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CHURCHILL LIVINGSTONE

Tuesday, 12 September 2006, 14.30–15.40 Hall 8

Orthognatic surgery: mandible I

O.143 Mandibular condyles position evaluation in patients undergoing orthognatic surgery

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Aim: To develop general principles of complex treatment planning and treatment of patients with inherent jaw deformities and to evaluate temporomandibular joint function.
Method: Complex examination, treatment planning, surgery and rehabilitation of 51 patients aged from 16 to 45 with Class III malocclusion due to mandibular excess and Class II malocclusion due to mandibular deficiency was made using standard methods, axiography and magnetic resonance imaging of the temporomandibular joint.
Results: The most complicated changes in temporomandibular joint (TMJ) were revealed in patients with Class II malocclusion: ventral articular disk dislocation, intraarticular fluid volume increase, bilaminar zone fibrosis and joint hypermobility. Cast surgery with casts in articulator was made based on the data gained in the initial examination. Maxilla was moved in three planes of space and temporary splint was made.
In 16 patients surgery was performed on the maxilla and 35 patients were operated bimaxillary. In 12 patients maxillar and midpalate osteotomy was made following by distraction for maxillary expansion. Mandibular surgery consisted of sagittal ramus split osteotomy. On the maxilla sliding stepped Le Fort I osteotomy was performed. After surgery all patients had there orthodontic treatment completed to achieve the maximal intercuspation.
Conclusions: Patient and dentist interrelation is mandatory on every stage of orthognatic treatment. Examination and treatment of patients with jaw deformities has to be made according to the algorithm based on the achievement of the stable aesthetic and functional results.

O.144 Controlled lower border split of mandibular body – Modification of BSSO

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Aim: The aim of this study is to present our experience and modifications of a commonly used method such as BSSO in treatment of mandibular malformations.
Materials: In years 1999–2005 we operated 382 patients (762 splits) with mandibular malformations (mandibular prognathism, retrognathism, lateral displacement) in our department. In 15 cases we had a 'bad split' complication with fracture of the lateral cortex at different levels.
Methods: In our department the osteotomy is performed by rose and Lindemann burrs. The modification of the well-known method was based on the initial osteotomy of the lower mandibular margin with a fine Lindemann burr (with a protection of the neurovascular bundle) and a consequent split of the lower edge by a curved fine osteotome. As a routine the osteotomised bone fragments were stabilized by 4-hole miniplates.
Results: In cases of 'bad split' we managed to accomplish the surgical procedure by using long plates or specially designed plates (according to the Munster concept) and prolonged intramaxillary fixation (up to 4–5 weeks). The experience gained from these cases allowed us to develop the modification which decreases the bad split incidence rate to less than 0.5% (2 cases in 252).
Conclusion: BSSO, although widely performed due to its simple application, still requires profound surgical experience and knowledge, which allow to employ a number of minor, but beneficial modifications of the standard technique. Our modification, apart from its unquestionable good results in reducing the rate of 'bad splits', is simple and does not require any sophisticated instrumentation.

O.145 Cranio-cervical-hyoid posture adaptation following mandibular surgical advancement in adult II class

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Introduction and Objectives: Although the analyses of correlation between facial morphological characteristics and craniocervical posture are accepted, various studies have documented a variability of cranio-cervical-hyoid posture in relation to changed mandibular position. The aim of this study is to identify the principal factors of stability in the postural adaptation of craniocervical-hyoid posture after mandibular surgical advancement.
Materials and Methods: The sample consisted of 30 adults with II class malocclusion who underwent mandibular surgical advancement by osteotomy. Two teleradiograhs were taken on each subject before surgery and 1 year after surgery (in natural head position) and were evaluated through cephalograms with performing fifteen measurements on both tracings. The results of the measurements were statistically compared.
Results: The results show (1) that with surgical mandibular advancement the hyoid bone follows mainly the advancement of the mandible; (2) the hyoid bone moved in parallel with the line of C3 to maintain unchanged the pharyngeal airway space; (3) the adaptation of cervical spine with flexion of C1–C2 secondary the mandibular advancement; (4) the minimal adaptation of the suprahyoid muscles.
Conclusions: The findings strongly suggest that the craniocervical-hyoid posture adaptation after mandibular surgical advancement present specific factors of stability.

O.146 The role of midline mandibular osteotomy in the management of transverse skeletal discrepancies

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Introduction and Objectives: Skeletal discrepancies have been traditionally adressed by expanding the maxilla either with a segmental lefort i osteotomy or a surgically assisted rapid maxillary expansion (SARME). we propose a mandibular narrowing through a midline mandibular osteotomy (MMO) as a method to treat transverse discrepancies.
Material and Methods: Nine patients treated with a MMO were retrospectively reviewed. All patients had a bilateral sagital split osteotomy(BSSO) in addition to the MMO. All osteotomies were rigidly fixed with a 2.0 MM 4-hole miniplate in the symphisis and with either bicortical screws or miniplates in the BSSO. In 5 patients the mandibular osteotomies (BSSO+MMO) were performed with a simultaneous segmented lefort i osteotomy.
One year after the surgery, the patients were reviewed with special attention to stability of the transverse correction, TMJ dysfunction and periodontal problems at the MMO site.