Modified Nasal Vestibule Packing With Airway Preservation

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Although well-known textbooks on rhinoplasty describe internal nasal splinting as a routine procedure, the literature lacks overall consensus concerning whether nasal splinting is appropriate after septorhinoplasty. Malki et al concluded that intranasal splinting may be indicated for enhancing the septum's stability following septoplasty. It also has been demonstrated that Doyle intranasal splints (Medtronic, Minneapolis, Minnesota) with an airflow tube influence neither the incidence of postoperative complications nor patient comfort or breathing ability compared with intranasal packing; in fact, we have been using these paired devices routinely for severe septal deviation and reconstruction.

We have found, however, that Doyle splints are usually ineffective at the level of the nasal vestibule when lower alar cartilages are transposed or reconstructed with grafts. In such situations, the vestibular skin is undermined—usually partially and sometimes almost completely—from the lower lateral cartilages (LLC) during open septorhinoplasty (Figures 1 and 2). At the surgery’s conclusion, good contact between the LLC and underlying skin must be ensured for smooth adherence and prevention of dead spaces at the level of the soft-tissue triangle. This cannot be guaranteed solely by placing separate sutures along the alar rim and columella. A potential solution would be additionally packing the vestibule over the intranasal splints, but this maneuver also would cover the airway tubes and completely eliminate nasal breathing—an outcome patients would tolerate with extreme difficulty. However, nasal packing combined with an airway tube has been demonstrated to allow partial breathing, thus preventing respiratory dysfunction and hypoxia. In this letter, we describe a simple method to preserve the airway when vestibular packing is placed, a technique applied in 42 patients thus far.

At the conclusion of septorhinoplasty, when vestibular skin is being undermined, Doyle intranasal splints are introduced into the nasal cavity in typical fashion and affixed with transseptal 4-0 nylon sutures. Following this, a soft, kink-resistant medical infusion tube (4 mm internal diameter) is tightly introduced inside the intranasal splint's airway tube as deep as 3 cm, with the remaining 2 cm left outside. In cases of limited or no septal cartilage resection, we use a modified Doyle splint, narrowing the splint from 2.5 cm (its widest part) to 1.6 cm and shortening its length from 7 cm to 4.5 cm (Figure 3). With these adjustments, the splints accommodate the infusion tubes, and tube removal is less bothersome for the patient.

To prevent inhalation, the infusion tube is secured externally by placing Omnistrip (Paul Hartmann AG, Heidenheim, Germany) around its circumference. Packing is applied...

Figure 1. This 25-year-old woman’s vestibular skin is undermined completely from the lower lateral cartilages.
around the infusion tube by loosely placing cotton gauze (Tampograss; Paul Hartmann AG) infused with antibacterial ointment (Figure 4). It is important to avoid excessive pressure on the vestibular skin as well as distortion of the reconstructed lower lateral cartilages. To prevent airway tube obstruction by mucus and clots, irrigation (2-3 mL of isotonic saline solution) and then aspiration are performed. After aspiration, 2 drops of vitamin A oil are introduced into the external tube to prevent crust formation. This irrigation followed by aspiration is repeated every 6 hours during the patient’s hospital stay. Patients are discharged 24 to 48 hours after surgery. Packing from around the vestibule and airway infusion tubes (with modified Doyle splints) is easily and painlessly removed 24 hours postoperatively, leaving a clean and less swollen vestibulum. For patients who undergo septal reconstruction, Doyle intranasal splints are kept in place for 2 additional days.

To date, we have used this technique in 42 patients (84 tubes). Thirty-two patients were women, and the overall age range was 20 to 54 years (average, 27 years). Within this series, 12 tubes (15.47%) became completely obstructed; the cause of obstruction in 2 cases was blood clots and, in the other 4, crust formation. In the other cases (72 tubes), adequate air flow through the tubes was noted at 24 hours.

The patients with blocked tubes experienced greater discomfort because of difficulty breathing. Despite this, they were able to retain the packing for up to 24 hours postoperatively, likely because prior to surgery, they were accustomed to breathing through the mouth. However, 1 patient attributed panic attacks 5 hours after surgery to the inability to breathe through the nose; both infusion tubes had been blocked. We removed the patient’s infusion tubes and packing, leaving only the Doyle splints intact. The patient reported improved breathing and did not experience any additional panic attacks while the Doyle splints were in place. Hence, this method of intranasal packing should be applied with caution in patients who have panic attacks; extra care should be taken to prevent tube obstruction in such cases.

This simple technique has proven useful in select cases in which vestibular skin is undermined for alar cartilage transposition, in lateral and/or middle crural overlay, or in lateral alar reconstruction with strut grafts. In these cases, light packing helps the vestibular skin to adhere to the LLC, thus preventing hematoma formation, webbing, retraction, and mucosal irregularities. The method is also useful in cases of scarred mucosa after previous rhinoplasty or when composite grafts are used from concha for retracted ala. Nasal packing for 24 hours postoperatively sustains vestibular skin close to the cartilage until the fibrin layer is formed, while simultaneously stabilizing the reconstructed alae.

Vestibular packing is seldom discussed in the literature. This may be due to the current tendency not to use any
packing or splints in an effort to maximize patients’ postoperative comfort. In some cases, however, such as complex septal and alar reconstructions, the patient’s comfort should be balanced with the need to achieve an effective and stable postoperative result.

In conclusion, this method of vestibular packing is an effective adjunct to Doyle nasal splints. It is simple, inexpensive, relatively painless, and easily tolerated by patients.

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

REFERENCES