

Enhancing Fasciotomy Wound Healing Using Dehydrated Human Amnion/Chorion Membrane Allograft

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INTRODUCTION

Compartment syndrome, characterized by increased pressure within a closed anatomical compartment, poses a significant threat to tissue viability and functional outcomes.

Fasciotomy, a surgical intervention aimed at alleviating compartmental pressure, is a crucial and often life-saving procedure. However, the post-fasciotomy stage brings with it a new set of challenges, including wound management and the risk of complications. In this context of post-fasciotomy care, amniotic membrane therapy emerges as a biological avenue, holding potential in addressing the multifaceted aspects of wound healing, inflammation, and tissue regeneration. This case study aims to delve into the application of amniotic membrane therapy in the post-fasciotomy setting, focusing on its impact on wound healing, reduction of inflammation, and mitigation of complications

METHODS

This case series involves two patients treated with Dehydrated Human Amnion Intermediate Chorion Membrane (DHAICM) allograft following fasciotomy. The treatment protocol included thorough debridement with regular wound irrigation and application of DHAICM every five days until wound closure. Each application was secured by an appropriate moisture-retaining dressing to prevent allograft displacement.

RESULTS

Complete wound closure was observed one week after the final DHAICM application. The wounds of the patient in Case1 resolved after eight applications, whereas, the patient in Case2 resolved after six applications. In each patient, reductions in both pain and swelling were observed. The healing process involved erythema, granulation tissue formation, patchy re-epithelialization, and eventual coverage by thin, pink skin. There were no reported adverse events or severe side effects associated with DHAICM use in either case.

CASE REPORT



Case 1 (Fig : A) : A 43-year-old male patient presented with escalating pain, swelling and erythema in his right lower extremity, one week after undergoing fasciotomy for acute compartment syndrome. Fasciotomy site (8 cm × 6 cm in size). Surgical debridement preceded the application of DHAICM at the incision site. DHAICM was applied every 5 days. A total of 8 DHAICM applications were utilized. After the last application of DHAICM, complete wound closure was achieved.



Case 2 (Fig : B) : A 50-year-old male patient presented with escalating pain, swelling and erythema in his left lower extremity, one week after undergoing fasciotomy for acute compartment syndrome. Fasciotomy site (8 cm × 2 cm in size). Surgical debridement preceded the application of DHAICM at the incision site. DHAICM was applied every 5 days. A total of 6 DHAICM applications were utilized. After the last application of DHAICM, complete wound closure was achieved.

DISCUSSION

This case series highlights the potential of amniotic membrane therapy in enhancing the management of post-fasciotomy wounds in patients with cellulitis and compartment syndrome. The regenerative capabilities of the amniotic membrane are instrumental in promoting wound healing and minimizing complications.

Amniotic membrane therapy shows promise in addressing the complex challenges of post-fasciotomy care, serving as a valuable complement to standard treatments. Continued research and clinical exploration are essential to identify its broader applicability and refine its integration into post-surgical scenarios.

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*DHAICM=AmchoPlast (Cellution Biologics, Roswell, GA)

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