[OP150] USE OF A NEW GEL-LIKE DERMAL MATRIX FOR THE TREATMENT OF DIABETIC FOOT ULCERS: EFFICACY STUDY ON A POPULATION OF DIABETIC PATIENTS AFFECTED BY COMPLICATED LOWER LIMB LESIONS

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Free Paper Session: Devices and Intervention 2

Aim: Limb salvage may be a challenging problem in diabetic population affected by foot ulcers. In presence of infection progression surgical procedures becomes an essential treatment to save limbs. Cellular or acellular dermal substitutes are used both for covering lesions after surgical debridement without primary intention closure, or in the case of dehiscence of the surgical site. Gel-like dermal matrix* is a dermal substitute developed for use when the geometry and localization of a lesion and/or the exposure of deep tissue does not allow the use of dermal substitute sheet.

Method: From June 2013 to October 2014, 71 consecutive diabetic patients with foot ulcerations were enrolled. 25 patients had lesions resulting from an open minor amputation, 21 patients had open ostectomy with residual exposure of cancellous bone, 10 patients had dehiscence of the surgical site and 15 patients had deep wounds. All the lesions listed were staged as grade III B-D according to the classification of the University of Texas.

Results / Discussion: The average follow up was 184,08±130,09 days. 44 (61,97%) patients healed with complete re-epithelialization of the lesion. Of these, 25 patients received simultaneous treatment with application of gel-like dermal matrix* and skin grafting, 4 patients were treated with delayed skin grafting after application of the dermal substitute. 16 (22,54%) patients showed an improvement of local conditions through cover of the exposed bone. 11 (15,49%) patients showed no improvement in relation to recurrence of infection and/or critical ischemia.

Conclusion: The use of this gel-like dermal matrix* can be considered an affective treatment for diabetic foot wounds added to a program of multidisciplinary therapy.

Integra®flowable wound matrix

[OP151] USE OF AN EPIDERMAL CELL HARVESTING DEVICE* TO TREAT A RANGE OF WOUND AETIOLOGIES IN A UK SPECIALIST WOUND CLINIC OUTPATIENT SETTING.

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Free Paper Session: Devices and Intervention 2

Aim: Use of an epidermal cell harvesting device* to treat a range of wound aetiologies in a UK specialist wound clinic outpatient setting.

Method: The device* uses heat and negative pressure to raise epidermal microdomes which are then harvested using an adherent film that can be applied directly to the wound bed. Normal principles of wound bed preparation prior to grafting apply.

Ten patients with wounds of varying aetiologies, diabetic foot ulcer, 3 venous leg ulcers, 2 mixed leg ulcers and 4 non-healing surgical wounds on the abdomen. All wounds were debrided. Epidermal grafts were harvested on the thigh of the patient. Patients were followed up for 4 weeks and monitored for signs of healing and donor site complications.

Results / Discussion: Eight patients' wounds showed significant improvement following the micro-graft application. Noticeably there has been improvement in the percentage of epithelium in the patients with abdominal wounds. The procedure was well tolerated; with only slight discomfort upon graft removal from the thigh.

The device provides uniform epidermal micro-grafts in an efficient, reproducible manner. The procedure has a steep but short learning curve and is easy to perform in the outpatient setting. There were no complications at the donor site.

Conclusion: The device* shows great potential for applying micro-grafts at a more cost effective and straight forward way to a variety of different wound aetiologies. This clinical experience has provided enough information to suggest that further research into this area would have great benefits for the treatment of patients.

*Cellutome epidermal cell harvesting device KCI

[OP152] INITIAL EXPERIENCES WITH A PROMISING EPIDERMAL HARVESTING SYSTEM IN THREE CASES

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Free Paper Session: Devices and Intervention 2

Aim: The management of the leg ulcers is still difficult. The debridement, antibiotherapy, revascularisation procedures are the basic principles for complete epithelisation. Skin grafting may be used as a final step. Epidermal skin grafting systems which can be applied easily and painless, have become important. We present three cases with the diabetic and arterial ulcers treated on the base of conventional wound treatment and epidermal harvesting system (EHS). We want to share our first experience with EHS.

Method: Three patients with the foot ulcers were treated by conventionally wound treatments and EHS. The first patient was a 64-year old male with a diabetic ulcer of 5 cm X 5 cm in size. The second patient was a 60-year old male with an ulcer according to arterial failure and diabetes, 9.5 cm X 5 cm in size. The third patient was a 60-year old male with a diabetic ulcer of 4 cm X 3 cm. All wounds were prepared with the granulation on the level of healthy surrounding skin before the application of the EHS.

Results / Discussion: We determined the complete epithelisation in the three patients, applied EHS. The same success could be provided by a surgical grafting. However this system is easily applied without the use of anesthesia and an operating room.

Conclusion: Skin grafts have been used to achieve complete epithelisation. However painless and easily applicable systems with less donor site damages are recently promising. Thus new cases are needed to evaluate the usefulness of these systems.

[OP153] AUTOMATED, MINIAMAL INVASIVE, AUTOLOGOUS EPIDERMAL MICROGRAFTING WITH THE CELLUTOME SYSTEM FOR EPITHELIALIZATION IN PATIENTS WITH COMPLEX AND CHRONIC WOUNDS.

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Free Paper Session: Devices and Intervention 2

Aim: A safety and efficacy trial on autologous epidermal grafting in patients with chronic wounds, using non invasive micrografting device* to accomplish epithelialization. The rationale for this technology is to deliver viable autologous micrografts, containing keratinocytes and other cellular structures, which are placed in a non healing wound bed.

Method: A single center clinical evaluation was executed in 23 patients with chronic wounds in whom wound healing was stagnant for minimal two weeks, despite other measures to accomplish full epithelialization, and thus full wound closure. All patients were treated according to a strict treatment protocol with regard to wound bed preparation prior to the epidermal micrografting, and the procedure for epidermal micrografting harvesting.

Results / Discussion: 23 patients were consecutively treated with epidermal grafting in the period from July to December 2014. Wound aetiology included a variety of ulcers (N=10), surgical related wounds (N=6), and posttraumatic wounds (N=7). The duration of the wounds varied between 9 weeks to 24 months. Wound bed preparation consisted of a variety of advanced wound care technologies like e.g. hyperbaric oxygen therapy, NPT, twice weekly sharp debridements, and autologous platelet rich plasma growth factors application.

The harvesting and application procedure was completed in 45 minutes in all patients. Full wound epithelialization was achieved in 15 patients in 2-8 weeks after the grafting procedure. All donor sites all healed with 2 weeks, without any scar formation.

Conclusion: In selected patients, with proper wound bed preparation, the epidermal micrografting technique proved to be an effective and safe procedure, with no co-morbidities and high patient satisfaction with regard to both donor and recipient sites.

* a Epidermal Harvesting System, CelluTome™, Acelity, San Antonio, US