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# Revision reduction malarplasty with coronal approach

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**KEYWORDS**
Reduction malarplasty;
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**Summary** *Background:* Although reduction malarplasty is one of the most popular aesthetic surgical procedures in Asia, there have been a few reports of complications or unfavourable results. A poor understanding of the repositioning vector of the malar segment or improper fixation can result in unsatisfactory outcomes, such as non-union or inferolaterally displaced malunion of the malar complex. The authors present some revision malarplasty cases of patients with unfavourable or complicated outcomes to emphasise the importance of accurate repositioning and firm fixation of the malar complex in reduction malarplasty.
*Methods:* A total of 20 patients underwent revision malarplasty by the coronal approach after an unfavourable primary reduction malarplasty. The major complaints included cheek drooping, depression, asymmetry and overcorrection. After repositioning the inferolaterally displaced malar complex to the appropriate position and obtaining bone-to-bone contact, rigid fixation was performed with a plate and screw. The calvarian bone was grafted to the bony gap. Midface and forehead lifts were also performed when indicated.
*Results:* Most patients had satisfactory results without severe complications. Two patients required a secondary revision due to asymmetry and non-union. Three patients developed frontal palsies, which were all temporary.
*Conclusion:* Precise repositioning of the malar complex and firm fixation are essential for reduction malarplasty. The coronal approach is recommended when encountering unfavourable results or complications because it offers a wide surgical field for repositioning and fixation of the malar complex.


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**Table 1** Summary of Patients

| Case | Age (yr) | Period from last operation | Symptoms | Previous surgery | | | Follow up (mon) | Complications | Ancillary procedure |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Approach | Fixation | Osteotomy | | | |
| 1 | 38 | 8 yr | Cheek drooping | Intraoral | None | Osteotomy only | 34 | Temporary FP | Ft lift |
| 2 | 29 | 2 yr | Cheek drooping, depression | Intraoral | None | Osteotomy only | 12 | | Ft lift |
| 3 | 20 | 14 m | Cheek drooping, depression | Intraoral | None | Osteotomy only | 12 | | Ft lift |
| 4 | 30 | 5 m | Depression | Intraoral | Wire | Ostectomy | 26 | Asymmetry; secondary revision | |
| 5 | 46 | 20 yr | Cheek drooping | Intraoral | None | Osteotomy only | 6 | Seroma | Ft lift, T aug |
| 6 | 29 | 4 yr | Cheek drooping | Intraoral | Wire | Osteotomy only | 9 | | Ft lift, Rd an |
| 7 | 36 | 6 m | Cheek drooping, depression | Intraoral | None | Osteotomy only | 6 | | |
| 8 | 39 | 3 yr | Cheek drooping | Coronal | Wire | Osteotomy only | 24 | Temporary FP, cicatrical alopecia | Ft lift |
| 9 | 26 | 4 yr | Cheek drooping | Intraoral | Plate | Osteotomy only | 12 | | Ft lift |
| 10 | 20 | 3 yr | Cheek drooping | Coronal | Wire | Ostectomy | 24 | Temporary FP | |
| 11 | 23 | 6 m | Click sound with mouth opening, depression | Intraoral | None | Osteotomy only | 12 | | |
| 12 | 23 | 4 yr | Cheek drooping | Intraoral | None | Osteotomy only | 6 | Forehead contour irregularity | F imp rmv |
| 13 | 43 | 9 m | Cheek drooping, pain | Intraoral | Wire | Osteotomy only | 12 | | Ft lift, T aug |
| 14 | 32 | 10 m | Depression | Coronal | Wire | Ostectomy | 36 | Depression d/t sustained nonunion; secondary revision | |
| 15 | 24 | 18 m | Cheek drooping, pain | Intraoral | None | Osteotomy only | 12 | | |
| 16 | 35 | 7 yr | Asymmetry | Intraoral | None | Osteotomy only | 12 | Seroma | Ft lift, T aug |
| 17 | 28 | 4 yr | Asymmetry, overcorrection | Intraoral | Wire | Ostectomy | 9 | | Ft lift, M aug |
| 18 | 30 | 21 m | Cheek drooping | Intraoral | Plate | Osteotomy only | 12 | Cicatrical alopecia | Ft lift |
| 19 | 26 | 15 m | Overcorrection | Intraoral | Wire | Ostectomy | 12 | | Genioplasty |
| 20 | 28 | 13 m | Depression | Intraoral | None | Osteotomy only | 9 | | |

FP—frontal palsy
Ft lift-forehead temple lift
T aug- temple augmentation with silastic implant
Rd an-reduction mandibular angleplasty
M aug-malar augmentation with silastic implant

Reduction malarplasty is used to reshape the facial contour in an oval shape. It is one of the most popular aesthetic surgical procedures in Asia because Oriental people tend to have prominent malar complexes. Many surgical methods for reduction malarplasty have been introduced; however, most focus on shortening the surgical time and minimising the fixation points by minimal incisions or green stick osteotomy.[1–7] There have been few reports of its complications or unfavourable results.

Reduction malarplasty does not mean simply reducing the zygoma; rather, it means to reposition the malar complex to its most aesthetic position. The malar highlight needs to be placed superomedially to obtain a youthful and attractive midface.[8] However, unfavourable results can be encountered if the superior vector is not considered during repositioning, particularly in elderly patients who tend to present with midface sagging. Moreover, without appropriate fixation, non-union or inferolateral displacement of the malar complex can occur due to masseter muscle action,[9] which may lead to complications, such as malar depression or cheek drooping.

Therefore, the authors emphasise the importance of precise repositioning and fixation of the malar complex through our experience of revision reduction malarplasty using the coronal approach in unfavourable or complicated cases.