Treatment of the radial forearm flap donor site with single-stage Integra™ artificial dermal matrix and autograft

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Abstract

Introduction: Optimal treatment of the radial forearm flap donor site remains a difficult clinical problem, with complications including unsightly scarring, tendon exposure, and impaired range of motion and strength. Integra™ artificial dermal matrix has been described as an alternative to autograft alone for the reconstruction of these donor site defects using a two-stage process[1,2]. This study is a retrospective review of a consecutive series of radial forearm flap donor sites that have been treated with monolayer Integra™ artificial dermal matrix and autograft in a single stage.

Methods: Fourteen consecutive cases of radial forearm free flaps performed between June 2011 and June 2013 were reviewed. In each case, the donor site was reconstructed using monolayer Integra™ artificial dermal matrix and autograft in a single stage. After routine harvest of the flap, monolayer Integra artificial dermal matrix was meshed and applied to the wound. A split-thickness skin graft was then harvested and either meshed or pie-crusted prior to application over the Integra™. A negative pressure wound dressing was applied over the grafts for 5-7 days. The donor site was evaluated with regards to skin graft take, scar appearance, strength and range of motion, paresthesias, infection, and the need for secondary interventions.

Results: The fourteen patients had a mean age of 53 years old (range 20-68) and radial forearm donor site defect area of 65 cm^2 (range 30-110 cm^2). Follow up time ranged from four to 18 months. All defects had >98% skin graft take. There were no infections, and no patients required secondary intervention. Hypertrophic scarring was not seen in any patient, although 2/14 patients had some degree of scar hypopigmentation. 2/14 patients had FCR tendon exposure of <0.5 cm^2. 2/14 had diminished grip strength as compared with the normal contralateral side. 4/14 patients had paresthesias in the early postoperative period, all of which resolved by 4 weeks.

Conclusions: Treatment of the radial forearm flap donor site using Integra™ artificial dermal matrix and autograft is a promising alternative to autograft alone and is possible in a single stage.

References:

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Disclosure:

None of the authors has a financial interest in any of the products mentioned in this manuscript.