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Introduction

- Early excision and grafting is a principle tenet of burn care
- Many burn surgeons utilize intermediate skin substitutes including human cadaver skin and xenograft between excision and grafting
- Over 96% of burn providers endorse using these intermediate skin substitutes in their daily practice¹
- These skin substitutes have been shown to provide survival benefit in large burns^{2,3}
- Evidence for using these products in small burns (<10% TBSA) is lacking
- The majority of current studies focus on the use of these skin substitutes as biologic bandage

Staged Grafting Procedure



A. Initial burn presentation with infection

B. POD5 after debridement (irrigated with mafenide acetate)



C. POD5 after staged grafting

D. Final healing of graft

Objective

The purpose of this study was to assess the outcomes of burn patients with <10% TBSA burns treated at an ABA verified burn unit without the use of intermediate skin substitutes.

Methods

- This is a retrospective chart review of 100 consecutive patients of all ages treated at a single center ABA verified burn unit with <10% TBSA full thickness burns (November 2017 - June 2019)
- No patients included in the analysis were treated with intermediate skin substitutes
- Analysis included demographics, TBSA, burn mechanism, time to grafting, staging, graft loss, and healing time

Results

- Cohorts had similar ages, gender, and TBSA
- Eighty eight patients underwent immediate debridement and grafting
 - 91% successful grafting graft take in this group
- Twelve percent of patients had unstable wound beds and were staged
 - 100% successful graft take in this group
- Similar length of stay
- Similar time to complete healing
- Mechanism of injury included thermal (N=94), chemical (N=4), electrical (N=2)

	All patients N = 100	Primarily grafted N = 88	Staged N = 12	p-values
Age, years	39.7	39.4	42.2	0.720
Gender M, %	55.0	53.9	58.3	0.814
TBSA, %	4.4	4.3	5.1	0.484
Time to first surgery, days	12.9	13.5	8.7	0.014
Length of stay, days	15.7	15.5	17.1	0.496
Time to complete healing, days	25.2	25.5	23.5	0.571
Patients with significant graft loss	8	8	0	0.004

Table 1. Analysis of patient demographics and outcomes

Conclusion

- Intermediate skin substitutes are an unnecessary step in surgical management of small (<10% TBSA) burns
- Debriding an unstable wound and leaving it open before autografting is a simple and cost effective option that results in excellent subsequent graft take
- While a small number (12%) of wounds cannot be debrided and grafted in a single stage, the vast majority (88%) can be

Applicability to Practice

Small burns (<10% TBSA) can be safely managed with debridement of the burn and either immediate grafting or with staging of the graft (if there is concern for an unstable wound bed). The use of intermediate skin substitutes is not necessary in burns of this size.

Sources

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2. Burke JF, Bondoc CC, Quinby WB. Primary burn excision and immediate grafting: A method for shortening illness. J Trauma. 1974(14):389-395
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