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

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**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.

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