

Camouflaging the Posterior Zygomatic Arch Protrusion After Zygoma Reduction Surgery

Jae Hyun Park, MD; and Jae Seong Moh, MD

Aesthetic Surgery Journal
32(5) 661–664
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DOI: 10.1177/1090820X12448816
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Zygoma reduction is a very common procedure for Asian patients. Usually, the procedure is undertaken in such a way that the zygomaticotemporal suture area is fractured in and pushed medially. In carrying out this procedure, dissection is avoided within approximately 1 cm posterior to the zygomatic arch, due to the possible impairment of the temporomandibular joint space during osteotomy, especially cases where the posterior portion of the zygoma protrudes further than the frontal and middle portions. Since protrusion of the posterior portion of the zygomatic arch is not reduced with the operation, the transverse facial width of the cheek will remain unchanged, and thus there is a high possibility for a remaining step deformity at the osteotomized part of zygomaticotemporal suture. This has been discussed as a limitation of zygoma reduction surgery.

We believe in reducing the transverse width of the face even in these cases by covering the protruding area of the posterior zygomatic arch through a single hair graft method. This method was used in 16 outpatient procedures between 2009 and 2011. All patients presented with postoperative arch protrusions that remained after initial zygomatic reduction at other clinics. All of these patients were women, and their average age was 29.4 years. The patients presented for correction an average of 3.4 years after initial surgery. Only patients who had protrusion of the posterior zygomatic arch—documented through clinical photos and palpation—were treated with this technique.

First, we preoperatively confirmed protrusion of the posterior zygomatic arch at the rear side of the osteotomy area by palpating the front and the lateral sides. The goal of the operative design was to cover the protrusion; a round-shaped frontal hairline was designed for the infratemple area. Vertical markings were made for the osteotomy line and the posterior-protruding zygoma. The anteriormost point of the temporal peak area (Point T) and the starting point of the sideburn (Point A) were connected with an imaginary linear line. A slightly concave, rounded line was drawn to connect Point T and Point A, in an effort to yield a natural appearance (Figure 1). If Point T is recessed posteriorly, the temporal peak area should be reshaped by advancing Point T anteriorly. Point A can be advanced 3 to 4 mm anteriorly without affecting

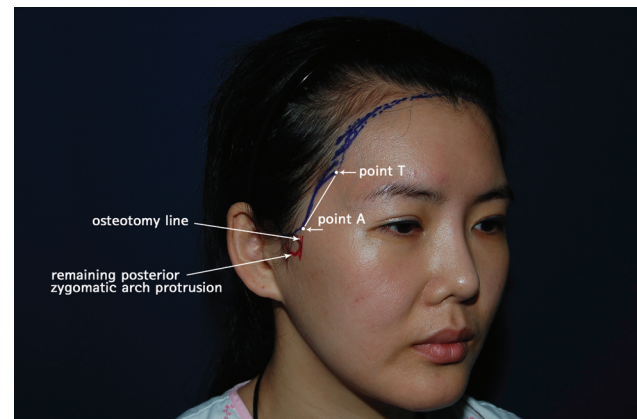


Figure 1. This 34-year-old woman had undergone zygoma reduction surgery 3.4 years before presenting to our clinic. She complained about the remaining posterior zygomatic arch protrusion, which left her with a wide and M-shaped forehead. Her preoperative markings are shown.

the aesthetics of the area if the hair graft is placed successfully (Figure 2).

Each donor area was marked as an ellipse in the occipital area, with the patient in a prone position. Local anesthesia was infiltrated with a 1:100,000 epinephrine and lidocaine mixture. An incision was made with a No. 15 blade at an angle parallel to the direction of the hair, taking care not to cause any damage to adjacent hair follicles. The upper layer of galea was also dissected very carefully to avoid injury to hair follicles, and the donor strip was harvested. The area was closed with 3-0 nylon sutures, without tension. The harvested donor scalp was dissected into follicular units under a microscope. All dissected hairs were divided into 4 groups: thin, velus-like single hairs; thick 1-hair plugs; 2-hair plugs; and 3- to 4-hair plugs. Thin, velus-like, single-hair plugs were placed in the infratemple area to cover the posterior zygomatic protrusion and to construct several

Dr Park and Dr Moh are plastic surgeons in private practice in Seoul, Korea, and members of the Korean Society for Aesthetic Plastic Surgery.

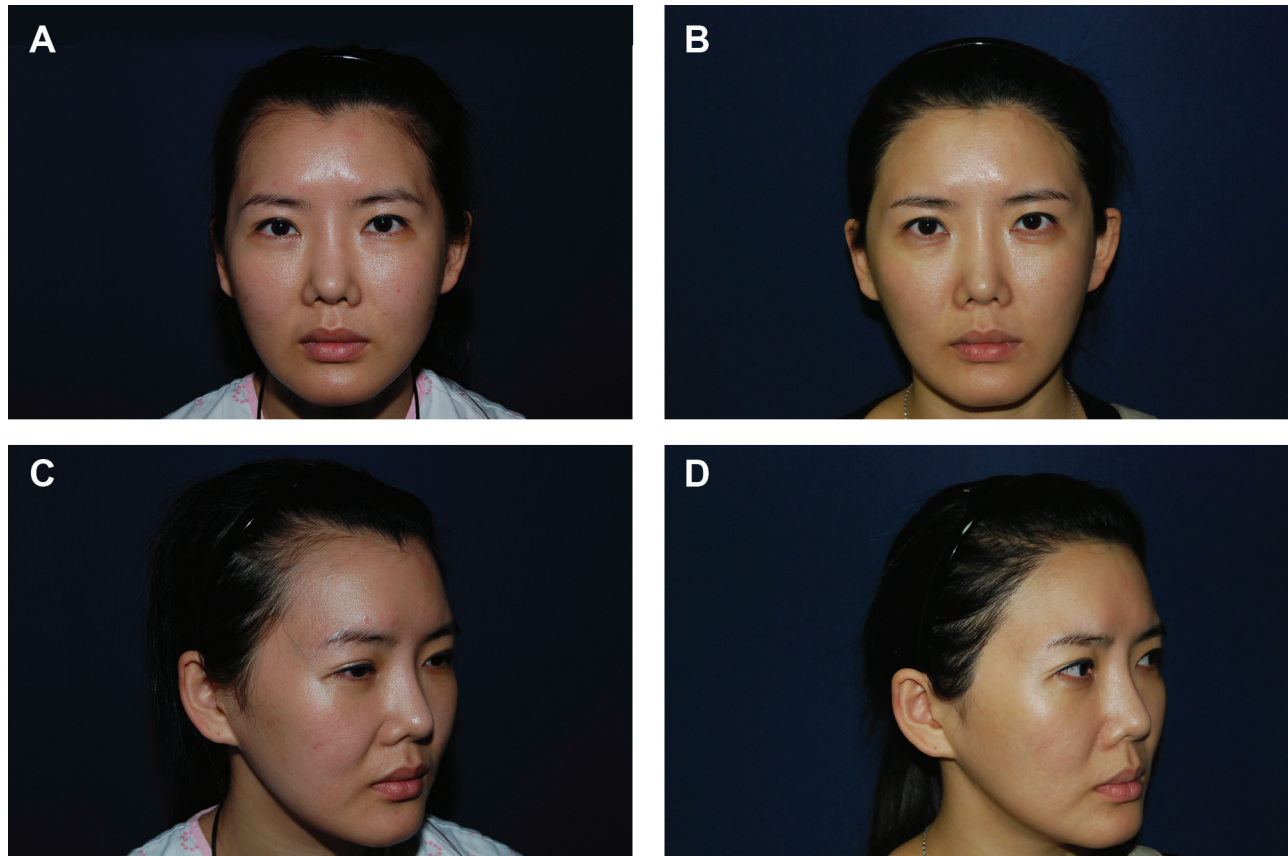


Figure 2. (A, C) The 34-year-old woman featured in Figure 1 is shown preoperatively. (B, D) Thirteen months after a 1600-graft transplantation, the horizontal width of the patient's zygomatic area was effectively reduced by camouflaging with hair transplantation.

protruding peak zones in the frontal hairline for a natural appearance. The thick 1-hair areas were transplanted into the transition zone, and 2- to 3-hair donor plugs were placed in the remaining posterior portion of the transition zone. With 1-hair sections implanted in the infratemple area, the insertion angle was as acute as possible (close to the skin surface). Also, special care was taken to follow the direction of existing hair of this area. From Point T to Point A, there is gradual change of direction from horizontal to vertical. Especially around Point A, the insertion direction should be controlled very precisely, 2 to 3 degrees posteriorly from vertical angle, to yield a natural appearance. In all patients, the transverse width of the posterior zygoma area was effectively reduced on frontal view, and a cosmetically-satisfactory result was achieved. There were no cases of reoperation or asymmetries (Figure 3).

In terms of other literature on this procedure, Jung et al¹ first introduced a classification of Asian women's hairlines and described a correction method in detail in 2011. The technique of zygomatic reduction was first introduced by Onizuka et al in 1983.² Since then, zygomatic reduction has been conducted by many surgeons in a various ways.³⁻⁶ However, the temporozygomatic suture area in the posterior zygomatic arch cannot be reduced due to the temporomandibular joint space, so if the posterior zygomatic arch is more protracted than the zygoma at the anterior middle parts, satisfactory results can rarely be achieved. In these cases, facial width is not satisfactorily reduced, and a step deformity remains even after zygomatic reduction surgery. Our method, which is effective and simple, accomplishes the same result as reducing the protracted part of the posterior zygomatic arch by covering the area with a single hair graft.

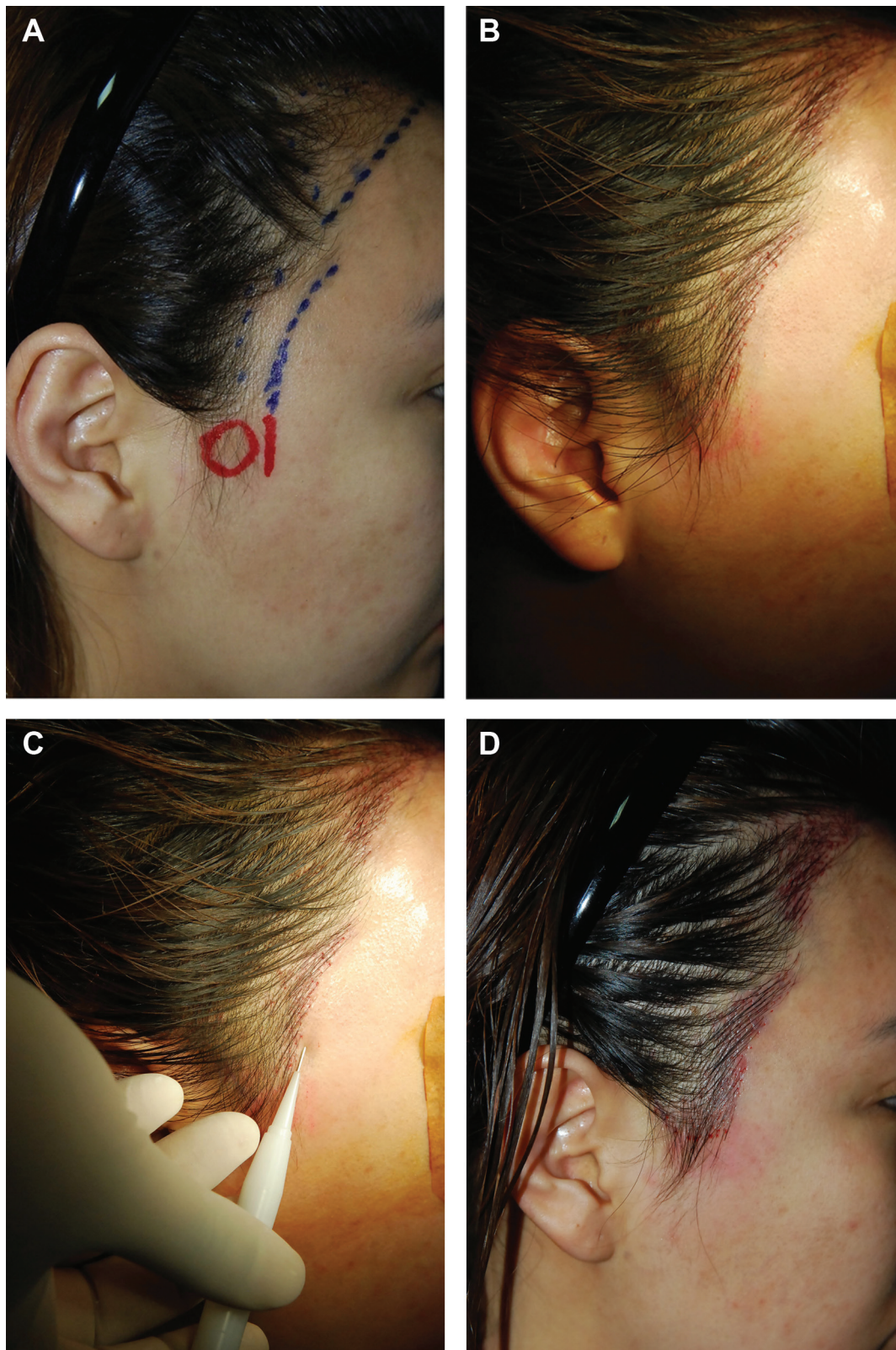


Figure 3. This 35-year-old woman had undergone zygoma reduction surgery 16 months before presenting to our clinic. She complained about the remaining posterior zygomatic arch protrusion. (A) The patient's preoperative markings are shown. (B) A thick, single hair is placed in the transition zone. (C) A thin, single-hair transplant is carefully placed in front of the transition zone with an implanter tool. (D) The patient is shown immediately posttransplant.

Disclosures

The authors declared no potential conflicts of interest with respect to the research, authorship, and publication of this article.

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