

## The Evolution of Burn Injury Management: Using Dehydrated Human Amnion/Chorion Membrane Allografts in Clinical Practice

**T**issue regeneration is rapidly becoming the new standard for healing and repair of all types of wounds, including burns. In addressing burn wounds, the goal is to replace damaged or missing tissue with like, healthy tissue which is able to restore full function to the involved area with minimal to no scar tissue formation. Most current wound repair techniques often lead to scarring with differences in appearance and function to the normal tissue it has replaced. Minimizing or eliminating scarring is critical to the patient's recovery to their preinjured state.

Human placental tissues have been used for centuries as a biological wound dressing in many different cultures. Far Eastern medicine has long considered placental tissues to be a potent medication for the treatment of many diseases with mystical powers to heal,

whereas in Western medicine, the use of amniotic membrane as a biological wound dressing has been reportedly used since the early 1900s. Many advantages of amniotic membrane as a wound dressing have been reported, including alleviation of pain, the prevention of infection, acceleration of wound healing, and ease of use. However, in recent times, the clinical use of amniotic membrane in its native form fell out of favor due to concerns with disease transmission and issues related to obtaining, cleaning, and storing the tissue.

Contemporary processing methods now provide the medical community with safe amniotic tissue allografts such as dehydrated human amnion/chorion membrane (EpiFix, EpiBurn, AmnioFix; MiMedx Group Inc., Marietta, Ga) for homologous use. These allografts are available in various sizes and configurations and are preserved and terminally sterilized in a way that allow for safe, off-the-shelf use in a variety of clinical situations. Their applicability to aid in the regeneration and healing of many different tissue types also became apparent. Scientific investigation has shown these dehydrated human amnion/chorion membrane allografts contain growth factors and cytokines, including

immunomodulatory chemokines, immunomodulatory cytokines, and tissue growth promoting factors. Angiogenic growth factors retaining biologic activity are also present and studies have shown the potential of these matrices to attract stem cells to the area of the wound.

This supplement has been created to assist the reader in understanding the history of burn management, and discuss the use of amniotic membrane, including both amnion and chorion tissues, in a variety of burn wounds. It will endeavor to demonstrate the many benefits that can be obtained by adding this type of allograft tissue to difficult to heal wounds, as well as wounds where significant scar tissue formation would be detrimental to the patient's ability to return to normal function.

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