

The use of a fibrin sealant for securing skin grafts to the hand and upper extremity and its impact on outpatient occupational therapy.

Authors: Henderson S.R., Bolin E., Roggy D., Sood R.

Publication Date: 2012

Abstract:

Introduction: The traditional approach to skin grafting of partial and full thickness burns to the hand and upper extremity consists of split thickness (STSG) secured mechanically with sutures or staples. Over the past year, our burn center has utilized Artiss™ (Baxter) on patients with appropriate wounds to secure STSG for coverage of their burn wounds. Our standard post-operative hand therapy protocol was modified to initiate early active range of motion on post-operative day (POD) 1 if the grafts were adherent and no significant hematoma was present. We evaluated outpatient occupational therapy (OOT) outcomes of patients following STSG secured with Artiss to their hands and wrist compared to patients whose STSG were secured with staples. Methods: Thirteen patients whose STSGs were secured with Artiss from 2009-2010 (20 sites) were matched with thirteen patients whose STSGs were secured with staples from 2008- 2009 (21 sites). Patients were matched by total body surface area treated with STSG and treatment sites. A review of prospectively gathered data was performed on both treatment groups to obtain QuickDASH outcome measurement scores, pain levels (0-10 scale), grip strength, return to full active range of motion and demographic information. Results: The 20 Artiss treatment sites consisted of hands (n=18), hand/wrist (n=1), and wrist (n=1). The 24 staple treatment sites consisted of hands (n=18), hand/wrist (n=2), and wrist (n=1). As shown in Table 1, the Artiss treatment group required 12.3 weeks less OOT and achieved full AROM 64.45 days earlier than the staple treatment group. Both of these differences were considered very statistically significant. The Artiss group initiated OOT with a greater functional QuickDASH score than the staple group and rated their pain as being less

than the staple group at their first OOT visit. Conclusions: The use of Artiss™ represents a major advance for the fixation of hand and upper extremity grafts with immediate graft adherence. Early (POD 1) active and passive range of motion can be initiated without fear of graft shear or loss. This early range of motion greatly impacts a patient's functional outcome secondary to earlier return to full AROM, less loss of grip strength and lower pain rating at initial evaluation status post graft. The patient additionally benefits from less occupational therapy and earlier discharge. Applicability of Research to Practice: Identified graft fixation method's impact on patient outcomes. (Table Presented).