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Treatment of scaphocephaly with total cranial remodeling: our experience and results

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Introduction: The scaphocephaly represents approximately 50% of non-syndromic craniosynostosis. We report our technique of total cranial remodeling and our results.

Material and Method: From 1995 to 2011 we treated 567 craniosynostosis with 316 scaphocephaly. Generally, children were operated between 5 and 6 months of age or with a minimal weight of 5 kg. All children were examined with a 3D CT scan, ophthalmologic consultation (BB vision) and an EEG. The surgical technique used in 296 patients consisted of resection of the sagittal suture with cutting two fronto-parieto-occipital bones flaps overpassing coronal and lambdoidal sutures. Resection of pterion and asterion were also performed. Linear osteotomies of the occipital and temporal bones were also realized in order to open the occipital prominence and to favor the transversal development of the skull. Twenty patients were treated with endoscopic technique and cranial helmet. 60% of patients were transfused.

Results: Results were satisfactory with improved cranial index and parental satisfaction in more than 95% of cases. 80% of children of school age have a normal scholar education.

The complication was low with some scalp hematoma (0.9%), few superficial infections of the skin (0.9%) and three pseudo-meningocele needing a temporary meningo-peritoneal shunt. One patient (0.3%) died due to acute respiratory distress occurred four hours after surgery and complicated metabolic acidosis.

Conclusion: The total cranial remodeling in scaphocephaly allows a satisfactory result improving the shape of the skull and good morphological result. 80% of patients have a normal schooling that means that craniosynostosis is not only an aesthetic problem. About the endoscopic technique we believe that the use of a cranial molding helmet in the postoperative period is necessary.