

# Rotation of the maxillomandibular complex for enhancement of facial Esthetics

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## INTRODUCTION

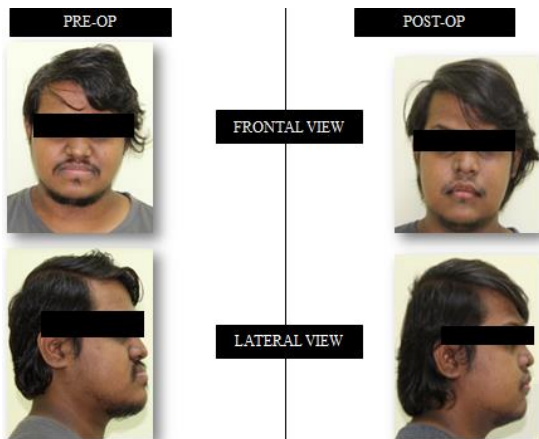
Correction of dentofacial deformities is a multidisciplinary approach that involves the collaboration of both the orthodontist and the Oral and Maxillofacial surgeon. The diagnosis, treatment planning and its execution requires a lot of premonition. Conventionally, the movement of the maxilla-mandibular complex was performed either in the antero-posterior or superior-inferior planes. This corrected the deformity in the linear plane. The discrepancy in the pitch and yaw could not be addressed by conventional technique. The decision to change the angle of the occlusal plane cannot be arbitrary and can be only made when desired results cannot be obtained by conventional treatment planning.<sup>1</sup>

### Case 1:

A male patient of 27 years came to the clinics with a class III skeletal base, prognathic mandible and a prominent chin. He also had proclined upper and lower anteriors with a class III molar relation on both sides with a anterior crossbite. His soft tissue profile had a concave profile, anterior divergence and protrusive lower lip.

### Surgical procedure:

A bimaxillary procedure involving the rotation of the maxilla-mandibular complex in a clockwise direction was performed with the zygomatic buttress as the point of rotation. This resulted in decreased anterior facial height, increased posterior facial height and advancement of the mandible.



**Case 2:**

A 26 year old female patient came to the clinic with a vertical maxillary excess, retrognathic mandible and retruded chin. She had an angle class II malocclusion on the left side, proclined upper and lower anteriors, increased overjet and overbite. Her soft tissue profile was convex in nature, had a protrusive upper and lower lip.

**Surgical procedure:**

A leforte I osteotomy was performed and the maxillomandibular complex rotation was performed with the posterior nasal spine as the point of rotation resulting in a counter clockwise rotation of the maxillomandibular complex. Due to the presence of a impacted 33 the advancement of genium was postponed to another date. The surgery resulted in decreased facial height and and maximized advancement of the mandible.



Pre- Operative



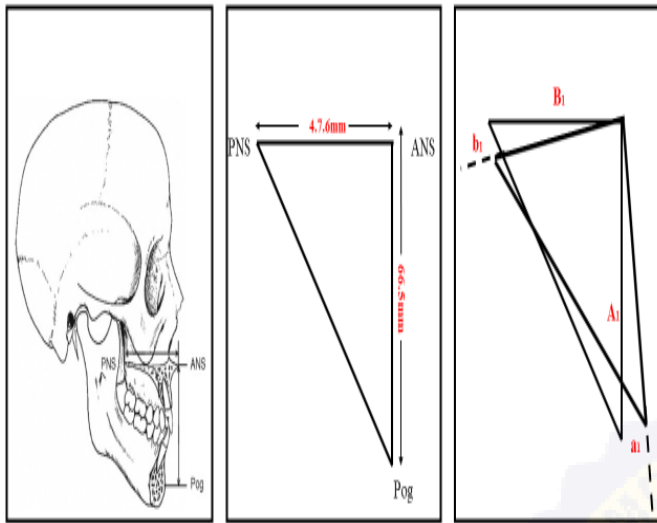
Post-operative

**Discussion:**

Many of the dentofacial deformities can be corrected by conventional treatment methods. However by

adhering to the conventional treatment methods may not always give desired facial esthetics<sup>2</sup>. The analysis of dentofacial deformities and subsequent treatment has certainly become a science that has to be applied to achieve optimal functional, esthetic and stable results at the end of each and every case. The nuances of obtaining the best esthetic changes still requires a lot of planning and premonition. It is in cases where conventional treatment principles don't give the desired results should rotation of the maxilla-mandibular complex must be explored. When planning preferred 3-dimensional (operative) positioning of the maxilla and mandible, thoughtful adjustment of the A-point to B-point relationship (as viewed in profile) profoundly affects overall facial esthetics<sup>5</sup>. A triangle is constructed by connecting ANS, PNS and Pogonion and is called the maxillomandibular complex triangle. The ratio between ANS-PNS and ANS-Pog is 1:1.410. Usually, convex profiles would require a counter clockwise rotation and convex profile would require a clockwise rotation of the maxilla-mandibular complex. The selection of the rotation point is directly dictated by the esthetic requirement of each specific case. The most commonly used points of rotation are the Anterior nasal spine, posterior nasal spine, tip of the upper incisor, zygomatic buttress and pogonion, however; according to the facial esthetics any anatomical point can be used for rotation. This is usually predicted by using cephalometric tracing methods. It is mandatory that the ideal vertical and anteroposterior relationship of the upper incisor and upper lip is established before the rotation of the maxilla mandibular relationship is planned. After validating the viable surgical treatment option a point A to point B relation was obtained in a model surgery and wafers were fabricated to be used in positioning of the maxilla and mandible intraoperatively<sup>5</sup>. A study by Reyeneke et al has shown that the skeletal stability of the clockwise rotation and counter clockwise rotation is acceptable in the long term as long as the rotation occurs near the condyle of the mandible<sup>6</sup>.

## The ratio between ANS-PNS and ANS-Pog is 1:1.4



### Conclusion:

One can conclude that rotation of the maxilla-mandibular complex can be considered for enhancing the facial esthetics as an alternate treatment when conventional treatment does not give desired results.