Graft Incorporation and Microangiogenesis Evaluation via Fluorescence Angiography Following Application of an Acellularized Dermal Matrix

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Disclosures

- None to disclose
Graft Incorporation and Microangiogenesis Evaluation via Fluorescence Angiography Following Application of an Acellularized Dermal Matrix.

**Purpose**
To characterize the incorporation of an acellular dermal matrix graft by evaluating microangiogenesis, capillary network formation, and revascularization.

**Background**
Acellular dermal matrix (ADM) grafts have been in popularity over the past decade with various hyaluronic acid types of grafts and other biocompatible biomaterials. This technology has been used to treat a wide range of indications from the repair of perforated tympanic membranes to the correction of facial rejuvenation. ADMs have been shown to support cellular growth and tissue repair through their ability to provide a scaffold for the regeneration of native tissue.

**Methods**
The study was designed to evaluate the use of ADM in the repair of full-thickness skin defects. ADM was applied to the defect site and then covered with a split-thickness skin graft. The graft was then secured with a suture and allowed to heal by secondary intention.

**Results**
ADM was found to support cellular growth and tissue repair, leading to a successful skin graft take. ADM was also found to provide a scaffold for the regeneration of native tissue, leading to improved healing outcomes.

**Discussion**
ADM is a versatile graft material that can be used in a variety of applications, including the repair of full-thickness skin defects. ADM has been shown to support cellular growth and tissue repair, leading to improved healing outcomes.

**Conclusion**
ADM is a useful graft material that can be used in a variety of applications, including the repair of full-thickness skin defects. ADM has been shown to support cellular growth and tissue repair, leading to improved healing outcomes.

**References**

**Figure**
A color photograph of the study area showing ADM graft application and subsequent healing.

**Graphs**
Graphs showing the improvement in fluorescence angiography from pre-graft application to post-graft application.
• Graft incorporation
  • Revascularization
    • Residual host vessels
    • New vessels
    • Combination
  • Recellularization
    • Graft scaffold
    • Migratory inflammatory cells

• Fluorescent angiography
  • Indocyanine green (IcG)
    • Hepatic metabolism
  • Uses:
    • Colorectal surgery, plastics, otolaryngology, podiatry, ophthalmology, etc.

Review

Fluorescent angiography
- Indocyanine green (IcG)
- Uses:
  - Colorectal surgery, plastics, otolaryngology, podiatry, ophthalmology, etc.
Case Presentation

- 39 African-American male
- Necrotizing fasciitis - Right lower leg
- Total defect size $192\text{cm}^2$
- Negative PMH
Flourescent Angiography

- 48hrs
- 3 weeks
Rates of Ingress

- 48 hours
- 3 weeks
Maximal Points of Intensity (MPI)

- 48 hours
- 3 weeks
Conclusion

- **48hr**

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- **3 weeks**

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References