

TECHNIQUE CLINIC

Acrylic Occlusal Rim

Surgical-orthodontic treatment of a skeletal Class III patient is always challenging because of the severity of the malocclusion. To develop the orthodontic treatment plan, the clinician needs to assess the post-surgical Class I malocclusion. Before treatment, the initial casts can be manually articulated in a Class I position, allowing the orthodontist to factor out the skeletal discrepancy.

During presurgical treatment, occlusal evaluation is an ongoing process. A surgical Class II patient can protrude the mandible to simulate mandibular advancement, so the orthodontist can visualize the post-surgical occlusion. Since a Class III patient cannot retrude the mandible, the orthodontist often has to take several progress impressions to check the interarch relationships and determine whether the patient is ready for surgery.

We have developed a simpler and more efficient procedure, involving a reusable acrylic occlusal rim of either the maxillary or mandibular teeth that can

be articulated intraorally against the opposing arch. When one arch has been completely leveled and aligned, with spaces closed, we take an alginate impression of that arch. Acrylic (rather than plaster) is either vibrated into the dental portion of the impression or built up using the “salt and pepper” technique. (Vibration is easier for those who are not used to mixing acrylic.) Once the acrylic has set, it is trimmed just apical to the gingival margins and narrowed buccally to fit into the oral cavity (Fig. 1). The acrylic occlusal rim is then articulated to assess the sagittal, transverse, and vertical relationships (Figs. 2,3).

Unlike conventional plaster casts, this technique gives the orthodontist the ability to evaluate presurgical treatment intraorally over successive visits, using one acrylic occlusal rim.



Fig. 1 Trimmed mandibular acrylic occlusal rim.



Fig. 2 Maxillary acrylic occlusal rim articulated to evaluate presurgical interarch relationships and predict post-surgical occlusion.



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Fig. 3 Mandibular acrylic occlusal rim used in different patient. Posterior crossbite indicates need for further presurgical orthodontic treatment or surgical expansion.