Maxillary Sinusitis After Reduction Malarplasty

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Abstract: Reduction malarplasty for making an oval facial shape is a popular procedure in Asia. However, a range of complications after malarplasty have been reported, including hematoma, orbital complications, asymmetric face, and depression of the chin. Fixation can be incomplete and the osteotome can penetrate the sinus during surgery due to the narrow surgical field, which can result in sinusitis caused by bony fragments after malarplasty. However, there are no reports of sinusitis caused by bony fragments after malarplasty. The authors report 2 cases of chronic sinusitis caused by displaced bony fragments after reduction malarplasty.

Key Words: reduction malarplasty, sinusitis

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CASE 1

A 25-year-old female patient, who received reduction malarplasty using an intraoral incision alone and augmentation rhinoplasty 1 year earlier, visited the clinic due to a foul odor and episodic purulent rhinorrhea of 6 months duration. At the time of her visit, she had neither facial asymmetry nor facial edema. However, she suffered from a posterior nasal drip and tenderness of the right anterior face. Nasal endoscopy revealed mucopurulent rhinorrhea in the right middle meatus. Computerized tomography (CT) of the paranasal sinus revealed significant opacification of the right maxillary sinus, with high density areas in the sinus cavity resembling bone fragments. A bony defect in the lateral maxillary sinus wall was also seen (Fig. 1).

Under general anesthesia, we approached the lesion endoscopically through the middle meatus of the nasal cavity. After resection of the uncinate process, we could see the natural ostium of the maxillary sinus. After we had widened the ostium, we could see the unidentified thin and sharp bony fragments in the antrum. Under direct vision through a 30-degree endoscope, the bony fragments were removed from the maxillary sinus with curved grasping forceps. The maxillary sinus was inspected with a 70-degree endoscope, and no other foreign body was observed in the antrum. The mucosa of the maxillary sinus was markedly swollen with a purulent discharge. After removing 7 fragments, the cavity was irrigated with saline solution. A pathology study of the foreign body confirmed it to be bone (Fig. 2A). After surgery, all previous symptoms disappeared. Endoscopy performed 18 months after surgery showed no signs of mucosal inflammation. The patient is currently under observation.

CASE 2

A 32-year-old woman presented with facial swelling of 3 months duration. She complained of rhinorrhea and a postnasal drip. A physical examination revealed swelling of left zygomatic area and purulent rhinorrhea in the left nasal cavity. Malarplasty using an intraoral incision alone was performed 3 months prior to the patient’s visit. Nasal endoscopy revealed mucopurulent rhinorrhea in the left nasal cavity. Computerized tomography revealed prominent maxillary sinus opacification, with bone-like high density areas. Bony defect of the left lateral maxillary wall was also observed (Fig. 3).

The surgical procedure was similar to case 1. After widening the ostium, unidentified thin and sharp bony fragments were observed in the antrum. The bony fragments were removed under direct vision through a 30-degree endoscope. The maxillary sinus was inspected with a 70-degree endoscope, and no other foreign bodies were observed in the antrum. The mucosa of the maxillary sinus was markedly swollen, with a purulent discharge. After removing 2 fragments, the cavity was irrigated with saline solution. A pathologic study of the foreign body confirmed it to be bone (Fig. 2B). After surgery, all previous symptoms disappeared. Endoscopy performed 12 months after surgery showed no signs of mucosal inflammation. The patient is currently under observation.

DISCUSSION

There are various approaches for malar reduction, such as a surgical method using a bicoronal incision, an intraoral incision alone, and a combined approach using both the intraoral and the external (preauricular or temporopreauricular) incision.1,2 When using a bicoronal incision, more accurate movement and fixation of the malar complex are possible because of the larger surgical field, compared with the intraoral approach. However, the long surgery time and patients’ refusal of a full incision in the scalp have made intraoral incision more popular. The intraoral approach has technical weak points, such as a difficult osteotomy and fixation due to the narrow surgical field. When using the intraoral approach, most of the fixation is achieved by 1 miniplate on a zygomaticomaxillary buttress.3–4 However, sometimes, only 1 wire loop is used for fixation, and no fixation is performed in greenstick fracture methods.5–8 These procedures have problems, such as limited exposure. Therefore, cheek drooping, orbital deformity, soft-tissue descent, facial contour asymmetry, restriction in jaw movement, inferior orbital nerve paresthesia, facial nerve injuries, and malunion can occur as complications of reduction malarplasty.9–11
If the surgeon is relatively inexperienced, performing only a greenstick fracture on the outer cortex with no fixation will lead to a displacement of the fractured bone into the maxillary sinus and an injury to the inner sinus mucosa. This bony displacement and injury to the inner sinus mucosa can induce sinusitis, which can cause symptoms, such as posterior nasal drip, purulent rhinorrhea, and facial swelling.

Malarplasty, especially using only intraoral incision (such as in our 2 cases), may increase the possibility of maxillary sinusitis because of a difficult osteotomy and fixation due to the narrow surgical field.

We present findings that suggest that an inappropriate greenstick fracture and no fixation in a malar reduction can lead to maxillary sinusitis due to displaced fractured bone and damage to the maxillary sinus mucosa. Therefore, careful consideration of an accurate osteotomy and fixation, especially when using only the intraoral incision such as in our 2 cases, will be needed to prevent such complications.

REFERENCES