

# Aesthetic Adjuncts with Orthognathic Surgery



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## KEYWORDS

- Orthognathic surgery • Soft tissue fillers • Hard tissue augmentation • Submental liposuction
- Liplift • Rhinoplasty

## KEY POINTS

- Traditional orthognathic surgery aligns the patient's bony jaws into a desired, more appropriate position but may leave other cosmetic issues unaddressed.
- Soft tissue deformities may be treated concomitantly with orthognathic surgery, including soft tissue augmentation (fillers), reduction (liposuction), hard tissue augmentation, cosmetic lip procedures, and rhinoplasty.
- Some cosmetic adjunctive procedures may be performed at a later date after soft tissue edema from orthognathic surgery has resolved to achieve a more predictable outcome.
- Undesired cosmetic changes may occur months to years after orthognathic surgery and may be addressed by adjunctive cosmetic procedures.

## INTRODUCTION

Orthognathic surgery, although serving to correct functional skeletal and dental discrepancies, should be based on the maximal aesthetic outcome achievable for the patient. Patients are generally referred by the orthodontist or primary-level care provider to evaluate and correct a skeletal and/or dental malocclusion. However, approaching these patients with aesthetic concerns in mind maximizes the overall benefit of orthognathic surgery. First introduced by Worms and colleagues,<sup>1</sup> and further modified by McCollum and Evans,<sup>2</sup> treatment planning was suggested primarily to establish the most favorable contours of the soft tissue facial profile. Once assessed, these data could then be used to determine the amount and direction of tooth and skeletal movement to achieve the specific soft tissue contours. This approach directs importance to the soft tissues, because they introduce greater variability to the final result, followed by manipulation of the hard

tissues, which are more fixed in their ultimate position. Orthognathic surgical treatment planning may be limited to isolated maxillary or mandibular osteotomies (single jaw), or combined maxillary and mandibular surgery (double or 2-jaw) when appropriate. Regardless, a vigilant surgeon should consider additional aesthetic adjuncts that may dramatically improve patient appearance (Box 1). These changes are ideally based on achieving symmetry, balance, proportion, and overall facial harmony. It is important to prioritize this outcome from the initial consultation, thus providing the philosophic framework for surgical optimization and a final aesthetic result.

Using this approach, multiple adjunctive procedures exist that can improve on the outcomes achieved with skeletal movements alone. The skeletal and soft tissue discrepancies that are present, the specific surgical treatment planned, and the personal desires of the patient dictate these options.

Disclosures: None.

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### Box 1 Orthognathic procedures

#### Midface surgery

Le Fort I, II, III osteotomies  
Orbital osteotomies  
Zygoma osteotomies

#### Mandibular surgery

Sagittal split osteotomies  
Vertical ramus osteotomies  
Anterior segmental osteotomy  
Angle/inferior border resection

Jones and Smith<sup>3</sup> described the sequencing of cosmetic surgery to be based on orthognathic surgery. A similar method to categorize procedures is described as:

1. Procedures that enhance the result of orthognathic surgery, performed concomitantly.
2. Procedures performed perioperatively that supplement the orthognathic surgery result. Typically performed 3 to 6 months after orthognathic surgery.
3. Procedures performed at a distant time from orthognathic surgery, often to correct unfavorable orthognathic surgery sequelae.
4. Camouflage cosmetic surgery performed on patients not desiring optimal orthognathic surgery but still desiring some aspect of favorable soft tissue improvement. This route should be discussed with the patient's orthodontist to determine whether a functional and stable occlusion can be obtained with orthodontic therapy alone (**Box 2**).

### ***Procedures Performed at the Time of Orthognathic Surgery***

Simultaneous augmentation/alteration of the skin, submentum, and nasal tissues offers the advantage of cost-effective, convenient, and comprehensive treatment of the patient and minimizes the risk of anesthesia to a single surgery. Disadvantages include soft tissue edema secondary to orthognathic surgical manipulation, variation in the soft tissue drape, and increased operating time.<sup>4</sup>

### ***Procedures Performed Perioperatively to Orthognathic Surgery***

Delayed adjunctive aesthetic procedures are recommended in cases that create a higher risk of

### Box 2 Adjunctive procedures

#### Skin procedures

Laser hair removal  
Skin resurfacing  
Treatment of red/brown lesions

#### Upper face procedures

Hairline augmentation  
Temple augmentation  
Forehead/brow augmentation

#### Midface procedures

Orbital augmentation  
Malar osteotomies/implants  
Piriform augmentation  
Soft tissue augmentation  
Lip augmentation/shortening  
Rhinoplasty

#### Lower face procedures

Chin augmentation/reduction  
Mandibular angle modification  
Submental/jowl liposculpting  
Lower face/neck rhytidectomy

unpredictable changes at the time of surgery, which include:

- Complex or drastic changes to the nasal structures
- Compromises to the vascularity of the epithelium

### ***Procedures Performed Temporally Distant to Orthognathic Surgery***

Correcting soft and hard tissue deformities created iatrogenically during orthognathic surgery is in the category of delayed treatment. These deformities include mandibular inferior border notching caused by a sagittal split osteotomy or sliding anterior segmental osteotomy, and so-called winging of the mandible caused by a vertical ramus osteotomy. Hard and soft tissue facial asymmetry may need to be camouflaged if control of yaw movements during 2-jaw surgery or genioplasty was lost. Common iatrogenic soft tissue deformities include an unaesthetic labiomental crease, malar or submalar asymmetry or deficiency, and unaesthetic changes to the nasal appearance.

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