



Shorter Interval before Flap Division: Flap Success with Potential Benefit: A Report of 3 Cases and Review of the Literature

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Short Communication

Interpolation flaps in cutaneous surgery have historically been performed by dividing the vascular pedicle at three weeks. While many surgeons prefer three weeks due to fear of flap failure with earlier division, the presence of the intact pedicle increases patient wound care burden and risks multiple subsequent revisions. We present three patients who underwent flap division at around two weeks and propose that flap division at two weeks offers benefits in both patient quality of life and cost while allowing for adequate neovascularization and graft survival.

Patient 1 was a 62-year-old female with a melanoma in situ of the nasal tip. The tumor was cleared with one stage of Mohs Micrographic Surgery (MMS) and the final defect was repaired with a paramedian forehead flap (Figure 1). At seventeen days, the patient underwent division and insertion of the pedicle flap. At her 2 month follow up, the flap was found to have healed with minimal deformity (Figure 2). Patient 2 was a 67-year-old male with an infiltrative basal cell carcinoma of the right nasal ala. The tumor was cleared with seven stages of MMS and the final defect was repaired with a nasolabial interpolation flap and a cartilage strut (Figure 3). The patient underwent division and insertion of the pedicle flap at fourteen days. At his 6 week follow up, the patient was pleased

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Figure 1: Patient 1 immediately after paramedian forehead flap. Verbal and written patient consent for photographs obtained at time of surgery.



Figure 2: Patient 1 two months after surgery. Acceptable contour and color was noted in the flap.



Figure 3: Patient 2 immediately after nasolabial interpolation flap. Verbal and written patient consent for photographs obtained at time of surgery.



Figure 4: Patient 2 six weeks after surgery.

with the final cosmetic appearance (Figure 4). Patient 3 was a 48-year-old male with a well differentiated squamous cell carcinoma of the right nasal ala. The tumor was cleared with two stages of MMS and the final defect was repaired with a nasolabial interpolation flap and a cartilage strut. The patient underwent division and insertion of the pedicle flap at thirteen days.

Robust studies evaluating cutaneous interpolation flaps used in dermatologic surgery are lacking. Based on clinical experience, axial flaps have traditionally been divided at three weeks to ensure

adequate neovascularization between donor and recipient sites. On the other hand, ligating the pedicle too early could risk insufficient neovascularization of the flap to the wound bed that could result in ischemia, vasoconstriction, and ultimately flap failure [1]. While the typical interval of three weeks may increase the surgeon's confidence of flap survival after pedicle separation, unnecessary delay in division can have negative effects. Delayed division increases the patient's wound care burden and discomfort. In reviewing the outcomes of pedicle flaps performed at our institution, there is also a risk for excessive granulation tissue formation at three weeks that could result in multiple subsequent revisions and a decrease in patient convenience and satisfaction. Additionally, multiple iterations of thinning of the distal flap during subsequent revision can result in an increased metabolic demand thus decreasing flap survival [2].

We suggest division at two weeks as an ideal interval that allows for adequate neovascularization while minimizing patient inconvenience. There are several potential benefits of this shorter interval. Pedicle division at two weeks reduces patient inconvenience by limiting wound care burden and downtime from work or social activities. We have also found comparable or improved cosmesis of the final wound based on our three patients. In conclusion, we present three patients who underwent interpolation flaps in which pedicle division was reduced to around two weeks with success. We noted an increase in patient satisfaction, a decreased wound care burden, and acceptable cosmesis. We recommend future studies to provide clinical evidence for the timing of flap division.

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