# Abstracts

### CP5-71 SKELETAL CLASS III SURGICAL AND ORTHODONTIC TREATMENT: A CASE REPORT

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AIM: To determine if adult patients with skeletal Class III malocclusions are satisfied with the results of combined surgical-orthodontic treatment.
SUBJECT AND METHOD: One patient, a female, aged 21 years, with mandibular prognathism, asymmetry, sagittal maxillary deficiency, and hyperdivergency will be presented. The following pre-treatment records were obtained: panoramic and cephalometric radiographs (lateral and postero-anterior), dental casts, and extra- and intraoral photographs to assess facial harmony. The power centric registration method advocated by Roth was used to take centric relation bite registration, diagnostic models were mounted and analyzed with articulator and condylar position indicator. The patient was prepared orthodontically for 14 months and then underwent a surgical approach including: a Le Fort I osteotomy with advancement; bilateral sagittal split osteotomies of the mandible for correction of asymmetry with setback; rhinoplasty and an osteotomy of the chin.
RESULTS: Evaluation of the results six months post-surgery showed that improvements in the facial features were achieved and clearly noticeable. The changes were correlated with cephalometric analysis. Moreover the patient showed psychological improvements.
CONCLUSION: The patient was satisfied with the treatment results.

### CP5-72 NON-EXTRACTION TREATMENT IN DENTAL CLASS II SUBJECTS WITH HILGERS' PENDULUM

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AIM. Treatment of dental Class II subjects can be efficiently realized without premolar extractions. Early treatment of these patients using a distalizing approach, results in a perfect Class I molar and canine relationship. A number of patients with a dental Class II relationship have been treated using the Hilgers' Pendulum distalizing appliance.
MATERIALS AND METHOD: The Pendulum appliance is formed by a palatal plate similar to a Nance button, that represents the primary resistance point of the appliance; other components are the resistance arms bonded bilaterally to the occlusal surfaces of the first and second premolars, and the removable active springs that lie in the palatal resin button. The removable and active springs are engaged into lingual sheaths soldered on the palatal surfaces of the first, or less frequently, second molar bands and represent the active portion of the appliance. For all treated subjects a one-step activation system was used. The patients attended monthly until a super Class I (a slightly molar Class III) molar relationship was achieved, permitting the premolars to spontaneously drift distally to correct the dental relationships.
RESULTS: Optimal intercuspation was achieved for all patients; treatment was faster in subjects without erupted second molars, and the mean treatment duration was approximately 28 months.
CONCLUSIONS: Distalization of molars can permit non-extraction treatment. The Pendulum appliance offers an effective, versatile and non-compliant system.

### CP5-73 RHINOMANOMETRIC EVALUATIONS AFTER RAPID PALATAL EXPANSION

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AIM: To assess the effect of rapid maxillary expansion (RME) on nasal airway resistance.
SUBJECTS AND METHOD: Ten patients (3 males, 7 females) age range 6-14 years, undergoing RME for correction of palatal contraction combined with oral or mixed breathing. The investigation was carried out before orthodontic therapy and at the end of orthodontic treatment, which lasted approximately 6-12 months. The change due to RME in the upper arch was assessed by active anterior rhinomanometry, which measures respiratory flow and posterior pressure using a small tube introduced into the 'non-breathing' nostril. A rhinomanometer (RYNO 2000, Menfis Biomedica) was employed.
RESULTS: Ten patients showed a significant functional improvement in flow, pressure and resistance index after RME treatment.

### CP5-74 MASTICATORY MUSCLE ACTIVITY IN PATIENTS BEFORE ORTHOGNATHIC SURGERY

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AIM: Evaluation of the left and right masseter and anterior temporal muscle activity in subjects before orthognathic surgery.
SUBJECTS AND METHOD: Fifteen patients requiring orthognathic treatment and 15 adult dental students with a 'perfect' occlusion. All subjects underwent an instrumental examination with a Freely electromyograph, using four of the eight channels. Muscular waveforms were also analysed computing a percentage overlapping coefficient (POC; an index of the symmetric distribution of the muscular activity determined by the occlusion) and a torque coefficient (TORS; to estimate the possible presence of mandibular torquing). Electromyographic values for the two groups were compared by a paired Student's *t*-test.
RESULTS: There was a statistically significant difference in the symmetrical distribution of muscle activity (masseter and temporalis anterior muscles POC, $P < 0.05$) and in mandibular torquing (TORS, $P < 0.05$).
CONCLUSIONS: Electromyographic evaluation allows the quantification of occlusal impact on masticatory muscle activity. Compared with a normal population, subjects with a significant malocclusion have an altered neuromuscular equilibrium.

### CP5-75 MULTIDISCIPLINARY TREATMENT OF TOOTH TRANSPOSITION – A CASE REPORT

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INTRODUCTION: A 9-year-old patient with partial impaction of 21. Occlusally the relationship was Angle Class I with a slightly increased overjet and overbite. Radiographic examination showed partial impaction of 21 and displacement of the upper left canine. The tooth bud of 23 was located mesial to 22. There was a maxillomandibular arch length discrepancy with mesial migration of all first molars, a dental midline discrepancy to left side in both arches and dental protrusion of all upper incisors.
TREATMENT PLAN: The patient was treated with removable appliances for expansion of the upper and lower arch. At the same time a low-pull headgear for distalization and rotation of first upper molars was worn. To move 21 into the arch, a small button was bonded on the tooth and the patient was instructed to wear elastics. As tooth 23 was erupted mesial to 22, it was decided to accept this displacement and to maintain the position of 23 in place of the lateral incisor. With fixed appliance (utility arch) 22 could be distalized and space opened for 23. Using full fixed appliances 23 could be brought into the arch. After debonding, a positioner for settling and an activator for retention were incorporated.
RESULTS: At the end of treatment the patient showed a Class I occlusion with transposition of 22 and 23. To improve aesthetics the left canine and lateral incisor were shaped and remodelled with composite restorations.
CONCLUSION: Without any extensive tooth movement and with an interdisciplinary treatment approach, a good aesthetic result was achieved accepting transposition of teeth 22 and 23.

### CP5-76 SURGICAL, ORTHODONTIC, AND PROSTHODONTIC REHABILITATION OF A PATIENT WITH FOLLICULAR AMELOBLASTOMA

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AIM: This case report presents the combined surgical, orthodontic and prosthodontic rehabilitation of a patient presenting a tumour in the posterior right mandibular region, of non-dental origin.
SUBJECT AND METHOD: A 31-year-old female patient referred for orthodontic treatment following partial mandibular resection and immediate reconstruction using calvarial bone grafts. Prior to this surgery she presented with a tumour, which was histologically classified as follicular ameloblastoma. She had a Class I malocclusion with moderate crowding in the anterior regions of both dental arches, a labially positioned lower right canine, a mild deviation of the lower dental arch midline to the right, and an edentulous space due to the absence of 44, 45 and 46. Orthodontic treatment aimed to correct the position of the right canine, to alleviate the dental crowding in both arches, and to preserve an adequate space for placement of two dental implants. The exact position of the two implants was decided according to the orthodontic treatment plan and they were placed prior to this treatment.
RESULT: Active orthodontic treatment was carried out in 11 months using fixed appliances in both dental arches, and followed by prosthodontic rehabilitation of the right lower dental arch region.
CONCLUSION: Orthodontic treatment was able to provide the appropriate space for prosthodontic rehabilitation and optimum occlusal relationships.

### CP5-77 POST-OPERATIVE TINNITUS – AN UNUSUAL COMPLICATION AFTER SURGICAL CLASS III TREATMENT

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AIM: Patients with severe mandibular prognathism frequently require orthognathic surgery. In this context a mandibular ramus bilateral sagittal split osteotomy (BSSO) has become a routine procedure. Well-known complications associated with this procedure are, at present, infections, osteomyelitis, nerve injury, haemorrhage, non-union at the site of the osteotomy, bending or fracture of osteosynthesis material, bad split and unfavourable fracture of the mandible. Knowledge of the potential risks is essential. The aim of this report is to present a patient who developed tinnitus on the left hand side as a post-surgical sequela.

# SURGICAL, ORTHODONTIC, PROSTHODONTIC REHABILITATION OF A PATIENT WITH FOLLICULAR AMELOBLASTOMA

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**Abstract:**

This case report presents the combined surgical, orthodontic and prosthodontic rehabilitation of an adult female patient presenting an odontogenic tumor in the posterior right mandibular region.

**Medical History:**

Patient's medical history was clear.

**Dental History:**

A tumor, diagnosed as follicular ameloblastoma in the right mandibular region at the site of 44,45 and 46 that was removed along with the three teeth. The region was reconstructed using calvarial bone graft.

**Extraoral Examination:**

Orthognathic profile with facial symmetry and with the lips competent at rest.

**Intraoral Examination:**

Class I malocclusion characterized by 3mm overjet, 3mm overbite, moderate crowding in the anterior region of both dental arches, a labially positioned right lower canine, lower dental midline deviation 2mm to the right, an edentulous area due to the absence of 44,45,46. Some dental restorations on molar and premolar teeth and good oral hygiene.

**Radiographic assessment :**

Evaluation of the panoramic x-ray indicated good bone healing and formation at the site of operation.

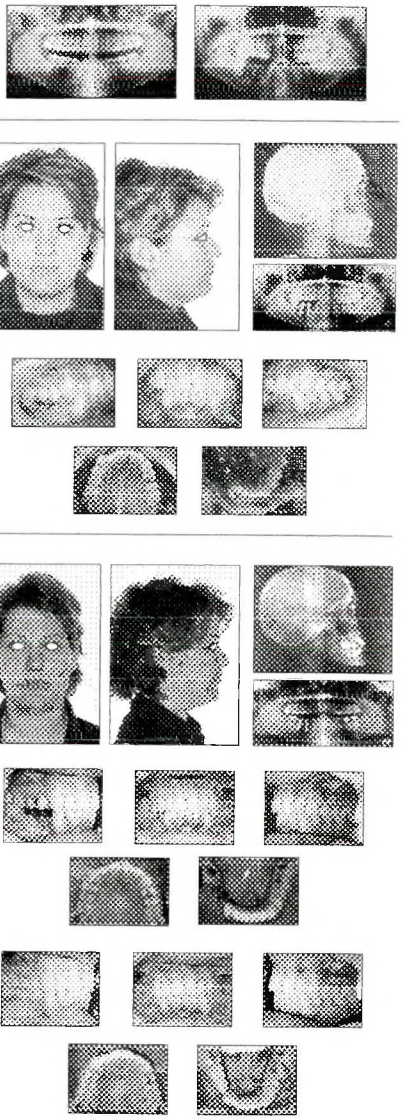
Cephalometric analysis indicated normal vertical and sagittal skeletal relationships. (SNA:83, SNB:80, Facial angle:90, ANB:3, individual ANB: 3,5)

**Treatment Plan:**

Orthodontic treatment aimed to correct the position of the right canine, to alleviate the dental crowding in both arches, and to preserve an adequate space for placement of two dental implants. The exact position of the two implants was decided according to the orthodontic treatment plan and they were placed prior to this treatment.

**Management:**

Active orthodontic treatment was made by means of fixed appliances in both dental arches, had a duration of 11 months and it was followed by prosthodontic rehabilitation of the right lower dental arch region.



**Conclusion:**

Orthodontic treatment provided the appropriate space for prosthodontic rehabilitation and optimum occlusal relationships.

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