



## GUIDELINES

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- Text—maximum of 500 words (not including references)
- References—maximum of five
- Authors—no more than five
- Figures/Tables—no more than two figures and/or one table

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## Viewpoints

### Treatment of Nipple-Sparing Mastectomy Necrosis Using Hyperbaric Oxygen Therapy

*Sir:*

**E**vidence supporting the oncologic safety of nipple-sparing mastectomy has increased its use exponentially over the past decade. However, the greatest benefit of the technique—preservation of the nipple-areola complex and entire breast envelope—is also the source of the most complications. With the majority of reconstructions nationally still implant-based, mastectomy flap necrosis risks implant exposure, compromises the final aesthetic outcome, and complicates definitive reconstruction.<sup>1</sup> Conservative topical wound management therapies offer limited benefit.

In isolated cases of threatened mastectomy flaps following nipple-sparing mastectomy, patients have been referred to our hyperbaric oxygen therapy program in an attempt to salvage the reconstruction. Hyperbaric

oxygen therapy has been used for threatened skin grafts or flaps, osteoradionecrosis, chronic refractory osteomyelitis, diabetic ulcers, and other conditions.<sup>2</sup> Using a closed chamber with an elevated internal atmospheric pressure and oxygen concentration, the partial pressure of oxygen in tissue can be increased. Patients return for a set number of treatments, depending on the indication.

Figure 1 demonstrates images of a healthy, nonsmoking, nondiabetic, 31-year-old woman who underwent bilateral prophylactic nipple-sparing mastectomies with tissue expander and acellular dermal matrix reconstruction. The patient developed mastectomy flap necrosis with tissue expander deflation on postoperative day 2 (Fig. 1, *left*). She was referred to our center for 30 treatments in the hyperbaric oxygen chamber at 2.0 atmospheres for 90-minute sessions. Figure 1, *right* demonstrates the result 6 weeks later. Using hyperbaric oxygen therapy alone, the patient's mastectomy flaps healed.

Increasing comfort with nipple-sparing mastectomy has broadened its indications. Patients with prior breast irradiation and larger, more ptotic breasts now are being offered the procedure.<sup>3,4</sup> Performing this higher risk procedure in higher risk patients will likely lead to increased complication rates. Hyperbaric oxygen therapy is a noninvasive, generally well-tolerated available therapy that can mitigate the consequences of mastectomy and nipple-areola complex necrosis following nipple-sparing mastectomy. It should be considered and used in instances of necrosis.

DOI: 10.1097/PRS.0000000000001229

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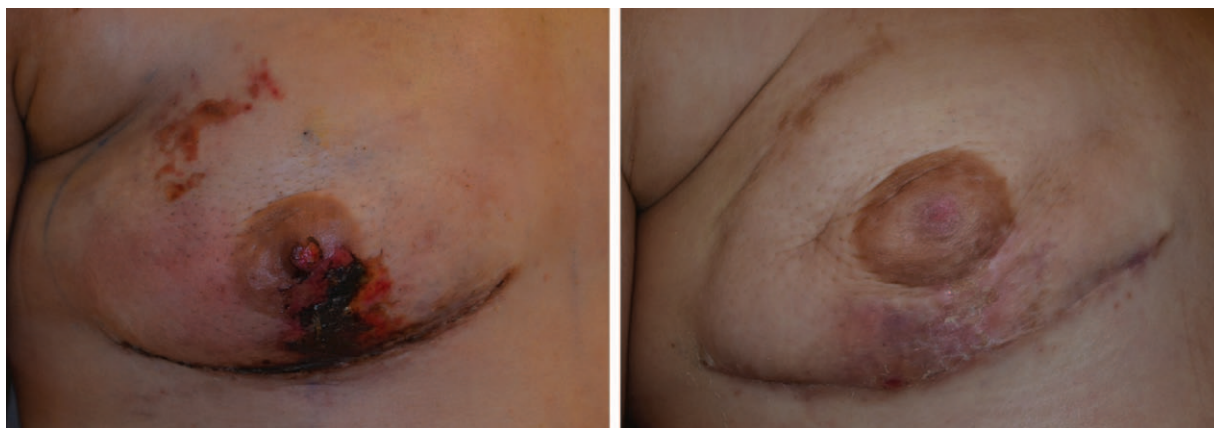
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## DISCLOSURE

*The authors have no financial interest to declare in relation to the content of this communication.*

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**Fig. 1.** A 31-year-old woman following bilateral prophylactic nipple-sparing mastectomy with tissue expander and acellular dermal matrix reconstruction. The patient developed postoperative right nipple-areola complex and mastectomy flap necrosis (left) followed by 30 treatments of hyperbaric oxygen therapy with nearly complete healing of her breast envelope and nipple-areola complex (right).

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### The Rib Graft Rhinoplasty: Anchoring the Extended Columellar Strut

**Sir:**

The use of an osseocartilaginous rib graft for structural augmentation of the nasal dorsum and tip has been widely described. To maintain lasting stability and tip control, it is necessary to control the caudal end of the graft at the level of the anterior nasal spine. In this regard, the classic cantilever construct is often supported caudally by cartilaginous support: the extended columellar strut.

Fixation of the base of the columellar strut is crucial for maintaining tip control. Drill hole and suture or Kirschner wire fixation techniques have been described previously.<sup>1</sup> These techniques risk weakening the cartilage and/or warping the graft, along with technically challenging suture placement. Here we describe a simple, novel technique to secure the base of the extended columellar strut to the anterior nasal spine without grossly compromising the integrity of the graft.

The nasal cartilages were exposed through an open technique and a rib graft construct designed as described previously.<sup>2</sup> A mortice joint secured the

cartilage framework at the nasal tip. Cranially, the osseocartilaginous rib graft construct was placed subperiosteally over the nasal bones. For placement of the extended columellar strut, a pocket was made between the medial crura down to the anterior nasal spine. A Micro QuickAnchor (DePuy Mitek, Inc., Raynham, Mass.) was placed in the anterior nasal spine just lateral to the maxillary midline to preserve the incisive foramen. In some cases, the apex of the anterior nasal spine was trimmed to enable better fixation of the Micro QuickAnchor. The columellar strut was secured with a simple interrupted suture using the preloaded 4-0 Ethibond suture (Ethicon, Inc., Somerville, N.J.). Then, 5-0 Prolene (Ethicon) mattress sutures were used to secure the medial crura footplates to the extended columellar strut (Fig. 1). The nose was then closed in the traditional fashion. We have found that this technique provides a stable construct with excellent tip support achieved through secure fixation and control of the nasal base with excellent long-term stability.

DOI: 10.1097/PRS.0000000000001231

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