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INTRODUCTION

Leg ulceration is a rare but well recognized complication of systemic lupus erythematosus.¹ The etiology of leg ulceration in systemic lupus erythematosus is secondary to immune mediated vasculitis.² The recalcitrant ulcers are often complicated by recurrent local infection caused by systemic immunosuppressive. Venous insufficiency sometimes is also a contributory factor to delayed healing.³

CASE REPORT

An 18-year-old girl with long standing systemic lupus erythematosus presented to the hospital with acute flare of her disease with new onset of arthritis. She was previously treated with a myriad of immunosuppressive agents. Of note, she had a chronic non-healing ulcer started 2 years ago over the right medial malleolus. The ulcer was previously treated with alginate dressing with acetic acid. She required multiple courses of systemic antibiotics for the past 2 years with no signs of healing of the ulcer. The uncontrolled primary disease and the pain inflicted by the ulcer caused significant distress to the patient. She suffered from major depressive disorder.

INITIAL ASSESSMENT

On the author's initial assessment, the wound was seen at 4cm proximal to the medial malleolus and extended across the lower shin, measuring 13cm x 6cm (picture 1). The wound bed was pale with minimal slough patch and was heavily exudative with foul smelling discharge. The ulcer was exquisitely tender. The distal foot pulses were strongly felt and there were no signs of arterial ischemia. There was no clinical evidence of venous insufficiency. The ABSI was 1.13. Wound surface swab grew mixed organisms. Wound edge biopsy showed mixed acute and chronic perivascular inflammatory infiltrates at the dermis. Ultrasound doppler showed no evidence of deep vein thrombosis and sapheno-femoral junction incompetency. The clinical impression of the chronic ulcer was likely due to an infected vasculitic ulcer, possibly by a multi-resistant microorganism refractory to the systemic antibiotics.

The wound was initially dressed with nanocrystalline silver coated dressing. Systemic antibiotics were given for 2 weeks. The wound contracted effectively at week 14 of treatment.



PICTURE 1: BASELINE



PICTURE 2: 14TH WEEK OF NANOCRYSTALLINE SILVER DRESSING

TREATMENT

However, during her assessment at week 17, new skin break began to develop at the lateral edge of the newly epithelized skin. The wound enlarged up to 5cm x 3cm (picture 3). This was accompanied by increased exudate. Decision was made for activated carbon cloth dressing (ACC, Zorflex) changed weekly. Wound closure was achieved by 4th week of treatment with ACC, in contrast to 16 weeks of treatment with nanocrystalline silver coated dressing. Exudate control was excellent, and the patient displayed greater satisfaction towards ACC.



PICTURE 3: NEW WOUND BREAKDOWN



PICTURE 4: ALMOST COMPLETE EPITHELIZATION AT WEEK 4 OF ACC

DISCUSSION

Activated carbon is used historically to treat drug overdose and poisoning due to its toxin binding activity. There has been an increased interest in the use of ACC to manage chronic wounds. Its antimicrobial and anti-odor properties are conferred via an adsorptive capacity generated by the Van der Waals forces which ACC uniquely possesses. ACC has been studied for use in wounds of different etiologies, including traumatic and surgical wounds, arterial, venous as well as diabetic foot ulcers.⁴ The experience in the use ACC in chronic wound may be limited but the outcome appears promising.⁵

Our case report illustrated a recalcitrant lower limb wound which healed following 4 weeks of application of ACC. ACC achieved good exudate and odor control in our patient even though it is changed only weekly.

CONCLUSION

In conclusion, ACC applied directly on chronic wounds, including vasculitic ulcer, is a simple yet safe and effective wound dressing. It is low adherent, allowing easy removal of the dressing while protecting the periwound skin, but continues to maintain strong antimicrobial properties and good exudate control. It is an attractive wound dressing option in recalcitrant wound, which is cost effective with rapid closure times.

REFERENCES

1. Uma Maheswari K, Vijayalakshmi B, Vasantha Kumar M, Jaleena EK, Anandan H. Cutaneous manifestations of systemic lupus erythematosus- a retrospective study. *Autoimmune Dis* 2017; 4(10): 14-8
2. Shanmugam VK, Angra D, Rahimi H, McNish S. Vasculitic and autoimmune wounds. *J Vasc Surg Venosu Lymphat Disord* 2017; 5(2): 280-292
3. Fink Am, Kottas-Heldengery A, Bayer PM, Bednar R, Steiner A. Lupus anticoagulant in patients with chronic venous insufficiency. *Acta Derm Venereol* 2003; 83(4): 287-9
4. Scheer HS, Kaiser M, Zingg U. Results of directly applied activated carbon cloth in chronic wounds: a preliminary study. *J Wound Care* 2017; 26(8): 476-481
5. Murphy N. Reducing infection in chronic leg ulcers with an activated carbon cloth dressing. *Br J Nurs* 2016; 25 (12): S38-44