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Evolution of the surgical application and management of Cultured Epidermal Autografts (CEAs) in a large, regional referral burn center – Two decades of experience

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Introduction: Cultured Epidermal Autografts have been available as a Humanitarian Use Device (HUD) since 1998. We have previously presented the use of CEAs on large posterior burns in 40 patients, which showed a take rate of 83% and a survival rate of 90%¹. In addition, a group of 18 patients over four years utilizing the MEEK procedure demonstrated a 93% take rate and an 80% survival rate². A large retrospective review was conducted on all patients that received CEAs from 1998 to 2022. Overall, our center treated 306 patients with CEAs. Since 2012, patients have been treated with a more evolved specified approach. Currently, we incorporate multi-modal techniques in prepping, applying, and managing these delicate grafts. In this presentation, we will describe the methods we have learned and perfected over this time.

Methods: A review of the literature reveals that the technique currently employed in our center is not a standard approach, though some centers are similar. Moreover, the application of CEAs on posterior surfaces has not gained widespread acceptance, though we utilize this approach routinely. A full step-by-step description of our current methods, integrating several approaches and techniques, will be discussed. The data was then analyzed to see if

there was any significant difference in the outcomes of patients once our center's CEA protocol was finalized in 2012.

Results: The take rate between the two groups was 85% for patients treated in 1998-2012 and 86% for patients treated in 2012-2022. Furthermore, there was a slight increase in survival rates from 84% to 87%. There was a significant increase in length of stay, with the average length of stay increasing from 80 days to 93 days, but there was no significant difference in total body surface area (TBSA) being treated.

Conclusion: The evolution of this protocol has resulted in distinctive surgical management with predictive outcomes. Utilizing a multi-modal approach to the presurgical, surgical, and post-surgical stages of managing patients receiving CEAs has resulted in outcomes that are relevant and acceptable for patients meeting the criteria to receive this HUD treatment. Our results indicate that the implementation of our unique CEA protocol has not had a negative impact on patient outcomes and has shown that there is some improvement when compared to the original method.

Biography

Bounthavy Homsombath is a Medical Director, Burn, Joseph M Still Burn Center at Doctors Hospital of Augusta based in Augusta, Georgia. Homsombath graduated from the Morehouse School of Medicine in 2005. Dr. Homsombath is affiliated with Medical Center Of Plano.

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