

below 30% had an increase to more than 30% post-operatively which was considered to be indicative of hypernasality.

**Conclusion:** Advancement of the cleft maxilla can result in either increases or decreases in nasalance in the early post-operative period for both surgical methods. The study illustrates individual differences in compensation to structural changes, as well as the need for longer-term follow-up, as planned in our study.

#### O.133 Transverse distraction osteogenesis of the maxilla and mandible using modified hyrax appliances

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**Introduction and Objectives:** Modified Hyrax appliances used for treating transverse deficiencies of the maxilla and the mandible are presented. The surgical technique, clinical indications and results are discussed.

**Material and Methods:** Between 1995 and 2005, we have operated on 26 adult patients with maxillary transverse discrepancies using the method described by Glassman et al. In 20 cases a conventional Hyrax device (tooth-borne) was used. In 6 cases, with poor periodontic condition or absence of tooth anchorage, a bone-borne or combined device was employed. Another two patients with transverse deficiency of the mandible were treated with a midline osteotomy and a modified teeth-borne device. All the patients received preoperatively (T1), at the end of distraction (T2), at removal of the expansion device (T3) and 12 months after surgery (T4) lateral and posterior anterior cephalograms and study models to measure the width of the anterior and posterior dental arches with a digital sliding calliper.

**Results:** Eighteen patients were female and 10 male. Mean age was 30.6 years, range 17.2–44.2 years. A significant widening of the anterior ( $6.2 \pm 1.7$  mm) and posterior ( $7.4 \pm 1.6$  mm) dental arches was demonstrated. No significant differences were found when comparing the T3 with T4 measures. No significant complications were found.

**Conclusion:** The results indicated that maxillary expansion in adults was predictable and stable without significant complications such as: loss of anchorage, skeletal relapse during and after the expansion period, cortical fenestration and buccal root resorption.

#### O.134 Modified surgical technique of transpalatal distraction

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**Introduction and Objectives:** Transpalatal distraction (TPD) is a well-proven method in correcting transversal maxillary discrepancies and tooth crowding. The transpalatal distractor is fixed to a slot-plate, which is placed under the palatal mucosa through a T-shaped transmucosal incision. This incision is placed at the same level, where the plates are positioned. In case of extremely narrow palatal vaults, it is very tedious to place the slot-plates into their proper position due to lack of space and thick mucosa. A new surgical technique was developed to help avoiding this drawback.

**Material and Methods:** After the osteotomies, the palatal incision runs along the marginal gingival from the canines to the second molars on both sides. A mucoperiosteal flap is elevated, giving direct access to the bony surface of the palate. After fixing

the plates, the flaps are sutured back with interdental sutures. The palatal mucosa is then incised with an electric knife above the slot-plates.

**Results:** This modified operative technique was performed without any difficulties and post-operative complications on 6 patients under general anaesthesia in Budapest, Hungary. Four patients have undergone successful post-operative orthodontic treatment, 2 patients are still in the active phase of distraction.

**Conclusions:** This small modification helps in placing the slot-plates in extremely narrow palatal vaults. This technique results in a direct view to the bony surface and easier manipulation of the slot-plates. It also enables the surgeons to visualize the root contours and to avoid any damage to the teeth.

#### O.135 Age-dependent results and complications of transpalatal distraction?

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**Introduction:** Today transpalatal distraction (TPD) is a standard treatment of maxillary deficiencies. The technique seems to be superior to conventional rapid-palatal-expansion (c.RPE) and surgically assisted-rapid-palatal-expansion (c.SA-RPE) because dental/periodontal complications and relapses can be avoided. Age-related indications for c.RPE/c.SA-RPE are well known. In contrast age-related recommendations for palatal and pterygomaxillary-disjunctions in TPD are missing yet.

**Material/methods:** Thirty five patients (8–36 years, mean-age 16.5 years) with maxillary deficiencies/buccal cross-bites were treated from 2003–2005. Four patients (8 years) were treated without disjunctions. In one third of the other patients (14–17 years) osteotomies of the anterolateral-maxillary aspects were carried out. The next third (ages 15–22) had received additional paramedian-palatal transections. Complete paramedian-palatal and pterygo-maxillary disjunctions were carried out in the last third. Distraction-length varied from 4.6–21 mm (mean 8.7 mm). Pre-/post-operative rhinomanometric observations were performed in addition.

**Results:** In 32 patients minor complications only were encountered. In one patient (8 years) further therapy was refused after 5 days of distraction. In a second case (15 years) without primary bone disjunction surgical assistance was necessary when fixation plates broke out following activation. In a 36-year old patient secondary palatal and pterygo-maxillary disjunction had to be carried out. In all other patients neither device dependent nor clinical complications were seen. Up to now dental/periodontal complications were noted in 2 cases following orthodontic treatment. Rhinomanometric observations have revealed a decrease in nasal obstruction.

**Summary:** TPD seems to be the method of choice for RPE/SA-RPE. Even in young patients anterolateral-maxillary disjunctions should be carried out in patients older than 13 years. Additional palatal-transections seem to be necessary with 17 years of age or more. Complete palatal-and pterygomaxillary-disjunctions are recommended with 22 years or older.