Endoscopic-Assisted Radial Forearm Free Flap Harvest: Long-Term Results, Complications, and Patient Satisfaction

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PURPOSE: Endoscopic-assisted radial forearm free flap (ERFFF) harvest was previously described by the authors aimed to decrease donor site morbidity. Now, with increased sample size and duration of follow up, long-term ERFFF outcomes were examined and compared to traditional radial forearm free flap (RFFF) harvest outcomes.

METHODS: A retrospective cohort study was conducted evaluating patients who underwent ERFFF or RFFF by a single surgeon for head and neck reconstruction between 03/2012 and 12/2015. Data recorded includes patient characteristics, duration of harvest, methods of donor site reconstruction, and postoperative complications.

A telephone survey was conducted to obtain patient-reported outcomes, excluding patients within six months of surgery. Donor site appearance was assessed with four questions regarding associated distress and/or embarrassment, effect on choice of clothing, desire for a more normal appearance, and overall satisfaction with appearance. Functional deficit was assessed with four questions regarding associated discomfort, changes in strength and/or flexibility, numbness, and cold-sensitivity. Overall satisfaction was also assessed.

RESULTS: Twenty ERFFFs and 13 RFFFs were performed to reconstruct patients ranging 22 to 79 years old. Mean endoscopic pedicle harvest was 22.67 minutes, with mean subsequent flap harvest 76 minutes. Mean traditional RFFF harvest was 104 minutes.

20% of ERFFF patients had donor site-related complications compared to 53.9% of RFFF patients (p=0.065). In the ERFFF group, 15% of patients had numbness on clinical exam, 5% had graft loss, and no patients had wound healing complications, tendon exposure, or complex regional pain syndrome; in the RFFF group, 30.8%, 7.7%, 15.4%, 7.7%, and 7.7% of patients had these complications respectively. Mean length of follow up was 106.3 and 238.5 days, respectively.

Telephone surveys were attempted among 15 ERFFF patients and 11 RFFF patients, with response rates of 66.7% and 54.5% respectively. Scores were converted to percentages for comparison; higher scores represented better outcomes. The ERFFF group had a mean cosmetic score of 85% compared to 70.8% in the RFFF group (p=0.2084), a mean functional score of 62.5% compared to 45.8% (p=0.2073), and a mean total score of 75.6 compared to 63% (p=0.1307).

CONCLUSIONS: ERFFF is a safe and effective technique with decreased donor site morbidity and similar operative time. Patient-reported outcome scores suggest improved satisfaction compared to RFFF; a larger sample size is required to improve power of analysis.