A Novel Technique for Improving Lower Facial Contour Using a 3-D Custom-Made Silicone Guide

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The chin is the most prominent aesthetic unit of the lower face and any disharmormies can adversely affect a patient's facial profile, self-esteem and perception of 'ideal' beauty. The osseous genioplasty is the surgical technique of choice to correct chin deformities in all planes, including anterior-posterior, sagittal and vertical deficiencies. However, reduction genioplasty alone to address the 'prominent chin' is associated with unpredictable postoperative stability and soft tissue changes[1, 4].

We describe our technique of an extended reduction genioplasty enhanced by using a custom-made surgical template. The template is fabricated of silicone, made on a stereolithographic model of the facial skeleton obtained from fine-cut slices of 3D Computer Tomography Scan. To minimize movement during surgery, the template is secured to the osseous chin using titanium screws.

Our modification of the extended reduction genioplasty using a guiding template vastly improved surgical planning by providing a directional guide to the exact placement of the osteotomy cuts. We will show how you can achieve a favourable symmetrical outcome following an extended reduction mandibular body/genioplasty in selected patients.