

## Simultaneous bimaxillary distraction osteogenesis for correction of facial asymmetry: Using a rigid external distractor

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Facial asymmetry secondary to mandibular hypoplasia is a common problem in the field of craniomaxillo-facial surgery. Mandibular hypoplasia uni- or bilateral, may result from disturbed embryogenesis, or may represent an acquired deformity as a sequela of condylar fractures suffered at an early age of life with secondary ankylosis of temporomandibular joint.

The surgical technique of distraction osteogenesis has long been used in the reconstruction of defects of the long bones of extremities. The technique has only recently become popular in the surgical reconstruction of the cranio-facial skeleton, and the mandible has received most attention, both in experimental and human models.

Mandibular distraction in adult patients with facial asymmetry secondary to hemicranio-facial microsomia and/or unilateral ankylosis of the temporomandibular joint, which usually, has stable (compensated) dental occlusion produces good esthetic results, but also produces severe alterations in the occlusion requiring complex and prolonged orthodontic treatment to solve this problem.

Bimaxillary distraction was applied via simultaneous complete Le Forte I maxillary osteotomy, in addition to mandibular osteotomy, after intermaxillary fixation, insertion of a rigid extra-oral distractor. After a latent period of 5 days, distraction was started at a rate of half mm per twelve hours. In this way the maxilla was distracted simultaneously with the mandible preserving the pre-existing stable dental occlusion, and avoiding the need for orthodontic treatment with correction of the facial asymmetry. Distraction osteogenesis avoids the need for bone graft with its morbidity, and gives stable results as regards facial esthetics. Thirty patients (sixteen with unilateral ankylosis, ten with hemicraniofacial microsomia, and four with bilateral asymmetric ankylosis) were treated using this technique. The duration of distraction varied from 10 to 20 days, followed by a period of consolidation of 8 weeks, their age ranged from 14 to 22 years. Patients with hemifacial microsomia were grades I, II & III, in the last patient a costochondral graft was inserted 6 months before distraction. Follow up ranged from five to ten years after distraction.

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