

The Sandwich Technique: Cadaveric Allograft Overlay for Split Thickness Skin Grafting of Challenging Posterior Burns

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2:45 – 3:00 pm**

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Objective:

Upon completion of the lecture, attendees should be better prepared to:

- Review the allograft overlay sandwich technique as a reasonable option for protecting autografts in high risk areas such as posterior truncal burns

Abstract:

Introduction: The treatment of posterior truncal burn injuries is particularly challenging. Grafts are hampered by dependent positioning, edema, maceration, infection, as well as increased shear forces. Furthermore, these injuries often occur with large scale burn injuries of other body regions, necessitating widely meshed grafts and a prolonged recovery course, often with suboptimal graft take. The use of cadaveric overlay technique helps to protect grafts, interstices, and may improve healing but has not been well studied in the literature. The purpose of this study is to describe a modern application of the sandwich technique for high risk posterior autografts.

Methods: This was a retrospective review of adult patients admitted to a regional burn center from March 31, 2017 to May 31, 2018 with $\geq 20\%$ Total Body Surface Area (TBSA) with burns covering at least half of the posterior trunk and/or flanks. Axillary and posterior neck burns were included. Patients meeting inclusion criteria in the study were treated with 3:1 meshed autografts secured with fibrin sealant and staples after appropriate wound preparation. The autografts were over sprayed with fibrin glue and covered with a 3:1 meshed allograft also secured with fibrin sealant and staples. Wound care was provided daily with topical antimicrobial soaks until interstices were closed. Outcomes reported including graft take, time to healing, LOS, and infections.

Results: Nine patients were included in the study with a total of 13 operations. Median burn size was 39% TBSA, (35: 25,75). Median age was 60 (range 24-70). One patient had significant comorbidities including obstructive pulmonary disease, transient ischemia attack, and coronary artery disease with recent stents. A second patient was a near-indigent, alcohol-dependent vasculopath. Median area grafted was 546cm² (range 264 to 4430cm²). Eleven grafts were meshed 3:1 and 2 grafts were meshed 4:1. Grafts were placed on posterior trunk in 10 instances and on thighs/buttocks in 3 cases. All 13 grafts in the series had 100% take and interstices were completely re-epithelialized by postoperative day 9. There was no evidence of

infection in the posterior trunk grafts despite significant comorbidities in two patients. No one suffered mortality.

Conclusions: The allograft overlay sandwich is a useful technique to protect posterior, high risk, widely meshed autograft. In this series, the technique resulted in very satisfactory graft take over a historically difficult area to treat. Even with the complex patients in this study who were at risk of poor outcomes, not a single square centimeter of back, axilla, neck, or buttock autograft was lost. The use of cadaveric overlay technique helps to protect grafts, interstices, and may improve healing but has not been well studied in the literature. The sandwich technique should be further studied in regards to cost and in comparison to other reconstructive techniques.

Disclosure:

Andrew C. Bright – No Relevant Financial Relationships to Disclose
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Steven A. Kahn – Consultant fee: Medline; Mallinckrodt