Age of Surgery and Stability of Class III Correction

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Objectives: Patients with skeletal Class III problems often experience jaw growth in the late teens or early 20s that can affect long-term stability. This retrospective study examined the relationship between age at surgery and long-term postsurgical change to test the hypothesis that younger patients at the time of surgery would have greater long-term changes than older patients.

Methods: Lateral cephalograms were obtained before, immediately after, and at least five years after orthognathic surgery to correct a skeletal Class III problem. Of the 104 such patients with long-term records (mean age = 24; std = 10.4), 63% were female; 52 had maxillary advancement only, 36 had 2-jaw surgery, and 16 had mandibular setback only. The differences between immediate postsurgery and long term cephalograms were calculated for 16 linear measures. Age at the time of surgery, length of time till followup, gender, presence of a genioplasty and the type of surgery, as well as pairwise interactions, were included as possible predictors in a multiple regression analysis separately for each cephalometric measure. Multiple partial F tests were used to remove predictors. The level of significance was set at 0.05.

Results: Age at the time of surgery was significantly (p<0.05) related to 6 of the 16 measures of change: overjet, mandibular length (condylion-pogonion), x-coordinate of gonion, and y-coordinates of A point, B point and pogonion. The younger patients tended to have greater posterior and inferior growth postsurgery than older patients.

Conclusions: Even though surgery for these Class III patients was deferred until growth was judged clinically to be essentially completed, the data indicate that postsurgical growth leading to a loss of some of the skeletal correction is a greater risk in patients who have relatively early surgery. Supported by NIH DE 005215.

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Back to the Craniofacial Biology Program
Back to the IADR/AADR/CADR 83rd General Session (March 9-12, 2005)

Top Level Search