

Background: The technique of facial bipartition has been considered a great advance in achieving a more natural appearance in hypertelorism correction.

Methods: Fourteen patients who had undergone hypertelorism correction by facial bipartition were retrospectively studied to analyze the role of three-dimensional computed tomographic reconstruction in the evaluation of the deformity and preoperative planning. The procedure and surgical details that can improve the outcome were described. A reproducible set of three-dimensional measurements that can help in preoperative patient evaluation was determined based on information obtained using the Analyze/AVW 3.1 system (Biomedical Imaging Resource, Mayo Foundation, Rochester, Minn.).

Results: In this series, the most common diagnosis was frontonasal dysplasia (64.3 percent). Five patients had second-degree (35.7 percent) and nine had third-degree hypertelorism (64.3 percent). The three-dimensional scans were shown to be highly accurate in predicting the degree of deformity. There was a significant difference in the preoperative and postoperative interdacryon distance and midface height ($p < 0.05$) but not in the bitemporal distance ($p = 0.08$). The simulation correlated significantly with the postoperative result when interdacryon distance and midface height were analyzed (0.736 and 0.999).

Conclusions: Facial bipartition provided a three-dimensional correction of hypertelorism. Three-dimensional imaging can definitely be considered an extra tool for accurate surgical planning and helping the family understand the surgical procedure and the end result.