

Maxillary cleft deficiency using external and internal devices - Long-term results

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Abstract

Aim: Correction of the hypoplastic maxilla secondary to cleft patients is a great challenge due to a significant vertical and horizontal deficiency and difficulty in mobilizing the hypoplastic maxilla as a result of scarring from previous operations. In addition there is a great tendency for relapse following the major movements which are required.

Based on research and clinical experience, distraction osteogenesis has minimal tendency to relapse even following great skeletal movements, due to the new bone formed in the distraction gap.

Moderate to severe maxillary deficiency can be better treated using distraction osteogenesis due to the relative major movements possible in anterior and downward directions.

I will present our experience using internal and external devices in maxillary cleft deficiency including transport distraction osteogenesis.

Material and methods: Maxillary distraction was performed using internal or external devices. The rate of distraction was 1mm per day until achieving a Class I occlusion with partial overcorrection and improvement in facial profile convexity. Following the latency period, distraction devices were removed. Long term follow up of 5 years will be presented.

Results: The external devices system offers greater distraction length, a control on the vector of lengthening and is easily removed. However, it is uncomfortable for the patient when wearing for long periods of several months, the device is exposed to external trauma forces during that period and there is a risk of parietal bone penetration.

Internal distraction devices usefully perform advancement of the deficient maxilla and are safer to wear for long periods of several months, they do not create social discomfort and therefore permit longer retention periods which may contribute to better stability than external devices. However their major disadvantage is that they require a second operation under general anesthesia for device removal.

Summary: In conclusion, The hypoplastic maxilla in cleft patients is associated with moderate to severe retrusion, and is better treated by distraction osteogenesis than by conventional orthognathic surgery. The internal devices should be considered first

even when taking into account the major disadvantage of a second operation for device removal.