandible). we treated those patients by a mechanical of II class without extraction, and we introduce a fixed byte plate on lower arch for 8 months.

**RESULT:** At the end of treatment of malocclusion, we had a resolution of signs and symptoms of DCM and a cervical correction on position of column

**CONCLUSIONS:** the fixed byte plate on lower arch reduce the time of treatment and allows a stable correction of DCM in adult patients affected by II class malocclusion

### Statistical analysis of the distribution frequency of signs and symptoms in temporo-mandibular disorders

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**BACKGROUND:** Temporomandibular disorders (TMD) are a pathological condition affecting temporomandibular joint (TMJ), masticatory muscles and other structures involved in stomatognathic system. The symptomatic clinical manifestation of TMD is varied and complex. The aim of the study is to evaluate statistically the distribution frequency of main signs and symptoms of TMD analyzing a sample of affected patients.

**METHODS:** Between 2011 and 2014, at the UOSD Diagnosis, Prevention and Oral Hygiene with Day Hospital Medical-Surgical General and Special for vulnerable patients

of Polyclinic of Rome Tor Vergata, it was diagnosed TMD in 626 patients according to the guidelines of the American Academy of Orofacial Pain (2008). It was asked to each patient to compile a clinical folder where there were questions about medical history and the main symptoms experienced. The gnathological examination included: TMJ palpation; masticatory muscles palpation; examination of mandibular lateral deviation during opening and closing; evaluation of presence of open bite, deep bite, lack of teeth and molar dental class according to Angle classification. It was performed a statistical evaluation of collected data distinguishing the sample into two groups: female (F) and male (M).

**RESULTS:** The sample was composed of 471 females and 175 males with F/M ratio of 2,78:1. The average age for women was 37,4 years with a peak frequency between 40 and 50, while in men the average age was 39,1 years with a peak between 30 and 40. The symptoms were so distributed: TMJ pain 85,2%F and 73,7%M; joint sounds 78,4%F and 61,7%M; facial muscle tension 74,1%F and 52,6%M; headache 76,7%F and 56,1%M; difficulty finding exact mating between teeth 48,2%F and 54,8%M; bruxism/clenching 75,4%F and 52%M; cervical pain 78,8%F and 65,5%M; postural disorders 41%F and 32,4%M; ear pain 38,7%F and 34,9%M; sense of ear fullness 58,3%F and 51,4%M, dizziness 41,5%F and 35,3%M.

The frequency of muscle tenderness to palpation was so distributed: masseter 29,0%F and 59,3%M; temporal 30,8%F and 59,3%M; lateral pterygoid 56,1%F and 80,6%M; medial pterygoid 2,9%F and 69,2%M; mouth floor 0,6%F and 20,4%M; digastric 1,2%F and 23,8%M; sternocleidomastoid 3,4%F and 69,2%M; cervical 2,9%F and 25,0%M; trapezius 0,6%F and 23,1%M.

The mandibular lateral deviation during opening and closing was found in 55,4%F and 67,2%M.

Occlusal alteration were so distributed: deep bite 6,4%F and 19,3%M; open bite 1,7%F and 4,8%M; cross bite 9,3%F and 23,9%M; absence of molars 25,4%F and 60,5%M.

Dental molar classes were so distributed: right first molar class 54,3%F and 64,0%M; left first molar class 57,7%F and 62,3%M; right second molar class 34,9%F and 21,7%M; left second molar class 29,1%F and 21,7%M; right third molar class 10,9%F and 12,6%M; left third molar class 10,9%F and 14,3%M.

**CONCLUSIONS:** TMD symptomatology is varied and complex and it manifests differently in male and female. The most frequent symptoms are TMJ pain, joint sounds, facial muscle tension, para-functions such as bruxism and clenching and neck pain. The most common factor of TMD is tenderness to palpation of the external pterygoid muscle. Mandible lateral deviation during opening and closing is present in the majority of patients, while the presence of open bite, deep bite and cross bite and absence of molar teeth are found in a low percentage of patients. The first molar class is the most frequent.

### Severe obstructive sleep apnea therapy with oral appliances

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**BACKGROUND:** Obstructive Sleep Apnea Syndrome (OSAS) is a sleep-related breathing disorder characterized by