

FP11

Achievement of cranio-facial symmetry in isolated unilateral coronal synostosis: long-term photometric results

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Introduction: The aim of surgery in isolated unilateral coronal synostosis is to prevent functional problems, if possible, and mainly to obtain a better cranial and facial shape in terms of symmetry of the fronto-orbital area and to normalize overtime the facial twisting. The keys to a successful morphologic result are the amount of hypercorrection, accuracy in modelling and repositioning of bone segments, and their appropriate fixation.

Methods: A sample of 35 patients affected by plagiocephaly documented with 3D cranial CT-scan were treated at our department from January 2001 to December 2013. The age ranged from 5 to 26 months. Our cranioplasty technique previewed disconnection, reshaping and repositioning with titanium plates of the deformed bone segment to achieve a stable fixation aimed to drive a symmetric facial growth. All patients had pre and post op photometric serial pictures with the same projections and magnification. Craniofacial landmarks were provided to establish the degree of fronto-orbital and facial symmetry.

Results: All the patients underwent 18 to 25 mm advancement of the fronto-orbital bandeau on the affected side. The morphologic long-term follow up (range 1-12 years, average 62 month) demonstrated an immediate post-op normalization of the fronto-orbital area and during the growth the achievement of a final facial symmetry in a 4-6 years period.

Conclusion: Over the last years several new techniques/material as distraction, springs and reabsorbable plates have been proposed. All the techniques can obtain an effective anterior frontal bone expansion. However, very few long-term studies on the results on facial symmetry in plagiocephaly are available. We think that among the goals of craniofacial surgery in plagiocephaly there is the obtainment of cranio-facial symmetry. In our experience this is reachable with the technique proposed.