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The use of different methods to evaluate the postoperative outcome of coronal and metopic synostosis surgery in a small clinical series and literature review. The necessity for a unified, widely accepted evaluation method of craniosynostosis surgery

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Introduction: Craniosynostosis surgery has evolved several surgical techniques in order to aesthetically remodel the skull contour and in many cases to decompress the brain. Numerous methods that are based either on subjective or objective criteria have been proposed to evaluate the postoperative outcome and are used variably by institutions worldwide, which limits the accurate assessment and consequently the review of the individual surgical techniques. We retrospectively reviewed a series of 10 patients operated for craniosynostosis in our clinic between 2009 and 2013. The aim of our study is to analyze the outcome by employing the Whitaker classification and more objective computed tomography measurement techniques and compare it to the literature.

Methods: The sample of our study was 10 patients, 7 males and 3 females, with a median age at the time of operation 10 months. The types of deformities corrected were unilateral coronal synostosis (4 patients), bilateral coronal synostosis (2 patients) and metopic synostosis (4 patients). The operative techniques used were the frontorbital advancement and cranial remodeling.

Results: According to the Whitaker score, 8 patients reached excellent aesthetic result (Category I) and 2 patients good (Category II). The CT scan quantitative evaluation method was utilized and the mean supraorbital rim projection to cornea plane difference towards normal in bicoronal and unicoronal craniosynostosis was 8,5mm and 10,4mm respectively and the mean postoperative frontal stenosis ratio in the metopic craniosynostosis was 1,21. Our results are all in accordance with those of the literature.

Conclusion: Different methods are used to evaluate the postoperative result in craniosynostosis surgery. Small neurosurgical departments can assess their results more efficiently by utilizing more than one method. A more systematic, objective and widely accepted method should be introduced in order to facilitate the review of the evolving surgical techniques and modifications.