

Dehydrated Human Amnion/Chorion Membrane Allograft as a Biological Dressing in the Treatment of Radiation Induced Ulcers: A Case Study

Rajesh Bansal MBBS, MD¹; Vishwajeet Singh^{2,3} & Keshav Verma, MBBS^{2,3}



INTRODUCTION

Radiation therapy, an effective cancer treatment, often leads to challenging side effects, notably radiation-induced ulcers. These ulcers can significantly interrupt therapy, cause pain & delay treatment.

Effective management of these ulcers requires innovative and useful measures that can mitigate pain, enhance wound healing and help the patient resume radiation therapy as soon as possible. Amniotic membrane therapy, known for its wound-healing abilities, thus presents a biological solution. This case study delves into the application of amniotic membrane in treating radiation-induced ulcers, focuses on its regenerative properties, and assesses its effectiveness in healing radiation-induced skin damage. By a detailed analysis of individual cases, the study aims to improve the current understanding of managing radiation-induced ulcers and also enhance awareness about the role of amniotic membrane therapy, in this specialized context.

METHODS

This case series examines two patients with radiation-induced ulcers treated with Dehydrated Human Amnion Intermediate Chorion Membrane (DHAICM) allografts. The treatment involved wound irrigation followed by a single application of DHAICM, secured with a dressing to maintain moisture and prevent allograft displacement.

RESULTS

Complete closure of the ulcers was observed one week after DHAICM application. Remarkably, each patient required only a single application of DHAICM and was able to resume therapy.

The healing process included erythema, granulation tissue formation, patchy re-epithelialization, and final coverage with a thin layer of friable, pink coloured skin. No adverse events or severe side effects from DHAICM were reported.

^{*}DHAICM=AmchoPlast (Cellution Biologics, Roswell, GA)

CASE REPORT



Case 1 (Fig : A) : A 53-year-old male patient presented with head & neck squamous cell carcinoma (stage IV), undergoing radiation therapy.

After 4 therapy cycles, he reported gradual onset of pain and skin changes on his neck, corresponding to the radiation treatment field, leading to radiation therapy being stopped. The patient received a single application of DHAICM of size 7 cm × 4 cm.

After 1 week, complete ulcer epithelization was achieved and radiation therapy was resumed.



Case 2 (Fig : B) : A 62-year-old male patient presented with osteosarcoma of spine, undergoing radiation therapy.

After 3 therapy cycles, he reported gradual onset of pain and skin changes on the upper back within the radiation treatment field. Due to this, radiation therapy was stopped.

The patient received a single application of DHAICM of size 8 cm × 6 cm. After 1 week, complete ulcer epithelization was achieved and the radiation therapy was resumed.

DISCUSSION

Radiation-induced skin reactions are a common, often unavoidable consequence of radiation therapy. The skin, being an overlying transit tissue, inevitably receives radiation and adverse skin reactions delay the process of radiation therapy. This, in turn, could have grave outcomes. Therefore, an effective treatment that mitigates these reactions is crucial.

DHAICM, as demonstrated in this study, is easy to apply, adheres well without adhesives, and is cost-effective. It contributes to shorter wound healing times, reduced hospital stays, fewer dressing changes, and less need for analgesics. Thus, the use of DHAICM could be a valuable addition to radiation therapy that helps minimize the severity of skin reactions and facilitates uninterrupted treatment.

AUTHOR'S AFFILIATIONS :

1. Swami Dayanand Hospital, New Delhi, India.
2. Cellution Biologics, Roswell, GA
3. LifeCell International, Chennai, India.

REFERENCES:

1. A. Lobo Gajiwala & V. Sharma (June 2003) Use of Irradiated Amnion as a Biological Dressing in the Treatment of Radiation Induced Ulcers
2. Matthew J. Regulski, Alla Danilkovitch, Molly C.(August 2018) SaundersManagement of a chronic radiation necrosis wound with lyopreserved placental membrane containing viable cells