

# **ABSTRACTS**

## **OF LECTURES AND SCIENTIFIC POSTERS**

**EUROPEAN ORTHODONTIC SOCIETY**  
92nd Congress Stockholm, Sweden, 2016  
11-16 June

**AIMS:** To evaluate the degree of cure (%DC) of light-cured adhesives bonded to ceramic and stainless steel brackets.

**MATERIALS AND METHOD:** Thirty metallic and ceramic brackets (Forestadent) were bonded to adhesives Transbond XT (3M Unitek), Connect (GC), Enlight (Reliance) (n = 5) by firmly pressing the complex bracket/adhesive onto a cellulose strip on a background surface of standard reflectance (80%). The %DC of adhesives, which were irradiated from the incisal and cervical edges with a light emitting diode curing light (Radiplus) of 1.5 W/cm<sup>2</sup> output, was measured by micro-MIR FTIR and data were analysed with two-way ANOVA with bracket (metallic versus ceramic) and adhesive serving as discriminating variables (alpha = 0.05).

**RESULTS:** Ceramic brackets were associated with a higher %DC with the exception of Connect adhesive. %DC ranged from 48 per cent (Transbond XT-metallic bracket) to 73 per cent (Connect with ceramic or metallic bracket).

**CONCLUSION:** The interference of brackets seems to cause a 20 per cent reduction in the polymerization efficiency with the exception of one group of adhesive which does not contain a bonding agent (Connect) where the %DC remained unaffected.

## 225 EVALUATION OF POSITIONAL CHANGES OF THE MANDIBLE FOUND A SHORT TIME AFTER SAGITTAL SPLIT RAMUS OSTEOTOMY

Ryutaroh Imamura, Shinnichi Negishi, Katsuhiko Saitou, Ryuichi Imamura, Kazuki Kasai, Nihon University of Dentistry, Chiba, Japan

**AIMS:** Due to positional changes of the mandible a short time after sagittal split ramus osteotomy (SSRO), post-operative orthodontic treatment may be prolonged. The present study aimed to investigate the positional shift of the mandible and mandibular condyle a short time after SSRO.

**MATERIALS AND METHOD:** Cephalometric and axial cephalometric radiographs were obtained for 40 patients (16 males, 24 females, average age 26.8 ± 5.3 years) diagnosed with mandibular prognathism and treated by SSRO, pre-operatively and at 6 months post-operatively. All radiographs were obtained in the intercuspal position, and displacements of the jaw and ossicles were evaluated. Also, to examine positional changes of the mandible in 10 patients who had undergone SSRO (4 males, 6 females, average age 28.3 ± 3.5 years), a computed tomographic (CT) image and cephalometric radiograph were used. The shortest distance between the mandibular condyle and mandibular fossa was measured in three directions, i.e., in the frontal plane, sagittal plane and horizontal plane, and positional changes of the mandible were evaluated.

**RESULTS:** In 40 patients on whom cephalometric analysis was performed, positional and axial shifts of the mandibular condyle were observed. From the CT, in the frontal plane there was a displacement of 1.0 mm (-1.0 mm ~ 1.0 mm) outwards left, and 0.5 mm (-1.0 mm ~ 1.0 mm) outwards right. In the horizontal plane, there was a displacement of 1.0 mm (-1.0 mm ~ 1.5 mm) outwards left, and 0.5mm (-1.0 mm ~ 1.5 mm) outwards right. In the sagittal plane, there was a displacement of 1.0 mm (0.5 mm ~ 1.0 mm) forwards. In four of the 10 cases evaluated, no changes in the ossicles or mandibular condyle were seen. In four other cases, a displacement of the mandibular condyle was observed, and in two subjects, displacements of both ossicles and the mandibular condyle were observed.

**CONCLUSION:** In a short period of time following SSRO, there is no positional shift of the distal and proximal ossicles, but a displacement of the mandible is seen. This is due to positional change of the mandibular condyle.

## 226 IS THERE AN ASSOCIATION BETWEEN TOOTH DELAY AND ODONTOMA? A RETROSPECTIVE STUDY DURING THE PERIOD 1995-2015

Gaetano Isola<sup>1</sup>, Giovanni Matarese<sup>1</sup>, Andrea Crupi<sup>1</sup>, Claudio Cosio<sup>1</sup>, Luca Ramaglia<sup>2</sup>, <sup>1</sup>Department of Biomedical, Odontostomatological Sciences and Morphological and Functional Images, University of Messina and <sup>2</sup>Department of Neurosciences, Reproductive and Odontostomatological Sciences, School of Medicine, University of Naples "Federico II", Italy

**AIMS:** Odontoma are considered to be the most common odontogenic tumour of the oral cavity. The exact aetiology of odontomes is still not known. Most odontomes are asymptomatic and are

discovered during routine radiographic investigations and can cause disturbances in the eruption of the teeth, most commonly delayed eruption or deflection.

**MATERIALS AND METHOD:** By a retrospective study design, demographic and clinical data regarding patients that presented odontomas from 1995 to 2015 were obtained and the influence of active therapy on the dentition and on the treatment of impacted teeth was analyzed. In order to compare the examined groups with reference to numerical variables, the Kruskal Wallis test was applied. For the only variables that resulted in statistical significance, two-by-two comparisons were performed applying the Mann Whitney test. The Spearman correlation test was used in order to assess the existence of any significant interdependence between the presence of odontoma versus the presence of tooth structured material.

**RESULTS:** Forty five patients (mean age 14.2 years) with 19 complex and 26 compound odontomes were included. Initial symptoms were delayed eruption of permanent teeth ( $n = 25$ ), pain ( $n = 6$ ), swellings ( $n = 4$ ), and no symptoms ( $n = 10$ ). Thirty one cases were discovered by incidence, all of them via panoramic radiographs. The mandible/maxilla ratio was about 2:1 (31/15). Thirty-two out of 45 odontomas were in close proximity to at least one tooth ( $n = 21$  in the incisal region). A total of 12 teeth were extracted (complex:  $n = 8$ ; compound:  $n = 4$ ). Of the non-extracted teeth, 33 were displaced and retained. Of those, 29 teeth were aligned through an orthodontic-surgical approach and four teeth erupted spontaneously after surgery during the follow-up period.

**CONCLUSION:** Early detection of an odontoma is more likely an accidental radiological finding, hence the need for routine radiographic analysis should be emphasized. Early diagnosis of odontomas in the primary dentition is crucial in order to prevent later complications, such as impaction or failure of eruption of teeth.

## 227 EFFECTS OF SPECIFIC ORTHODONTIC TREATMENT MECHANICS ON DENTAL ARCH FORM

Nikoleta Ivanova<sup>1</sup>, Miroslava Dinkova<sup>2</sup>, <sup>1</sup>MMD Dental Center of Orthodontics, Sofia and <sup>2</sup>Department of Orthodontics, Faculty of Dental Medicine, Medical University of Sofia, Bulgaria

**AIMS:** To determine the effects of Myobrace System™ appliances on dental arch form.

**SUBJECTS AND METHOD:** Thirty one patients (7 to 13 years) who received Myobrace™ treatment in the period from 2008 to 2015. As a first treatment step, a soft trainer for children was used, and if necessary, as a second step, a trainer was used. A protocol for wearing the appliance (10-12 hours daily) was established. At every treatment stage photographic documentation, diagnostic radiology (panoramic radiograph and lateral cephalogram) and plaster models were made. For monitoring the effects of the Myobrace™ on the dental arch form, 124 plaster models were evaluated, demonstrating the beginning and end of treatment of all 31 patients. The dental arch form was differentiated as oval, tapered and square. Such formed stainless steel arches (0.016 × 0.022") for the upper and lower jaw in three sizes (small, medium and large) were used for evaluation. The incisal edges of the anterior teeth and most prominent surfaces of the buccal cusps of the posterior teeth were marked to form a discontinuous occlusal contour. Every arch form (oval, tapered, square) was superimposed over every plaster model. The arch form with the most common points with the occlusal contour was selected. The evaluation was done by two different operators. Due to discrepancies in the results in two cases a third operator was included. The obtained results were statistically processed.

**RESULTS:** In 83.9 per cent of cases the dental arch form was changed. The oval arch form was maintained in 75 per cent and changed to square in 25 per cent. The square arch form was maintained in 25 per cent and changed to oval in 75 per cent. No change from oval and square to tapered form was observed. The tapered form was changed in 95.6 per cent. In 84.1 per cent the tapered form was reshaped to oval, and in 15.9 per cent to square. In 79 per cent the dental arch form was maintained (9.7%) or changed to oval (69.3%).

**CONCLUSION:** The Myobrace System™ balances the muscles, stimulates the development of the dental arches and thus the teeth have a tendency for a better position and alignment.

## 228 FUNCTIONAL ANALYSIS OF PARATHYROID HORMONE 1 RECEPTOR MUTANTS FOUND IN PRIMARY FAILURE OF TOOTH ERUPTION

Eri Izumida, Yoichi Miyamoto, Tetsutaro Yamaguchi, Koutoro Maki, Ryutaro Kamijo, Showa University, Tokyo, Japan