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Abstract Title:	Application Of A Histological Determination System To Evaluate Burn Assessment Accuracy
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Objective:	<ol style="list-style-type: none">1. Discuss the visual diagnosis of initial burn wound healing potential continues to challenge even burn care experts.2. Demonstrate heterogeneity in burn healing potential further complicates the challenge of burn healing potential assessment.3. Recognize techniques that can supplement visual burn assessment continue to be necessary to improve burn wound assessment.
Abstract:	<p>Introduction: Accurate and early determination of burn wound healing potential is vital for determining adequate treatment. Currently, burn healing potential is assessed by visually inspecting burn injuries, but this is not a reliable method. Non-burn-care providers assess burns with up to 50% accuracy, while experienced burn experts have an accuracy rate around 70%. [1] However, these rates were published nearly two decades ago. This study evaluates the correlation between visual inspection of burn injuries by experts and histological evaluation of biopsies taken from the observed tissue.</p> <p>Methods: Under an IRB-approved clinical study protocol, consenting patients admitted at a single burn center were enrolled in this study. Upon enrollment, burn injuries were visually assessed by a burn expert—those categorized as “non-healing” were included in the study. During the subject’s hospital stay, biopsies were obtained from non-healing burn tissue and sent for histological analysis. Burn healing potential was determined histologically using a decision tree evaluating the presence of viable papillary dermis, reticular dermis, and adnexal structures within the dermis. Biopsies showing viable papillary dermis or greater than 50% viable adnexal structures were considered “healing” and biopsies with less-than 50% adnexal structures or no viable reticular dermis were considered “non-healing”. Results of histological analysis were compared to visual assessments.</p> <p>Results: A total of 186 biopsies were taken from 26 burns from 17 subjects, with an average of 7.1 (SD +/- 3.6) biopsies per burn. All 26 burn wounds were visually assessed as non-healing. Burn locations included shoulder (n=6), chest (n=5), arm (n=5), legs (n=3), abdomen (n=3), back (n=3), and flank (n=1). For biopsies taken from areas of burn</p>

	<p>tissue visually assessed as “non-healing”, 58% agreed with the visual assessment. Of the 26 burn wounds, 4 had all biopsies histologically determined as “non-healing.” Fifteen were heterogenous in burn healing potential, having at least one biopsy histologically determined as “non-healing.” The remaining seven burn wounds had no biopsies histologically determined as “non-healing.” Therefore, 73% of the burn wounds had some area that agreed with the visual assessment.</p> <p>Conclusions: Burn healing potential is difficult to diagnosis visually and continues to challenge even experts in burn care. Use of a histological diagnosis of burn healing potential yielded consistent results from prior studies evaluating accuracy of visual burn assessment. Technologies that aid health care providers in burn wound evaluation continue to be necessary for improving burn wound assessment.</p>
<p>Disclosures:</p>	<p>Ronald D. Baxter - No relevant financial relationships to disclose James Holmes, IV – Stock: PermeaDerm, McKesson, Abbott Labs, AbbVie; Speakers Bureau: Mallinckrodt Pharm; Consultant: Avita Medical Jeffrey Carter - Stock: PermeaDerm J. Michael DiMaio - No relevant financial relationships to disclose</p>

