Chin and Malar Augmentation

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Introduction

- Chin augmentation
- Malar augmentation
- Chin augmentation more developed
Chin projection

- Line perpendicular to the frankfurt horizontal at lower vermilion
- Legan Angle
- Merrifield Z angle
- Gonzales-Ulloa
- Line from lips to chin
Frankfurt horizontal line

FIG. 186-1. Silver’s chin soft-tissue assessment. A: Preoperative view. B: Postoperative view. 1, line parallel to Frankfurt horizontal line, which intersects vermilion cutaneous border of lower lip; 2, drop perpendicular from (1). Chin should be at or slightly behind (2).
Other methods of chin projection

**FIG. 186-2.** Logan angle. A: Preoperative view. B: Postoperative view. 1, glabella to subnasale; 2, subnasale to soft-tissue pogonion. Angle created by (1) and (2) is 12° ± 4° degrees.

**FIG. 186-3.** Merrifield Z angle. A: Preoperative view. B: Postoperative view. 1, Frankfort horizontal line; 2, line intersecting soft-tissue pogonion. Z angle is 80° ± 5° degrees.

**FIG. 186-4.** Zero meridian of Gonzales-Ulloa. A: Preoperative view. B: Postoperative view. 1, Frankfort horizontal line; 2, perpendicular from nasion to (1). Chin should be at or just behind (2).
Quick chin projection

Fig 1.—In a patient with fairly normal occlusal relationship, the position of the lips will aid in determining the amount of retrodisplacement of the chin.
Occlusal Relationship

- Microgenia
- Micrognathia
- Retrognathia

Address occlusal problems first
Augmentation

- Sagittal augmentation
- Vertical augmentation secondary
- Lateral augmentation tertiary
Lower lip analysis

- Lower lip posterior to upper lip
- Chin soft tissue pad thickness
- Labiomialental fold crucial
- Caution in patients with high labiomialental fold
Chin Pad Thickness

- Soft tissue thickness of 8 to 11 mm normal
- Avoid setting back jaws with thick pads
- Attempts at setback leads to bony irregularities, soft tissue pad ptosis and an unsupported chin pad
Biomaterials

- Silicone implants inert
- Supramid - moderate foreign body reaction
- Proplast type I and type II - harder to carve
- ePTFE - less underlying bone resorption
- Porous vs. nonporous implants
Surgical Techniques

- Intraoral vs. extraoral
- Placement of implant subperiosteally
- Advantages and disadvantages
- Center the implant
- Closure in layers with pressure dressing for days
- Placement on the pogonion
Pogonion Placement and sublabial filler

Fig 4.—The placement of the implant as inferiorly as possible will augment the anteroposterior dimension as well as an increase in the vertical height.

Fig 2.—Placement of a small filler superior to the implant will result in a shallower sublabial crease.
Chin Fixation

Fig. 17: Line drawing showing possibilities of secure fixation of a chin implant at the desired position. The most common method (not shown) is permanently securing new implants to the periosteum or soft tissue at the lower border of the mandible in two places. Alternative methods include transport fixation with either sutures (above) or needles (below) to temporarily secure the implant. Note at the left side.
Complications

- Technically easy
- Size mismatch
- Malpositioned implant
- Removal of implant
- Lip numbness
Malpositioned implant

Fig. 14. Photographs of malpositioned chin implant. (Above) Right lateral photograph of patient in repose. (Below) Lateral photograph demonstrating increased visibility of implant (placed too high) when smiling. This emphasizes the need for a preoperative dynamic examination of the chin.
Implant removal

Fig. 2. Examples of chin disfigurement after removal (without replacement) of chin implants. *(Above)* Ball-like scarring present over chin pad. *(Below)* Fasciculations and contour irregularities of the chin.
Fig. 18. Line drawing demonstrating a situation in which the mental foramen may be below the chin implant or the implant may be placed too high. Leaving the implant in place when it impinges on the mental foramen will result in lower lip numbness.
Postoperative Result

FIG. 10-10. This patient had a facelift, rhinoplasty, chin augmentation, and mentor implants. A: Preoperative view, patient with flattened malar prominence and receding chin. B: Postoperative view facelift with chin implant and cheek implant. Notice the more prominent and strong chin with shallow neck jowl fold. (See Color Plates 106-10A and U.)

FIG. 10-11. This patient had chin augmentation and rhinoplasty. A: Preoperative view, patient with a nasal dorsal hump and a hypoplastic maxillary B: Postoperative view, rhinoplasty with chin implant.
Malar augmentation

- Indications for augmentation
- Aesthetics of the malar mound
- More youthful appearance
Determination of malar eminence

FIG. 186-5. A: Preoperative view. Notice the lack of malar projection; the midface appears flat. B: Postoperative view. The malar area appears full and yields a soft, youthful facial appearance.
FIG. 186-6. Constructing Silver's malar prominence triangle. **A:** Drop a vertical line from the lateral canthus. **B:** Draw a horizontal line bisecting the upper lip. The intersection of these lines forms point A. **C:** Reflect a line from point A to the medial canthal area. **D:** Reflect a line laterally from point A, creating the same angle as created in (C). **E:** Draw a horizontal Frankfort line. The area contained within the large triangle represents the malar prominence triangle and the area to be augmented by the malar implant with lateral tapering of the implant.
Hinderer’s malar eminence

Figure 1. The Hinderer crossed lines. The first line is drawn from the ala to the tragus, and the second line is drawn from the lateral canthus to the commissure. The implant is then placed in juxtaposition to the crossed lines in the upper outer quadrant.
Powell’s eminence

Figure 2. Analysis by Powell et al. A. The vertical height of the contour is at or slightly below the Frankfort horizontal plane. This line directs the midnasal line. A third line runs from the lateral canthus. A fourth line parallels the third, running through the commissure. The fourth line crossing the Frankfort horizontal plane is the location of the malar prominence. B. A line dropped vertically through the lateral canthus divides the malar region into posterior lateral and anteromedial divisions.
Figure 3. Analysis by Prendergast and O'Shaughnessy. "Looking obliquely at the tip, a line is drawn from one eye to the lateral canthus. The line of the incision down this line, a perpendicular 90° will go through the most prominent point of the nasal complex."

Figure 4. Left oblique view with subciliary incision midnasal margin. (McDermott Medical, Santa Barbara, Calif) also in practice. Careful outline of the incision is shown. Preauricular is key to permanent markings.
Implant types

- McGhan
- Binder submalar
- ePTFE
- Porous polyethylene
Operative Techniques

- Intraoral incision usually
- Elevation over zygoma
- Precise pocket
- Fixation unnecessary

Figure 10. A. Preoperative oblique view. B. Four-year postoperative malar augmentation. The patient also underwent upper and lower lip vermilion advancement.
Complications

- Malpositioned implant
- Infection
- Sizing most common complaint
- Small augmentation can be performed with ePTFE
- Silastic only used with sinus fracture