Evaluation of Complications Associated with Flap/Pedicle Inset Techniques for Unilateral Breast Reconstruction Utilizing Dual Transverse Upper Gracilis (TUG) or Profunda Artery Perforator (PAP) Flaps

Teresa Buescher, MD; Wojciech H. Przylecki, MD; Julie Holding, MD; Chaz Hendrix, MD; Richard Korentager, MD; Niaman Nazir; Brian T. Andrews, MD

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INTRODUCTION: Patients with large breasts are often the most difficult to reconstruct utilizing free tissue transfer after mastectomy. This is especially true when suitable abdominal tissue is unavailable. These subjects often require two simultaneous free flaps to provide adequate tissue.[1,2] This study provides a review of our experience and lessons learned utilizing unilateral dual free tissue transfer with transverse upper gracilis (TUG) or profunda artery perforator (PAP) flaps.

METHODS: A retrospective chart review was performed. All subjects undergoing dual free flap reconstruction for unilateral breast reconstruction utilizing non-abdominal tissue were included. Subjects were grouped as follows based on flap inset and pedicle anastomosis: Group 1 -stacked or clasped hand inset utilizing the internal mammary for one flap and the thoracodorsal system for anastomosis of the other flap;[1] Group 2 - horizontal inset with both pedicles to the internal mammary system without crossing; Group 3 - horizontal inset of both flaps with crossed pedicles both to the internal mammary.[3]

RESULTS: Twenty subjects underwent 40 free tissue transfers for unilateral breast reconstruction. Eighteen of the 20 subjects (90%) received TUG flaps and 2 of the 20 subjects (10%) received double PAP reconstructions. Peri-operative complications requiring a return trip to the operating room occurred as follows in each group: Group 1 had 2 of 4 (50%) flaps (pedicle malposition and thrombosis in both lateral flaps which were anastomosed to the thoracodorsal system), Group 2 had 2 of 2 (100%) flaps (both flaps had venous thrombosis in a single patient), and Group 3 had 2 of 34 (5.8%) flaps (one venous compression secondary to flap inset malposition and one arterial thrombosis). Both of these flaps were PAP flaps. .Long term flap survival was as follows: Group 1 = 3 of 4 (75%) flaps, Group 2 = 0 of 2 (0%) flaps, and Group 3 = 34 of 34(100%) flaps. Differences amongst the groups were statistically significant for both the incidence of peri-operative complications (p=0.0011) and flap survival (p=0.0008).

CONCLUSION: Utilization of double free tissue transfer consisting of TUG or PAP flaps is a feasible option for unilateral autologous breast reconstruction. In our experience, the horizontal inset with crossed pedicles to the internal mammary system is the safest and most reliable technique for flap and pedicle inset.

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