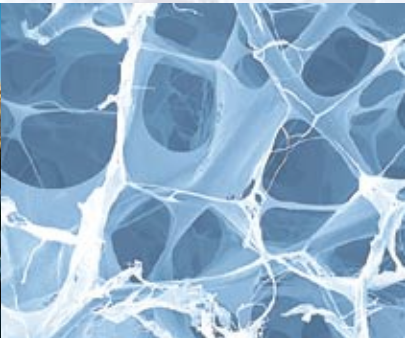
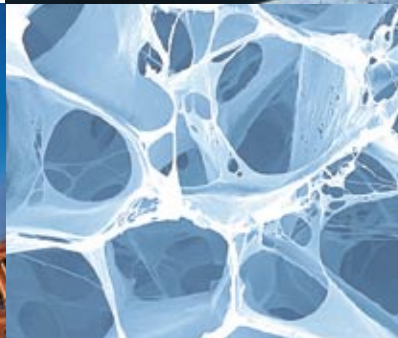


The Use of Dermal Substitutes – Current Standards and Indications

**May 29th – 30th, 2008
Vienna**



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*“If epidermis means save the life ...
dermis means save the quality of life.”*

Prof. Odile Damour,
head of the Laboratoire des Substituts Cutanés in Lyon

International focus meeting on the subject of skin substitutes

A high degree of input and information exchange during the discussions at the 1st International Focus Meeting

Scientists and physicians from Europe and the US, discussed the latest skin substitution methods at the 1st International Focus Meeting held May 29–30. More than 20 international speakers gave presentations in Vienna’s MuseumsQuartier about basic research, state of the art, and future prospects of dermal substitution materials, and presented case reports, studies, as well as long-term findings.

To start things off, Dr. Esther Middelkoop explained the biological function of the dermis for healthy as well as for reconstructed skin. Healthy people rarely think about the complexity and importance of skin as an organ. In fact, it takes serious injuries for us to become aware of how critical and diverse the skin’s functions really are.

Depending on the severity of a skin defect, the body can only heal itself to a certain degree. Great strides in wound healing-related research have enabled dermal substitution materials to be developed. They help in the reconstruction of natural skin structures in cases where the body is unable to rebuild destroyed dermis on its own. Middelkoop also talked about the challenges faced in the development of dermal substitution matrices and future full-skin substitute materials. Tissue substitute materials have seen widespread use in recent years. The primary area of application is burn injuries.

Dr. David Herndon, from the University of Texas and the scientific head of the focus meeting, gave a report on the current standards pertaining to the treatment of burns. However, dermal substitutes are also used within the scope of other physical traumas and reconstructive surgery. He also said that these substitutes should be considered as a supplemental treatment option and not a replacement method in the surgical realm. However, one certain benefit is that patients’ expectations of modern medicine can be met by the latest medical developments that enable fast wound healing as well as a much enhanced restoration in terms of function and aesthetics.

Dr. William Hickerson, from the Burn Center at the Arkansas Children’s Hospital, participated just a few days before the meeting in one stage dermal reconstruction conducted by Dr. Eric Dantzer at the military hospital in Toulon, France. Dr. Hickerson discussed his huge experience with two-stage dermal reconstruction. Despite achieving outstanding results in some cases, he recommended the single-stage reconstruction, as presented by his European colleagues, to be a major advance for patients and the cost-bearing parties.



Fig. 1: Applying a collagen-elastin matrix after naevus excision

Impressive long-term results

The focus of interest on the part of the participants and speakers at the 1st International Focus Meeting, was particularly directed towards Matriderm®, a product developed by Dr. Suwelack Skin & Health Care AG based in Germany. For the first time, a matrix has been created that allows the combined reconstruction of skin defects in a single procedure, whereby the dermis and epidermis are reconstructed to an optimal degree in only one operation.

The collagen-elastin combination serves as a matrix for a neodermis of unparalleled quality. Within a few weeks after a graft, the collagen matrix converses entirely into the body's own dermal tissue, thereby allowing a controlled wound healing, improved skin reconstruction, and early rehabilitation as well.

Numerous impressive long-term results document the effectiveness of the matrix in acute injuries to the hand and joint regions. Dr. Kourouche Amini presented from a collection of 50 cases that he had compiled over a longer period of time in Switzerland using Matriderm®. His many years of positive experience with the product confirmed the very good quality of the reconstructed skin. One particular advantage was the reduced risk of infection compared to other products used to date. Dr. Henning Ryssel of the BG Unfallklinik Ludwigshafen demonstrated the significant improvements of skin elasticity that he had observed in an intraindividually controlled, prospective clinical study.

Dr. Mohammad Jawad presented a particular case whose early results justify considerable optimism. He had treated a young English lady who had suffered a serious facial injury, with Matriderm®, and shared very auspicious early results.



Fig. 2: Scar reconstruction with a dermal substitute in a single-stage procedure

Need for evidence-based studies

The meeting's participants had lively discussions on their experiences with application methods that had been used for various indications. For example, Dr. Eric Dantzer talked about various indication areas where the currently practicable procedures had produced outstanding results. He also highlighted the relevance of his dressing technique, utilizing multi-layered petrolatum gauze with a thick and tight gauze overdressing. During his series he extended the dressing change frequency from every two days to just every four days with improved results. Other individual treatment concepts, such as a combination with vacuum therapy, were also addressed.

Another topic under discussion was the urgent need for evidence-based studies in order to obtain more information about indications and application forms and to thereby define an optimized treatment standard. Dr. Steven Wolf, editor of *Burns* magazine, emphasized the necessity of clinical research and the dissemination of results through scientific publications.

Dr. Lars-Peter Kamolz, the Focus Meeting organizer and a plastic surgeon at the Medical University of Vienna's Department of Surgery, presented a series of cases from a recently published study pertaining to burn-injured hands, in which the phenomenal results reveal hardly any perceptible differences compared to the undamaged hand. "New approaches and developments in the area of artificial tissue and skin replacement hold particularly high potential for wound-healing in the case of chronic or acute wounds. However, we must also deal responsibly with the health care system's financial resources. Our Focus Meeting promoted the transfer of expertise, which is important because a given product can only be utilized correctly and efficiently by people who are responsible and aware of its related issues."



Fig. 3: One year result after an acute hand burn treated with Matriderm®

Fig. 1: N. Marathovouniotis, Childrens hospital, Department of Surgery, Cologne, Germany.

Fig. 2: E. Dantzer, Burn Center, Military Teaching Hospital Ste Anne, Toulon, France.

Fig. 3: L.-P. Kamolz, Vienna Burn Centre, Division of Plastic and Reconstructive Surgery at the Department of Surgery, Medical University of Vienna, Austria.

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