Is There a Correlation Between Milimetric Movement of Two Jaw and Nazolabial Angle Change after Orthognathic Surgery in CLASS III Patients

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INTRODUCTION: Orthognathic surgery is an effective and popular treatment method in plastic surgery, which provides both functional and esthetic benefits. Therefore, the ability to predict postoperative changes in bone and soft tissue especially the nose is crucial [1].The aim of this study is to examine if there is a correlation between movement quantity and nasolabial angle changes after two-jaw surgery.

MATERIALS AND METHODS : 19 patients (4men, 15 women) with Class III maloclusion who under went orthognathic surgery between 2010-2015 were included. Mean age was 21.8(18 -26). 2 only maksiller advancement. 3 only mandibular setback , 1 only mandibular advancement. 13 two-jaw surgery were applied.. Preoperative and postoperative measurements of nasolabial angles were done by photographic analysis. Maxillar and mandibular movement quantity and nasolabial angle change degree were compared.

RESULTS: Nasolabial angle was increased at 13 and decreased at 5 patients. The mean nasolabia langle was 87° beforesurgery, and increased to 88.2° after surgery. In one patient nasolabial angle increased 12% after 2 mm maxillar advencement and 7 mm mandibular setback. In another patient nasolabial angle increased 1% after 3 mm maxillar advencement and 7 mm mandibular setback. Even, in one patient angle decreased 12% after 3 mm maxillar advencement, 4mm impaction and 5 mm mandibular setback may be due to osteotomy line and soft tissue. So, there was no statistical correlation between movement quantity and nasolabial angle changes.

CONCLUSION: First efforts were made to quantify nasal soft tissue changes due to bony manipulations in 1970s. However, it is diffucult to guess soft tissue changes before surgery [2]. According to this study there is no definite correlation between movement quantity and nasolabial angle changes may be due to soft tissue and osteotomy line. So, it might be sensible to do additional interventions at second stage operations.

REFERENCES

1- Marsan G, Cura N, Emekli U. Soft and hard tissue changes after bimaxillary surgery in Turkish female Class III patients. J Craniomaxillofac Surg 2009;37:8–17.

2- Altman JI, Oeltjen JC. Nasal deformities associated with orthognathic surgery: analysis, prevention, and correction. J Craniofac Surg 2007;18:734e9.