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Poster Abstracts

P1

Review: Tissue engineering technology and its possible applications in treatment advanced disorders of temporomandibular joint

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Tissue engineering aims to create tissue-matched, prefabricated, prevascularized bone or soft-tissue composite grafts, it is a rapidly advancing discipline that combines the attributes of biochemical and biomaterial engineering with cell transplantation to create bioartificial tissues and organs. The reconstruction of temporomandibular joint (TMJ) defects by tissue engineering in hard and soft tissues is an ongoing challenge. Tissue engineering can necessitate the placement of alloplastic or autologous grafts to manage osteochondral defects. We review the technology of tissue engineering and its current and future applications within TMJ and discuss contemporary obstacles yet to be overcome.

P2

Traumatic mandibular condyle aplasia: A case report

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Aplasia of the mandibular condyle is a rare condition unless it's together with a syndrome that has characteristic signs such as mandibular condylar aplasia, developmental disorder of mandibula, and cranial bones. Condylar aplasia is a congenital or acquired malformation, which can be single or double-sided. The most common developmental defect is the absence of the condyle and articular fossa. Articular eminentia is rudimentary or absent. In addition to the skeletal changes, clinical signs and symptoms of aplasia of the mandibular condyle include a reduction in masticatory performance, muscle and joint pain during function, limited range of motion, and asymmetric facial appearance. In this case, unilateral condylar aplasia of a 64-year-old woman with a history of intestinal Ca who applies for dental complaints reported. The patient is diagnosed with traumatic mandibular condyle aplasia after clinical and radiographic examinations.

P3

Biostimulation of mandibular condyle growth: Review

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Skeletal Class II malocclusion has been called the common orthodontic problem in orthodontic clinics. These malocclusions are often due to mandibular deficiency. Various fixed and removable functional appliances have been used in patients who are undergoing a pubertal growth spurt for the treatment of skeletal Class II malocclusion. The results obtained from human and experimental animal studies showed that the functional treatment of skeletal Class II treatment enhances backward and upward growth potential of the mandibular condyle and this mechanism provides forward movement of the lower jaw. Many studies reported that the adaptive remodeling of condylar cartilage and glenoid fossa increase with the aid of mechanical forces sourced from the functional appliance. One of the most important factors in mandibular advancement is to provide the condylar cellular activity in a shorter treatment time. Duration of functional appliance therapy depends on several factors such as patient's age, sex, the severity of the skeletal problem and appliance type, and functional treatment period varies between 6 and 24 months. Patients undergoing orthodontic treatment often complain about the length of treatment time. In many studies, different techniques such as low-level laser, ultrasound stimulation, anabolic steroids, growth hormone, and cyclosporine have been used to reduce functional treatment time and stimulate the condylar cartilage and bone. The purpose of this review is to describe biostimulation of mandibular condyle growth and evaluate the various techniques for mandibular condyle biostimulation.

P4

Temporomandibular joint ankylosis and ramus fracture with cone beam computed tomography findings: A case report

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A variety of factors may cause temporomandibular joint (TMJ) ankylosis, such as trauma, systemic or local inflammatory conditions, neoplasms, and infection. The clinical features of the TMJ ankylosis are usually no

pain, limited mouth opening capacity, no joint sounds, and deflection to the affected side. A 60-year-old male patient was referred to our clinic with complained of mouth opening difficulty for about 40 years, facial asymmetry, pain and deflection. Axial, sagittal and coronal cone beam computed tomography (CBCT) images revealed severe cortical irregularities between the left mandibular condyle with temporal fossa and the fracture in the left mandibular ramus region. The purpose of this article was to report a case of unilateral TMJ ankylosis with left mandibular ramus fracture caused by trauma and to evaluate its CBCT imaging findings.

P5

Condylar fracture and degeneration of condyle: A case report

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We presented a case with the bilateral mandibular condyle fracture in this report. A 55-year-old female patient referred to our Faculty of Dentistry with chief complaints of mouth opening limitation, malocclusion and pain. We informed that the patient was treated in the Department of Plastic Surgery 10 years ago because of head trauma. Panoramic radiography and cone beam computed tomography (CBCT) images were evaluated. CBCT images revealed the fractures in some teeth and bilateral mandibular condyles. These fractures were overlooked in the former treatment in the department of plastic surgery. The patient was referred to maxillofacial surgery and orthodontia departments. We think that dental and medical doctor's consultations are very important and required in the patients with maxillofacial trauma.

P6

Osteochondroma of mandibular condyle: A case report

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Osteochondroma is one of the most common benign tumors of the skeleton. This tumor is usually seen in extremity bones. However, it is rarely seen in the maxillofacial area (%0.6). The most common sites of occurrence being the coronoid process of the mandible and the mandibular condyle and usually resulting in facial asymmetry, temporomandibular joint dysfunction. In this study, a patient with osteochondroma symptoms, the treatment, and follow-up results are presented. Surgical excision of the lesion was carried out successfully under general anesthesia. Asymmetry was resolved, and function was better at 2 months follow-up.

P7

The relationship between orthodontic treatment need and perceptions of aesthetic, chewing, and speech problems

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Temporomandibular joint (TMJ) disorders are generally associated with parafunctional problems. The prevalence of TMJ disorders is reported to show a major increase from 12 to 15 years of age. For this reason, we aimed to evaluate perceptions of aesthetic, chewing and speech problems in 12-15-year-old patients seeking orthodontic treatment, according to their treatment need levels. The study involved 183 patients (89 boys and 94 girls). Index of complexity, outcome and need (ICON) was used to determine patients' treatment need. Perceptions of aesthetic, chewing and speech problems were determined by Subjective Assessment Questionnaire. The chi-square test is used to compare the differences between sexes and treatment need levels. Of the participants, 47 patients (25.7%) had no treatment need, and 136 patients (74.3%) had definite treatment need according to ICON scores. There were not statistically significant differences between orthodontic treatment need of boys and girls when the sex distribution was considered. Similarly, no significant differences were found between boys' and girls' perception of esthetic, function, and speech problems. There were also not statistically significant differences between the distribution of esthetic, function, and speech problems, according to orthodontic treatment need levels. Although 12-15-year-old patients seek orthodontic treatment for aesthetic reasons, some of them may feel several chewing and speech problems. However, these conditions are not different according to sex and treatment need. When a patient is accepted for orthodontic treatment, the possible parafunctional problems of the individual must be taken into account as well as esthetic.

P8

Use of three-dimensional medical modeling for planning of temporomandibular joint ankylosis surgery

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Stereolithographic biomodeling allows three-dimensional (3D) computed tomography (CT) to be used to generate solid plastic replicas of anatomic structures. Reports in the literature suggest that such biomodels may have a use in maxillofacial surgery, craniofacial surgery, orthopedics, otology, and nasal research. In this case report, the usefulness of biomodeling in temporomandibular joint (TMJ) has been performed. Preoperative high-resolution (cutting slice thickness of 0.5 mm) 3D CT scan of the patients with TMJ ankylosis was obtained. Raw data obtained from CT scanning was processed with a Mimics Software (Materialize's Interactive Medical Image Control System, Belgium). Fabrication of 3D medical models was obtained through a process called powder depositional modeling by the use of a spectrum Z 3D Printer (Z Corporation, Burlington, MA). The relation between the temporal bone and the mandibular segment was evaluated on models. The 3D model of TMJ region can replicate the prototype of disease and play an important role in the diagnosis and simulation of surgical treatment of TMJ ankylosis.

P9

Clinical and radiological findings of bilateral coronoid hyperplasia case

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Coronoid hyperplasia (CH) is an infrequent condition that can be defined as an abnormal bony elongation of histologically normal bone. Progressive and painless difficulty in opening the mouth is main clinical findings of CH. In this case report, clinical and radiological findings of a 23-year-old male patient with bilateral CH was presented. Patient's panoramic radiography, temporomandibular Joint (TMJ) graph and cone beam computed tomography (CBCT) images were evaluated. In conclusion, conventional radiography can be used to detect CH, but sometimes this type of radiography can be insufficient for the detection of CH and to evaluate the relation between the coronoid process and zygomatic arch. When conventional radiography are not sufficient for diagnosis and evaluation of the CH, CBCT can be used.

P10

The treatment of excessive temporomandibular joint disorder: A case report

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The amount of normal mandibular opening is 35-50 mm. Two different movements occur while mouth spread: Rotation (0-25 mm) and translation (25-40 mm). In the present case, the treatment of excessive temporomandibular joint (TMJ) disorder combined with the low mouth spread was aimed. The patient was a 43-year-old female. There were no systemic diseases. The patient applied to the dental faculty because of arthralgia, especially while woke up, low mouth spread, click while eating, low quality of biting and grinding. 12mm of mouth spread was determined, and some of the treatment method (hot compress on m. masseter and m. temporal area, practices and therapeutics) was applied. The patient claimed that pain around the temporomandibular area was decreases, and 43 mm mouth spread was determined at weekly and monthly controls. Combine treatment such as hot compress on m. masseter and m. temporal area, practices and therapeutics are a success to treat excessive TMJ disorder.

P11

Temporomandibular joint ankylosis: A case report with cone-beam computed tomography

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Temporomandibular joint (TMJ) ankylosis is a pathological change with fibrous or bony tissue ankylosis with dysmorphism of the articular fossa and mandibular condyle. Degenerative changes, trauma or infection, were caused this type of deformity. A 59-year-old female patient was referred to our clinic for evaluation of facial asymmetry, mouth opening limitation and deviation. Coronal, sagittal and axial cone-beam computed tomography (CBCT) images were evaluated. Right TMJ had normal anatomical morphology but left TMJ with the loss of anatomical landmarks and presence of condylar hyperplasia were observed. Left TMJ ankylosis was diagnosed with CBCT images. The aim of this paper is to report a case of TMJ ankylosis and to evaluate its CBCT imaging findings.

P12

Bifid mandibular condyle: A case report with cone beam computed tomography

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The bifid mandibular condyle is a rare morphological alteration with no predilection for gender or age group. Its morphology varies from a shallow groove to two condylar heads and oriented mediolaterally or anteroposteriorly. The majority of prior articles informed their predominantly unilateral occurrence. This report describes a case of unilateral and mediolateral bifid condyle in a 23-year-old male patient with the main complaint of mouth-opening limitation and clicking. Cone-beam computed tomography images, and temporomandibular joint graph revealed unilateral right bifid condyle.

P13

Orthodontic management of idiopathic condylar resorption: Case report

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The aim of this study was to present the orthodontic management up to orthognathic surgery of 21-year and 10-month-old female patient with bilateral condylar resorption and complained from pain on right side temporomandibular joint area and limited mouth opening with intermittently for a long time. Clinical examination and diagnostic records (X-rays, photographs, mounting models and computed tomography [CT]) findings revealed the following:

- (1) Class I facial convexity, skeletal Class III (ANB = 0.1° and Wits appraisal = -4.3 mm) and dental Class III subdivision relationships;
- (2) +3.9 mm overjet and +1.2 mm overbite;
- (3) Dolichofacial morphology (mandibular plane to SN = 39°) with facial asymmetry;
- (4) Shifted mandibular dental midline and chin toward the right side when the mandibula moved from centric relation to centric occlusion;
- (5) Narrow maxilla and premature tooth contact on maxillary right second molar due to its supra-occlusion;
- (6) Severe erosion on the right condylar head, of which cortical bone seemed almost disappeared, and flattening and less erosion areas on left condylar head.

Main treatment modality included that primarily, to provide stable condyle position and to stimulate. The normal functional remodeling process on TMJ structure with splint therapy and then secondary, to build stabile occlusion and harmonic face with orthodontic and orthognathic surgery. The pain of TMJ and limited mouth opening had been eliminated in the second month of splint therapy. After 6 months, the cortical bone was observed on the bilaterally condyle heads initial resorption areas on CT, and stable condyle position was achieved the end of the splint therapy.

P14

Protraction facemask and fixed orthodontic treatment for a patient with temporomandibular joint disorder and Class III malocclusion

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In this case, treatment of a skeletal Class III malocclusion with temporomandibular joint (TMJ) disorder using grummons type facemask and fixed orthodontic appliances was to present. A 10-year and 8-month-old aged male patient was admitted to our clinic with a chief complaint

of pain and clicking at TMJ region and protrusive mandible. A concave profile and dental Class III anomalies were appeared at the examination of the patient. The left joint was found to be smaller according to the right at panoramic radiographs. The results of the analysis, the patient were seen to have skeletal Class III anomalies due to maxillary deficiency. It was decided to apply face mask therapy followed by fixed orthodontic treatment. Because of TMJ disorder, it was deemed appropriate to applied grummons type face mask with the fixed acrylic plaque, which got anchorage to frontal and zygomatic regions. Facemask with a 450 g force per side was applied for 9 months. Followed by fixed orthodontic treatment began to apply. After 9 months of the fixed treatment period, the patient's treatment was terminated. Class I dental relationship and convex profile was obtained and his complaint for TMJ disorder was ended.

