LETTER

Application of a paste-type acellular dermal matrix for coverage of chronic ulcerative wounds

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Received: 20 Dec 2018 • Revised: 16 Feb 2019 • Accepted: 16 Feb 2019
pISSN: 2234-6163 • eISSN: 2234-6171
https://doi.org/10.5999/aps.2019.00066 • Arch Plast Surg 2019;46:285-286

Dear Editor,

We read with substantial interest the article published by Jeon and Kim [1] in the latest issue of *Archives of Plastic Surgery*. We would like to congratulate the authors for making a fine contribution to the field of chronic wound therapy by introducing the use of paste-type acellular dermal matrix (ADM). We are aware that new solutions are required to address this increasingly prevalent problem, but most of the recently described and highly promising materials for the management of this entity are either still not widely available or need to be investigated in greater depth to determine their utility and specific indications. Therefore, we find it worthwhile to emphasize that this field represents a great area of opportunity for research and will benefit from the participation of all related medical professionals worldwide to improve our patients' outcomes.

The treatment of chronic wounds indeed poses a challenge for the plastic surgeon, and ADM represents a promising resource in this context.

As mentioned, patients with chronic wounds frequently present with several comorbidities, which are, in our center´s experience, not limited to type 2 diabetes mellitus and peripheral arterial disease. As a referral center, we treat on regular basis patients with several connective tissue disorders, such as systemic lupus erythematosus, rheumatoid arthritis, mixed connective tissue disease, burn sequelae, cancer, and transplant recipients, who regularly receive strong immune suppressors and antimetabolites for their conditions, all of which alter the physiologic mechanisms of wound healing via several pathways.

We believe that it would worthwhile to extend future research to include patients with such characteristics, as they are among the most difficult to treat, and are also not very good candidates for alternative reconstructive approaches, as shown by Dunda et al. [2], who performed a retrospective study including eight immunocompromised patients. In their study, three of the eight patients included presented suboptimal outcomes after reconstructive procedures, requiring further operations due to wound dehiscence and necrosis at either the donor or recipient sites. The use of microvascular flaps is also associated with suboptimal results in immunocompromised patients. Sbitany et al. [3] published a retrospective review that included 24 immunocompromised patients who underwent to free tissue transfer for head and neck and lower extremity reconstructions and observed an elevated rate of complications, including total flap loss, intraoperative arterial thrombosis, and postoperative venous thrombosis in 8%, 13%, and 8% of the patients, respectively. Their univariate analysis found a statistically significant association between prednisone use and the overall complication rate. This was one of the largest cohorts studying this population, demonstrating the need for more studies in this context.

We would also like to make a comment regarding the use of ADM over bony and bare wound beds. As mentioned, the purpose of ADM application is to either induce re-epithelization or the growth of granulation tissue from the wound margins. In our experience, the use of similar materials has been successful as bridge therapy to induce granulation tissue, after which the patient can undergo a formal grafting procedure, such as a split-thickness skin graft.

It is important to explore the need for an antimicrobial agent in this setting. Chronic wounds are populated by several microorganisms, which may also hinder healing and need to be treated to enhance closure. Currently, several materials are being investigated for these purposes. Perez-Diaz et al. [4] recently published an original article that investigated the utility of silver nano-composites in conjunct with mesenchymal stem cells and porcine dermal matrix to form a dressing with bactericidal activity. Nonetheless, these sorts of materials have yet to be tested in the clinical setting to clarify whether they confer any further benefit.

Lastly, the use of a dressing method after application of ADM was debated. As mentioned in the discussion, we agree that the effects of ADM should be evaluated with and without the concomitant use of negative pressure wound therapy (NPWT), as this may bias the effect of the material itself. It was mentioned that NPWT requires a long time to produce results, leading to prolonged hospitalization. However, we disagree with this statement, as in our experience, patients can be safely offered NPWT on an outpatient basis, provided they can attend the clinic for close follow-up. A problem that we frequently face in this regard is that several patients are not able to afford the required equipment. In this context, we have successfully employed several alternatives such as the one described by Juarez et al. [5], and have obtained favorable results.

To conclude, we would like to congratulate the authors of this

publication once again, as efforts like this are crucial contributions towards the goal of improving the long-term prognosis of patients with chronic wounds.

Notes

Conflict of interest
No potential conflict of interest relevant to this article was reported.

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