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INTRODUCTION

Traumatic wounds represent a fairly common reason for the presentation of dogs to a veterinary practice. Acute traumatic wounds with tissue loss could be related to a number of causes such as bites, penetrating or blunt trauma, and shearing and degloving injuries. Once the patient is clinically stable, the goal of managing the injury is to achieve healing as quickly as possible to minimize the risk of infection and restore normal skin function. In elderly patients, the management of wound healing can be challenging due to both concurrent diseases and impaired physiological states, potentially resulting in delayed healing and chronic or non-healing wounds.

AIM OF THE STUDY

The study aimed to determine the effect of **Fluorescent Light Energy** (FLE) for the management of **acute traumatic** wounds with significant tissue loss in two older dogs.

CLINICAL PRESENTATION

Case 1

presented with a **full-thickness** shearing injury from a road traffic accident that occurred a week prior. This injury resulted in a significant loss of tissue in the dorsal region of the neck, extending from the right shoulder joint area to the left axillary region. The wound width varied from **9-16 cm** and the edges and subcutaneous tissues were ischemic and necrotic.

Case 2

presented with an infected wound resulting from a dog bite in the dorsal region of the neck, both ears, and cheeks. The wound exhibited abundant purulent discharge, necrosis of the skin, subcutaneous tissues and fascia, and was accompanied by substantial undermining of the adjacent tissues. The wound width varied from **15-25 cm**.

FLE was applied once a week with two consecutive applications per session for each dog, until wound closure was achieved.

Photo courtesy of Dr. Andrea Marchegiani



Photo courtesy of Dr. Andrea Marchegiani





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RESULTS

By the **end of the third week**, healthy granulation tissue filled the entirety of the wound bed, while healthy wound borders without maceration and clearly advancing re-epithelization at the margins were noted.

Full wound closure was obtained after 9 and 16 weeks, respectively, in both dogs.

Case 1 after 9 weeks of FLE management Photo courtesy of Dr. Andrea Marchegiani



Case 2 after 16 weeks of FLE management Photo courtesy of Dr. Andrea Marchegiani



CONCLUSION

The preliminary findings from these cases suggest that Fluorescent Light Energy (FLE) is well tolerated and may have a positive effect in the management of acute traumatic wounds with a loss of tissue in older dogs. The effective management protocol for acute traumatic wounds should be established based on a patient's specific needs, and should include surgical approaches to be maximally effective.

FLE could be considered a valuable option since it positively influences all the phases of the skin regeneration process. Studies have shown it occurs through modulation of the inflammatory profile, activation of growth factors and stimulation of collagen deposition. Furthermore, FLE helps to control bacterial growth.

In a previous study, the use of FLE in uncomplicated canine surgical wounds improved microscopic features and stimulated the release of cytokines associated with skin regeneration. In humans, FLE has shown to be very well tolerated and helpful in the management of acute and chronic wounds and burns.



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