

Surgical treatment planning for the two subtypes of mandibular asymmetry

Ju-Hong Jeon, D.D.S., M.D.

Section Editor of JKAOMS

Department of Oral and Maxillofacial Surgery, Asan Medical Center, Seoul, Korea

In treatment planning for dentofacial asymmetry, as in other dentofacial deformities, the vertical and anterior-posterior position of the maxilla and the occlusal plane angulation should be determined from clinical and cephalometric evaluation¹. The midfacial midline, upper and lower dental midlines and chin midline also need to be carefully evaluated, and the amount of occlusal canting and yawing is a key aspect of repositioning the maxilla.

Generally, mandibular position is dictated by the maxilla, maxillary teeth and occlusal plane angulation. However, asymmetric maxillary arch, which can occur in the molar region despite careful presurgical orthodontic treatment, can lead to improper positioning of the mandible and residual asymmetry, especially in the mandibular angle and ramus area.

I suggest herein that, in orthognathic surgery for asymmetric mandibles, the mandibular movement required to achieve an appropriate occlusal relationship to the maxilla can be classified into two types according to the subtype of mandibular asymmetry: *rotational* or *translational*.

In surgical treatment for rotational mandibular asymmetry, when the mandibular midline is shifted laterally, the most posterior aspect of one distal segment is rotated medially and the other side is rotated laterally. This causes gaps between the fragments when performing mandibular osteotomy. Displacement of the condyles medially or laterally within the mandibular fossa can occur when the proximal and distal segments are not passively positioned to one another during the application of internal fixation devices². Several techniques are available to minimize or eliminate condylar displacement and its sequelae²⁻⁴.

In presurgical orthodontic treatment for translational mandibular asymmetry, transverse dental decompensation of

the posterior as well as the anterior teeth in both arches is required for lateral translational movement of the mandible and successful restoration of facial symmetry^{5,6}. However, I have found that presurgical transverse dental decompensation for asymmetric patients is frequently incomplete, especially in the maxillary molars. I recommend establishing increased overjet of the molar region in postsurgical occlusion or additional maxillary yawing to achieve favorable esthetic results in these cases⁶.

Surgical treatment planning for asymmetric patients should consider asymmetry subtypes and the movement of the asymmetric mandible as well as other traditional parameters.

Conflict of Interest

No potential conflict of interest relevant to this article was reported.

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