

Impact of Relaxing Incisions on Maxillofacial Growth Following Sommerlad-Furlow Modified Technique in Patients with Isolated Cleft Palate: A Preliminary Comparative Study

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Abstract : Background: The impact of relaxing incisions on maxillofacial growth during palatoplasty remains a topic of debate, and further research is needed to understand its effects fully. Thus, the current study is the first long-term study that aimed to assess the maxillofacial growth of patients with isolated cleft palate following the Sommerlad-Furlow modified (S.F) technique and to estimate the impact of relaxing incisions on maxillofacial growth following S.F technique in patients with isolated cleft palate. Methods: A total of 85 participants, 55 patients with non-syndromic isolated soft and hard cleft palate underwent primary palatoplasty with our technique (30 patients received the Sommerlad-Furlow modified technique without relaxing incision (S.F+RI group), and 25 received Sommerlad-Furlow modified technique without relaxing (S.F-RI group) with no significant difference found between them regarding the cleft type, cleft width, and age at repair. While the other 30 were normal participants with skeletal class I pattern (C group). The control group was matched with the study group in number, age, and sex. All the study variables were measured using stable landmarks, including 12 linear and 10 angular variants. Results: The mean ages at collection of cephalograms were 6.03 ± 0.80 in the S.F+RI group, 5.96 ± 0.76 in the S.F-RI group, and 5.91 ± 0.87 in the C group. Regarding cranial base, the results showed no statistically significant differences between the three groups in S-N and S-N-Ba. The S.F+R.I group had a significantly shorter S-Ba than the S.F-R.I & C groups ($P = 0.01$). However, there was no statistically significant difference between the S.F-R.I & C groups ($P = 0.80$). Regarding the skeletal maxilla, there was no significant difference between the S.F+R.I and S.F-R.I groups in all linear measurements (N-ANS, S- PM & SN-PP) except Co-A, the S.F+R.I group had significantly shorter Co-A than the S.F-R.I & C groups ($P = <0.01$). While the angular measurement, S.F+R.I group had significantly less SNA angle than the S.F-R.I & C groups ($P = <0.01$). Regarding mandibular bone, there were no statistically significant differences in all linear and angular mandibular measurements between the S.F+R.I and S.F-R.I groups. Regarding intermaxillary relation, the S.F+R.I group had significant differences in Co-Gn - Co-A and ANB compared to the S.F-R.I & C groups ($P = <0.01$). There was no statistically significant difference in PP-MP among the three groups. Conclusion: As a preliminary report, the Sommerlad-Furlow modified technique without relaxing incisions was found to have good maxillary positioning in the face and a satisfactory intermaxillary relationship compared to the Sommerlad-Furlow modified technique with relaxing incisions.

Keywords : relaxing incisions, cleft palate, palatoplasty, maxillofacial growth

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