



Date: Sunday, December 8, 2019

Time: 11:00 – 11:15 am

Abstract Title:	An Algorithm For Rehabilitation Following Autologous Skin Cell Suspension Grafting
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Objective:	Identify rehabilitation practices to optimize functional outcome following ASCS grafting.
Abstract:	<p>Introduction: With the introduction of new skin technologies, traditional practices for post-operative burn therapy require modification to ensure positive surgical and functional outcomes. Our Burn Center participated in the compassionate use of Autologous Skin Cell Suspension (ASCS) for the treatment of life-threatening burns in patients who lacked adequate split-thickness skin graft (STSG) donor sites (IDE 15945 NCT029992249). Initially after ASCS application, we practiced conservative management, defined as strict bed-rest for 7 days post-operatively, including no range of motion (ROM). With further experience and continued access with non-compassionate use (IDE 13053 NCT03333941), we have updated our practices to involve more aggressive early physical and occupational therapy, and present our algorithm for post-operative mobility.</p> <p>Methods: Compassionate Use ASCS: Applied to patients with >20% TBSA grafted or >4000 cm² grafted, includes: Bed-rest until Pod #4; Mobility with weight bearing as tolerated and functional range of motion on POD #4 , post second dressing change and assessment of graft healing by MD/PA; Full ROM on POD #6, following final dressing take-down; Orthoses PRN for immobilizing joints, protecting underlying structures and preserving ROM.</p> <p>Non-Compassionate Use ASCS: Divided by anatomical location: Head and Neck; Extremities (hand/arm and axilla, ankle/foot and leg); Torso (chest, abdomen, back, hips and buttocks)</p> <p>Mobilize with WBAT on POD #2, after first dressing change, if shear forces are prevented and with orthosis in place if needed;</p> <p>Head and Neck only: Mobilize on POD #1, with orthosis in place</p>

	<p>Functional ROM on POD #4 after second dressing change, if shear forces are prevented and may remove orthosis if deemed appropriate by MD/PA; Full ROM at final dressing take=down;</p> <p>Fitting with tubular interim compression when grafts 90% healed;</p> <p>Fitting with custom compression garments as needed.</p> <p>Results: We treated a total of 26 patients with Compassionate-Use ASCS and 44 patients with Non-Compassionate Use ASCS.</p> <p>Anecdotally, ASCS accelerated graft healing and scar maturation, resulting in less time for scar tissue remodeling interventions. Patients initially exhibit skin and joint tightness from immobilization, however soft tissue is easily manipulated and elongated to regain ROM. Patients often transfer from the Burn ICU directly to inpatient rehabilitation, not requiring the same stabilization of graft healing as with STSG. Pigmentation normalization is accelerated. Hypertrophic scarring is virtually eliminated, with less need for aggressive scar management modalities and techniques. Compression garment requirements are decreased.</p> <p>Conclusion: ASCS allows for quicker healing, less inflammation and edema, and less collagen deformation with helical and contractile forces than typically seen with STSG. We have seen optimal functional outcomes. We propose further study of ASCS with respect to cutaneous functional units, impact on inpatient rehabilitation length of stay and patient satisfaction/reintegration.</p>
Disclosures:	<p>Dana Y. Nakamura – No relevant financial relationships to disclose</p> <p>Elizabeth Richardson – No relevant financial relationships to disclose</p> <p>Christopher Craig – No relevant financial relationships to disclose</p> <p>Jeffery Williams – No relevant financial relationships to disclose</p> <p>Joseph Molnar – No relevant financial relationships to disclose</p> <p>James Holmes – Stock: PermeaDerm, McKesson, Abbott Labs, AbbVie, Speakers Bureau: Mallinckrodt Pharm, Consultant: Avita Medical</p> <p>Jeffrey Carter – Stock: PermeaDerm</p>