REVIEW & ABSTRACTS

Segmental alveolar distraction for the correction of unilateral open-bite caused by multiple ankylosed teeth: A case report

Ankylosed teeth fail to erupt to meet their counterparts in the opposite jaw. In cases where ankylosis occurs in multiple teeth, the occlusion shows an open bite. This article describes a case of unilateral open bite caused by multiple ankylosed teeth, where treatment involved segmental alveolar bone distraction. A 25-year-old female patient presented with a left-sided unilateral open bite. On the left-hand side, only the lower incisors were not ankylosed. On the right, the maxillary first molar was ankylosed. All these ankylosed teeth were positioned below the occlusal plane.

Her mother and brother also had multiple ankylosed teeth, and a familial cause was considered. Orthodontic tooth movement was considered impossible and segmental osteotomy on the left maxillary alveolar bone and downward bone distraction were performed as an alternative. A distractor consisting of orthodontic bands, wires and screws was devised and worn in the left mandibular appliance. Multi-bracket orthodontic appliances were also used for distraction. The amount of vertical movement was 7 mm at the premolar region. Five months after distraction, the multibracket appliance was removed, and fixed and removable retainers were placed. Eight months after distraction, prosthetic restorations on the occlusal surfaces of the ankylosed teeth were made to obtain the final occlusion.

The unilateral open bite was successfully treated and a good occlusion was obtained. The occlusion has shown good long-term stability for more than 3 years.

Comparison of 10 digital SLR cameras for orthodontic photography

Digital photography is now widely used to document orthodontic patients. High quality intra-oral photography depends on a satisfactory ‘depth of field’ focus and good illumination. Automatic ‘through the lens’ (TTL) metering is ideal to achieve both the above aims. Ten current digital single lens reflex (SLR) cameras were tested for use in intra- and extra-oral photography as used in orthodontics. The manufacturers' recommended macro-lens and macro-flash were used with each camera. Handling characteristics, colour-reproducibility, quality of the viewfinder and flash recharge time were investigated. No camera took acceptable images in factory default setting or ‘automatic’ mode: this mode was not present for some cameras (Nikon, Fujifilm); led to overexposure (Olympus) or poor depth of field (Canon, Konica-Minolta, Pentax), particularly for intra-oral views. Once adjusted, only Olympus cameras were able to take intra- and extra-oral photographs without the need to change settings, and were therefore the easiest to use.

All other cameras needed adjustments of aperture (Canon, Konica-Minolta, Pentax), or aperture and flash (Fujifilm, Nikon), making the latter the most complex to use. However, all cameras produced high quality intra- and extra-oral images, once appropriately adjusted. The resolution of the images is more than satisfactory for all cameras. There were significant differences relating to the quality of colour reproduction, size and brightness of the viewfinders. The Nikon D100 and Fujifilm S 3 Pro consistently scored best for colour fidelity. Pentax and Konica-Minolta had the largest and brightest viewfinders.

The Dynamax System: A new orthopaedic appliance and case report

The Dynamax appliance is a treatment modality for the correction of the Skeletal II malocclusion characterized by a mandibular retrusion. Progressive mandibular advancement, maxillary expansion, control of maxillary growth, incisor torque and control of vertical facial development are incorporated into a two-part appliance. The design facilitates laboratory construction, clinical handling and patient acceptability.

A prefabricated spring module forms the basis of the appliance, allowing both maxillary expansion and mandibular advancement. An easily adjustable progressive forward position of the lower jaw makes a construction bite unnecessary.

The spring module provides most of the structure of the appliance so that minimal acrylic is required and the
appliance is fully contained within the freeway space. Contact between the upper and lower parts of the appliance occurs posteriorly in the lingual sulcus. Here the depth permits an extended vertical contact, to maintain a protrusive mandibular position throughout the range of mandibular opening, including during sleep. The lower portion of the appliance may be fixed or removable and multibracket treatment can be carried out in one or both arches at the same time as the orthopaedics.

**Cephalometric correction factors for bite opening—a dry skull study**
Emily Lam, Andrew N. Quick and Peter Herbison, The European Journal of Orthodontics 2006 28(4):378-382

The lateral cephalometric radiograph supplies the clinician with valuable information regarding the facial skeletal morphology of the patient, provided that it is taken correctly. These radiographs should be taken while the patient is occluding in maximum intercuspation, failing which the exposure is often repeated, leading to an increase in patient radiation dose as well as added cost in time and materials. This study investigated the relationship between limited bite opening and selected cephalometric variables. Thirty-one dry skulls were used and five splints were constructed for each skull giving increments of bite opening from 0 to 5 mm. Six lateral radiographs per skull were taken at each increment of bite opening. The radiographs were traced and the points plotted using a reflex metrograph.

A linear relationship was found between bite opening and SNB, ANB, SN-mandibular plane, and SN- Y-axis angles.

Errors in digitization, superimposition, and landmark identification were determined and found to be acceptable. Regression analysis produced a highly significant \( P<0.001 \) gradient for each of these angular relationships, allowing a set of correction factors to be produced, which can be applied to bite openings up to 5 mm.

**Post-treatment development of the curve of Spee**

Department of Orthodontics, Academic Centre for Dentistry, Amsterdam, The Netherlands

The aim of this study was to investigate the post-treatment development of the curve of Spee (CS) and to predict its post-treatment stability on the basis of cephalometric parameters. Lateral cephalograms and study models of 135 subjects (50 males and 85 females) were taken before orthodontic treatment (T1; 12.0 ± 1.5 years), at the end of orthodontic treatment (T2; 14.6 ± 1.5 years), and at least 3 years out of retention (T3; 26.6 ± 5.0 years); the curve depth (CD), location of the deepest point (LDP) of the curve, and eight cephalometric parameters were assessed. The sample was divided into a treated and an untreated lower arch group. The upper arch was treated in all patients. The sample consisted of 25 per cent Class I, 73 per cent Class II, and 2 per cent Class-III-treated malocclusions.

The results showed that the post-treatment CD was frequently unstable and unexpected changes were relatively common. The LDP was displaced distally during T1-T2 and showed mesial relocation during T2-T3. Assessment of potential predictors of the post-treatment changes in CD and LDP using stepwise regression analysis showed that a deep curve at T2 was associated with a decrease of the CD during T2-T3. A combination of distal location of the LDP with proclination of the lower incisors at T2 and extraction treatment was associated with mesial relocation of the LDP during T2-T3. The results also suggest that an optimal CD of about 2.0 mm at T2 was associated with the least amount of post-treatment change.