study, the authors introduce the utilization of alar pinning with the external halo distractor for maxillary advancement, in place of an oral splint. Fixation sites within the alar crease allow for maxillary advancement while minimizing the visibility of pin site scars. They also eliminate the need for a custom-made oral splint, which prevents the patient from using the upper dentition and also frequently requires the consultation of a dentist or orthodontist for fabrication.

Seven patients successfully underwent distraction osteogenesis utilizing this technique. Midfacial hypoplasia was secondary to either Crouzon syndrome (n=4), Apert’s syndrome (n=1), Pfeiffer syndrome (n=1), or bacterial meningitis (n=1). Three patients were managed with monobloc osteotomies, two with Le Fort III osteotomies, one with Le Fort III osteotomy and frontoorbital advancement, and one with Le Fort I osteotomy alone.

Two out of the seven patients had minor complications specifically related to the alar pins. One patient had concern for a mild skin infection at a pin site that resolved with oral antibiotics and the other patient had loosening of an alar pin which did not require operative management. Retrospective chart review indicated that all patients were pleased with their results from the distraction and no patients opted for further advancements.

**CONCLUSION:** Utilization of alar pin sites for external distraction is a feasible and reasonable option for treatment of midfacial hypoplasia involving a Le Fort osteotomy or monobloc procedure. This technique eliminates the need for an intraoral splint, which can be cumbersome in both application and postoperative care.

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**Intermittent Irrigation of the Microvascular Anastomosis Site During the Critical First 72 Hours**

**Mouchammed Agko, MD; Pedro Ciudad, MD, PhD; Federico Lo Torto, MD; Oscar Javier Manrique, MD; Hung-Chi Chen, MD, PhD**

**INTRODUCTION:** Although up to 99 percent of free tissue transfers are eventually successful, the rate of reexploration necessary to achieve this is still high despite advances in technique and monitoring.1 We explore the benefits of intermittent postoperative irrigation of the microvascular anastomosis site with lidocaine.

**PURPOSE:** To share our experience with a simple, safe and effective technique that can be easily adopted at minimal cost.

**RATIONALE:** Blood, vascular manipulation, stretching, hypothermia, vasopressors, increased catecholamine states are some of the local and systemic factors that can lead to vasospasm of both artery and vein. While up to 94 percent of plastic surgeons use an intraoperative vasodilator to counteract this, little has been reported on postoperative use of vasodilators.2,3,4 The vasospasm-inducing noxious stimuli may persist in this period and lead to a cascade of events culminating in flap compromise. Studies have shown that the first 72 hours are the critical period during which overwhelming majority of compromised flaps are recognized.5

**TECHNIQUE:** The cut end of an intravenous catheter tube is placed in close proximity to the anastomosis avoiding direct contact. The other end of the tube is brought out through the wound edge, fixed to the skin with non-absorbable suture and connected to a 10-milliliter syringe filled with one percent lidocaine. The nurse infuses slowly one milliliter every hour amounting to a total of 240 mg of lidocaine per day. The catheter is removed after 72 hours.

**RESULTS:** The senior author has used this technique in 3698 cases (50 percent of which involved lower extremity reconstruction) over the past 25 years. The 6.6 percent rate of re-exploration corroborates with published literature. None of the cases requiring reexploration demonstrated any evidence of vasospasm. Decreased pain and opioid requirements was an expected favorable outcome. However, an unexpected benefit noted early in the series was the cleansing effect of the gentle irrigation, removing small collections of blood, exudate or saliva from the vicinity of the anastomosis site. No inadvertent disruption of the anastomosis, increased bleeding or systemic sign of lidocaine toxicity was identified.

**CONCLUSION:** A simple intraoperative measure can not only minimize the risk of a potentially disastrous vasospasm, but also provide the additional benefits of better pain control and clean microvascular anastomosis site.

**DISCLOSURE/FINANCIAL SUPPORT:** None of the authors has a financial interest in any of the products, devices, or drugs mentioned in this manuscript.
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Assessment of Nursing Deficiencies in the Postoperative Care of Microsurgical Patients

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BACKGROUND: Close monitoring is crucial following successful flap surgery. Ideally, all patients undergoing microvascular reconstruction should be evaluated in a dedicated unit with specialized nurses; however, this is not always possible and there is often a varied skill mix of nursing staff. The purpose of this study was to identify deficiencies in microsurgical education among nursing staff in an effort to target future educational efforts.

METHODS: A 22-question electronic survey was sent out to all nursing staff at three sampled hospitals that manage microsurgical patients. Statistical analysis was performed to identify factors that predicted aptitude, comfort, and deficiencies in the treatment of microsurgical patients.

RESULTS: Of the 160 registered nurses sampled, 106 completed the survey completely (66%). A total of 59 nurses worked at a tertiary care academic institution (55%) and the remaining 47 nurses worked at one of two community hospitals (45%). Regardless of whether the provider self-identified as a critical care or floor nurse, nurses from an academic medical center were significantly more comfortable with their ability to care for microsurgical patients when compared with their community medical center counterparts (p < 0.05). Furthermore, regardless of whether the provider self-identified as a critical care or the hospital setting where they worked, nurses with greater than 5 years of experience were significantly more comfortable with their ability to care for microsurgical patients when compared with nurses who had less than 5 years of experience (p < 0.05).

There was no correlation with comfort level and the ability to interpret various postoperative flap-monitoring technologies between intensive care unit nurses and floor nurses.

CONCLUSIONS: We have identified that nurses with less than 5 years of experience or nurses in a community setting may be less comfortable with the care of postoperative microsurgical patients, especially if newer flap monitoring technologies are employed.

Three Alternatives for Head and Neck Reconstruction in the Absence of Recipient Vessels

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INTRODUCTION: Head and neck reconstruction in the context of previous irradiation or recurrence after previous ablation and reconstruction poses a difficult problem. Extending the vascular reach with use of vein grafts is commonly employed in an attempt to circumvent the absence of readily available recipient vessels.

PURPOSE: Explore the benefits and limitations of three reconstructive options that can provide a reliable alternative in this challenging situation.