Covering Skin Graft Donor Sites in Polymorbid Patient and Possibility of Xe-Derma® Meshing

Age: 78
Sex: Female
Etiology: Skin graft donor site

Introduction

Experimental studies have shown a clearly positive effect of acellular porcine dermis on keratinocyte migration and proliferation. We have used this advantage for treating complicated wounds, such as skin graft donor sites in a polymorbid elderly patient with extensive thermal trauma.

Case Report

A 78-year old female patient was admitted with extensive II degree scalding burns — 30% TBSA on her lower extremities. The patient was polymorbid, treated for ischemic heart disease, hypertension, type–2 diabetes, hypercholesterolemia, Parkinson's disease, and arthritis of weight-bearing joints. In view of her polymorbidity, surgical treatment was chosen as conservative. Synthetic dressings and antibacterial creams were applied on the wound areas. On Day 17, 18% TBSA had healed, while 12% had progressed to III degree, with the necessity of chemical necrectomy and subsequent skin autografting.

In view of the wounds' surface and location, the dorsal part of her trunk was chosen as donor section. As difficult healing was expected for donor areas, meshed Xe-Derma® was used on them. Under this product, the extensive wound area caused by taking out the graft healed within three weeks, with no complications.

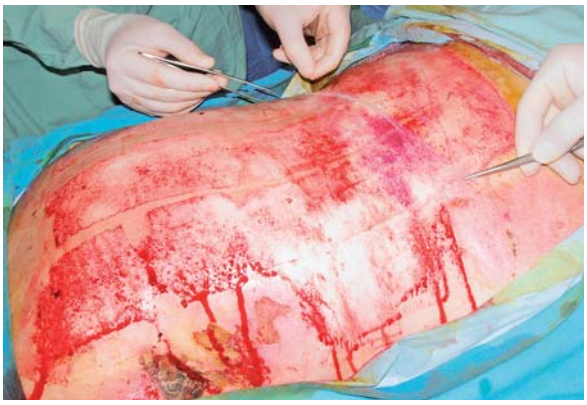

Fig. 1: Application
Extensive wound area after taking medium-thick dermo-epidermal grafts from the back (0–2 mm), meshed Xe-Derma® used to cover the donor site

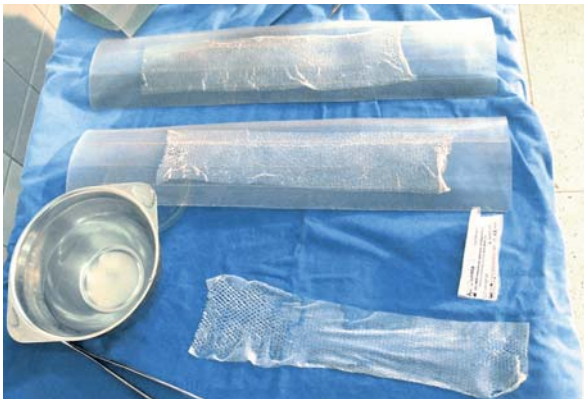

Fig. 2: Meshing
Hydrated Xe-Derma® shows biomechanical properties similar to the human skin, and can be meshed in standard manner. Meshing will prevent haematoma and makes it possible to cover a larger area. Xe-Derma® meshed at 1:1.5. Secondary dressing: tulle gras and 3% boric-water-soaked compress

Xe-Derma®

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Discussion

Satisfactory and speedy healing of the graft donor section is a basic precondition for any successful skin grafting. Even though the donor area is a well-defined wound, primarily free of infectious agents, there is no unanimity worldwide as to the preferred material for donor sites treatment. Thanks to its biological origin and its 3D collagen and elastic-fibre matrix, Xe-Derma® provides a superior haemostatic effect, makes it possible to minimise dressing replacement frequency, and reduces painfulness by covering denuded nerve endings. It shows very good adhesiveness, and its transparency makes it possible to monitor the wound closely. We have been using the benefits of these properties for covering donor areas in patients with expected wound-healing difficulties.

In this Case Report, we present a polymorbid elderly patient with diabetes mellitus. In elderly patients, dermal adnexa do not contain a sufficient quantity of keratinocytes in the stratum basale necessary for epithelial renewal. In elderly patients, donor sites are prone to secondary infection. Healing is long and complicated, especially in cases where epithelising capacity is inhibited by the presence of diabetes. Covering the wound with Xe-Derma®, which had been meshed for expansion and to prevent hematomas, made easy and speedy healing of the donor area possible.

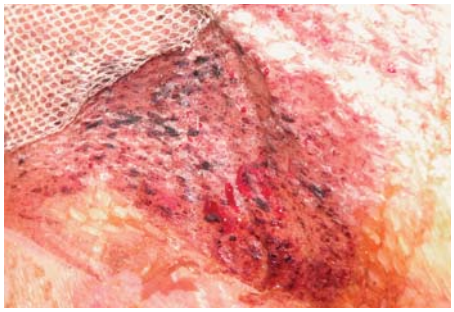

Fig. 3: Day 7 from application
Xe-Derma® firmly stuck to the wound base, no haematoma or exudate

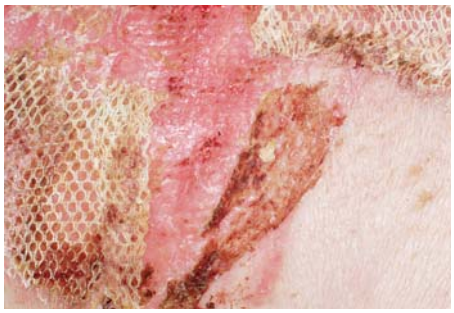

Fig. 4: Day 14
Healing through spontaneous epithelisation, Xe-Derma® is peeling off from the wound

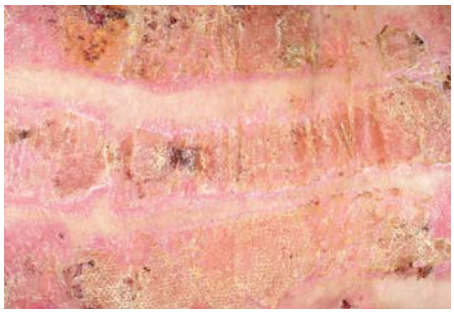

Fig. 5: Discharge
The whole donor section is healed within 3 weeks of the surgery

Conclusion

Thanks to its unique biological properties that have been demonstrated in experimental studies, Xe-Derma® is a suitable product for treating complicated wounds, such as extensive donor sites in a very elderly patient. Thanks to its biomechanical properties, Xe-Derma® can be expanded through standard meshing.

Total Time to Donor Sites Healing: 21 Days
Total Number of Xe-Derma® Applications: 1