Why we should produce in-house aligners in our clinics?

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INTRODUCTION: The aim of this case report is to present the treatment of a patient with moderate crowding with in-house aligners.

CASE DESCRIPTION: A 21-year-old female patient with no medical history underwent orthodontic treatment 7 years ago. Mesocephalic face type, normal lower and upper lip position, Class I molar and canine relationship, has minimal crowding in the upper jaw and moderate crowding in the lower jaw. In-house aligner produced by indirect method was planned for the patient. Treatment planning was performed using clear aligner designer (3Shape) program. The models were produced using a 3D printer. In-house aligners were produced using 0.6 mm thickness and 120 mm diameter clear aligners by thermoforming device. Totally 11 aligners were changed every 10 days and the patient was instructed to use them at least 22 hours/day. A total of 2.5 mm interproximal reduction was performed in the mandibular arch. An additional 8 aligners are needed due to the incomplete correction of the rotation in #11. The treatment lasted 6 months.

DISCUSSION: Simple-to-moderate crowding can be treated effectively with in-house aligners. As with all aligners, in-house aligners are more difficult to correct rotations than fixed orthodontics mechanics. Therefore, additional aligners was needed.

CONCLUSION/CLINICAL SIGNIFICANCE: It is thought that, with the good planning and cooperation, clear aligner mechanics can be an alternative method to fixed orthodontic mechanics in patients with mild crowding.

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Orthopedic management of Class II with activator: cases' report

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INTRODUCTION: Skeletal Class II malocclusion is very often characterized by mandibular retrognathism. It can be treated effectively in growing patient using functional appliances. The best treatment results are obtained during active period of facial growth when skeletal, as well as dentoalveolar, changes occur.

CASE DESCRIPTION: These are two case reports of successful treatment of developing skeletal Class II malocclusion in two 9-year-old male patients in mixed dentition. Both patients presented with hyperdivergent skeletal Class II due to mandibular retrognathism. The treatment approach involved stimulating mandibular growth using a Class II activator combined with high-pull headgear. The post-treatment results showed significant improvement in the skeletal Class II relationship and the facial profile, with correction of the overjet.

DISCUSSION: Orthopedic treatment of skeletal Class II has long been controversial. The aim of this orthopedic phase is to correct the sagittal discrepancy by acting on growth. Various orthopedic devices are available, depending on the different therapeutic indications. The combination of an activator with a headgear is a common method used to correct hyperdivergent Class II malocclusion, improving skeletal and dental relationship, distal displacement of the maxilla, and controlling vertical eruption and upper molars distalization.

CONCLUSION/CLINICAL SIGNIFICANCE: The activator and high-pull headgear combination appliance is effective in treating Class II malocclusion in growing patients by a combination of skeletal and dentoalveolar changes.

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Facemask therapy with and without expansion: About clinical cases

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INTRODUCTION: Correction of skeletal class III malocclusion in growing patients is a challenge for orthodontists. Maxillary protraction with facemask is a common approach for treatment of a deficient maxilla and reverse overbite. This therapy can be associated with maxillary expansion. However, the latter is still controversial.

CASE DESCRIPTION: These are two case reports of successful treatment of developing skeletal class III malocclusion with facemask. The first patient of 7 years old benefited from maxillary protraction. The second patient of 11 years old presented maxillary transverse deficiency associated with the class III malocclusion. Thus, the treatment plan included maxillary protraction combined with palatal expansion. The post treatment results of both cases showed significant improvement in the facial profile as well as the Class III skeletal relationship with the correction of the overjet.

DISCUSSION: In the treatment of Class III malocclusions, maxillary expansion is frequently needed to increase the transverse width of the maxilla when the latter is deficient. Also, maxillary expansion alone has been believed to be beneficial. In fact, the maxilla might move slightly forward and downward. However, other studies showed that the results of protraction with or without expansion were similar. The current cases showed satisfactory results, in both patients, with and without expansion.

CONCLUSION/CLINICAL SIGNIFICANCE: Both treatment procedures were effective in the dental and skeletal therapy of the patients. The indication for maxillary expansion may have many benefits and must be personalized according to the clinical situation.

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Condyle-Disc Position on MRI After Sagittal Split osteotomy

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INTRODUCTION: Adult mandibular prognathia is treated with orthodontics and sagittal split ramus osteotomy (SSRO). Mandibular proximal segment stability in SSRO is important the prognosis Temporomandibular joint (TMJ) dysfunction. Therefore, magnetic resonance imaging (MRI) is gold standard. This case report, intraoral, extraoral and TMJ MRI results orthodontic and SSRO treatment of mandibular prognathia are presented.

CASE DESCRIPTION: Female patient (22 years old), student A. U. Faculty of Dentistry, complained about her face being long and having prominent lower jaw. There is asymmetric and flat profile, crowding dental arches, Class III molar-canine, anterior tet-a-tet relationship. He was asymptomatic in terms maximum mouth opening, amount lateral-protrusive movement, TMJ pain and sound during mouth open-close. Treatment goal was achieve facial aesthetics with dental class relationship.

Mandibular set-back with SSRO was planned treat negative overjet and prognathia inferior that occurred with decompensation during twelve-month orthodontic treatment. During surgery, proximal segment position was checked by ear canal examination for condyle displacement. TMJ was normal clinical examination and bilateral sagittal TMJ MRIs 45 days after surgery. 6-month postoperative orthodontic treatment was provide for interdigitation. End of the treatment, occlusion with aesthetic appearance and ideal maxillo-mandibular relationship was achieved.

DISCUSSION: Maintaining condylar position in SSRO is risky. In practice, method is check condyle by palpating external auditory canal during surgery. Risk of TMD is high as this is associated with clinical experience and skill. Postoperative TMJ MRI evaluation provides diagnostic accuracy.

CONCLUSION/CLINICAL SIGNIFICANCE: It has been determined MRI that subjective determination the condyle position during SSRO doesn't have negative contribution condyle and disc position.

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Congenital Myasthenia Gravis: A Case Report

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INTRODUCTION: Myasthenia Gravis (MG) is an auto-immune disorder of neuromuscular transmission affecting 15 out of 1.000.000 births which results in weakness and fatigue of skeletal muscles. The defect in neuromuscular transmission is mostly seen in the muscles of eyes, face, neck, shoulders and rarely in respiratory muscles. Anticholinesterase, corticosteroid and immunosuppressive agents are used as medications. Plasmapheresis and thymectomy are among treatment methods of MG. The aim of this study is to describe the general, skeletal and dental findings in a patient diagnosed with MG and to discuss orthodontic treatment approaches and relapse.

CASE DESCRIPTION: A 19-year-old female patient was presented to our clinic with complaints of dental crowding and difficulty in chewing. In the medical history, it was determined that she was diagnosed with congenital MG at the age of 1 year. Extraoral clinical examinations revealed partial bilateral ptosis and mild hyper-nasal speech with no other functional restrictions. In intraoral examination; anterior openbite, high arched and narrow palate, Angle Class II molar relationship, severe crowding in upper arch and 6mm mandibular dental midline shift were observed. Cephalometric analysis revealed skeletal Class I relationship with maxillary transversal discrepancy, vertical growth pattern and protrusion of upper/lower incisors.

DISCUSSION: The patient shows characteristic features of MG, especially in orofacial region. Dental treatments need to be planned carefully in patients with MG due to predisposing factors such as infections, stress, and medications. It should be taken into consideration that relapse may occur after orthodontic treatment due to muscle weakness.

CONCLUSION/CLINICAL SIGNIFICANCE: Treatment management in MG patients should include a multidisciplinary approach including surgical, radiological, genetic and neurological aspects. It is crucial for orthodontists to keep these patients under control for relapse after orthodontic treatment.

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Nemaline Myopathy Disorder: A Case Report

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INTRODUCTION: The aim of this case report is to present the medical and orthodontic aspects of a 9-year-old male patient with Nemaline myopathy which is the most common non-dystrophic myopathy.

CASE DESCRIPTION: Nemaline myopathy: Namaline-myopathy is congenital, often hereditary neuromuscular disorder affecting 1:50,000 live births. Symptoms include muscle weakness, in the face, neck flexors and proximal limbs muscles, leading to difficulty swallowing and breathing. Speech problems, scoliosis and delayed walking are common. Treatment is limited to supportive measures like breathing assistance and feeding tubes. A male patient with NM disorder was diagnosed as a 1-week-old baby and had bulbar muscle weakness, feeding only through feeding tubes improving after muscle exercises. He started walking later than usual and presented to our clinic at age 9.

Consistent with the anomaly clinical and radiographic examinations showed mouth breathing from nasal obstruction, axial hypotonia, dolichocephalic pattern, high angle growth, convex profile, incompetent lips, midface retrusion, high arched palate, skeletal Class II relationship associated with mandibular retrognathia and obtuse gonial angle. Patient has protruded upper incisors, retruded lower incisors, Angle Cl I molar relationship, anterior openbite, a 1.5mm left