

## **Evaluation of facial harmony after orthognathic surgery using Delaire craniofacial cephalometry. Part 2: Soft tissue harmony**

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Introduction: few studies have established a link between skeletal facial balance and facial harmony in subjects operated from dentofacial deformities.

The objective of our study was to know if restoration of skeletal balance after orthognathic surgery following Jean Delaire's concepts improved also facial harmony. Materials and methods: fifty patients were selected by 12 surgeons among their best results in term of facial balance and dental relationships stability. Then customized craniofacial drawing (CCFD) was determined pre- and post-operatively on lateral cephalometries and compared to the real position of jaws. A website was created to allow online voting by a non-expert jury to subjectively evaluate the facial harmony of the cases before and after surgery. Results: We had 1,215 voters on our site. For each photo there were 243 votes for a total of 22,887 votes. There was a significant improvement in scores between postoperative and preoperative cases,  $p < 0.0001$ . Comparison of preoperative and postoperative scores according to non-expert evaluators showed a significant improvement in scores when genioplasty had been performed,  $p=0.0012$ . Discussion: the approximation of the skeletal variables to the theoretical ones predicted by Delaire's analysis in the postoperative period is correlated with the significant improvement of the aesthetical scores in the postoperative period compared to the preoperative period. Thus, it is shown that as the theoretical skeletal balance of Delaire was approached, an improvement in facial soft tissue harmony was observed. Genioplasty particularly favored this correlation between skeletal balance and harmony of the facial profile.