

A & S_h

Individuals With a Long Face Growth Pattern and Excess Inferior Scleral Exposure: Is There Improvement After Maxillary (Le Fort I) Advancement and Vertical Shortening?

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Purpose: Excessive inferior eyelid scleral exposure is considered an unattractive facial feature. The purpose of this study was to identify those patients with long face and excess inferior scleral exposure and then assess the change after maxillary (Le Fort I) advancement and vertical shortening.

Materials and Methods: To address the research purpose, the authors executed a retrospective case series study. A consecutive series of patients with a long face growth pattern scheduled for orthognathic correction were identified. Standardized photographs were used to document those with excess lower eyelid scleral show. Those patients with excess scleral show were studied to document any change in sclera show before and more than 1 year after maxillary (Le Fort I) osteotomy with advancement and vertical shortening. The pre- and postoperative proportional values of sclera show were compared using the Wilcoxon signed-rank test ($P < .05$). Analytic model planning documented maxillary vector change data points as an indicator of maxillary deformity and the extent of horizontal advancement and vertical shortening to be achieved at operation.

Results: The study group of 10 patients (7 female and 3 male) with excess scleral show was derived from a larger group of 46 patients with long face. Their ages ranged from 15 to 35 years at operation (mean, 23 yr). Maxillary surgical change averaged 6-mm advancement at the incisors (range, 4 to 10 mm), 3-mm vertical shortening at the incisors (range, 1 to 6 mm), and 3-mm vertical shortening at the molars (range, 1 to 6 mm). Average decreases in scleral show of 8 and 6% compared with total eye height were noted in the right and left eyes, respectively. These results were statistically significant ($P < .05$). Four of the 10 patients achieved complete correction of inferior sclera exposure. All 10 achieved a decrease of their total eye height. None of the patients required or requested further cosmetic improvement in the zygomatico-orbital skeletal or adnexal soft tissue region.

Conclusion: For the individual with a long face jaw growth pattern and pre-existing excessive lower eyelid sclera show, surgical correction through maxillary advancement and vertical shortening will create a more favorable relation among the orbits, ocular globes, and lower eyelids.

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SD_{ch} = SD₁ + SD₂ - Y₂

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$$n_s \frac{(z_1 - z_1) + (z_1 - z_1)}{(\bar{x}_1 - \bar{x}_2)^2} \cdot SD^2 = 1809$$

$$\frac{(1.99 + 1.52)^2}{(1.2)^2} = 107.69$$

1.2