

Management of malodour fungating wound with nanocrystalline silver coated dressing

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SUMMARY

Chronic exudative malodorous fungating wound of four years at the right arm due to diffuse large B cell lymphoma managed with silver dressings. In two months of application with nanocrystalline silver coated dressings, there was significant improvement in wound.

KEY WORDS:

Cancer wound, fungating wound, silver dressing

INTRODUCTION

Chronic fungating wounds in cancer patients are often malodorous. These distressing wounds arise either from primary, secondary or recurrent malignancy. Medically, silver has antiseptic, antimicrobial and anti-inflammatory properties. It showed improvement in treating chronic wounds. We report a case of a patient with non-healing fungating wound for four years managed with nanocrystalline silver coated antimicrobial barrier dressings.

CASE REPORT

A 68-year-old woman was referred to the wound care clinic with history of foul smelling fungating wound over her right arm for four years. She first presented with progressively increasing right elbow swelling since 2009, initially started with a firm nodular mass measuring 1x1cm. It began ulcerating in October 2012. Biopsy of mass showed malignant lymphoid cell infiltration arranged in diffuse pattern. The malignant lymphoid cells display medium to large nuclei with occasional nuclei and extensive areas of necrosis. Immunohistochemically, the malignant cells are CD20 positive, LCA positive and Vimetin focally positive. She was diagnosed with diffuse large B cell lymphoma. Since the diagnosis, she defaulted follow-ups, and she managed the ulcer with daily povidone iodine, charcoal and tulle dressing herself. She sought hospital treatment on December 2015 when the wound was infested with maggots, increasing in size and foul smelling. Upon presentation to wound care team in May 2016, patient was cachexic looking, pale, and afebrile. There was a sloughy, exudative, foul smelling fungating wound with necrotic edges measuring 12x10cm over the medial aspect of right distal arm (Figure 1). Multiple large lymph nodes are palpable over bilateral axilla. Computed tomography (CT) of neck, thorax, abdomen and pelvis revealed bilateral axillary lymph node enlargement and no evidence of infra-diaphragmatic lymphadenopathy. Magnetic resonance imaging (MRI) of right humerus showed

necrotic and infiltrating lesion with intramedullary extension to lower humerus and to elbow joint.

The wound was assessed with "TIME" concept (T-Tissue management, I-Inflammation and infection control, M-Moisture balance, E-Epithelial advancement). Wound cleansed with distilled water. Hydrogel applied to soften the slough for the first and second cycle of dressing then nanocrystalline silver coated antimicrobial dressing was applied, in this case 10x10cm ActiCoat flex 3 by Smith and Nephew was used. The dressing was placed on the wound bed regardless of its side and moistened with distilled water. It is then covered with sterile gauze. Similar dressing procedure was done after every three days except hydrogel was no longer applied after the second cycle. No surgical debridement was ever done for the wound. Wound contracted and closed after two months of treatment (Figure 2).

DISCUSSION

Ulcerating tumour may present in a primary or secondary tumour. It ulcerates when tumours are left untreated. The cancerous cells invade the epithelium, infiltrates the blood and lymph vessels then penetrate the epidermis. The loss of vascularity and nourishment to skin, lead to tissue death and necrosis. Necrotic tissue is ideal for polymicrobial aerobic or anaerobic bacteria to reside. Anaerobic bacteria emit diamines like cadaverine and putrecine¹ resulting in malodour.

Cancerous wounds become chronic wounds when the size increases and show no signs of improvement. They have raised levels of matrix metalloproteinase and inflammatory cytokines, decreasing metalloproteinase tissue inhibitors and growth factors which are important factors for wound healing.²

The main objectives in managing cancerous wounds are to ensure adequate pain, odour, bleeding and exudate control.³ There is no consensus in the most effective management for malodorous cancerous wounds.¹ Radiotherapy, laser, hormone therapy or chemotherapy are still treatment for controlling fungating wounds.¹

Charcoal dressings are conventionally used in controlling odour. Antimicrobial dressings such as silver, honey and iodine based dressing are often used in chronic wounds to control colonization of bacteria which indirectly aids in



Fig. 1: 31 May 2016
Wound size 12 x 10 cm
Foul smelling and exudative, sloughy with necrotic edges



Fig. 2: 1 August 2016 (after 2 months)
Wound contracted and closed, no raw areas seen

alleviating odour. Sharp debridement in fungating wounds are not recommended. It causes excessive bleeding or could disseminate malignant cells into blood stream, hence natural debridement is preferred.³

Nanocrystalline silver coated dressings release highly reactive silver cations up to hundred parts per million when in contact with wound bed.⁴ These silver ions damage the bacterial cell wall by denaturing the DNA and RNA, inhibiting bacterial cell replication and eliminate wound odour.⁴

The indolent nature of the primary lymphoma like this case is compatible to six years survival without treatment⁵ and may have contributed to regression of the disease with closure of the fungating wound. However, this does not determine complete healing from cancer. The patient is still advised for radiotherapy or chemotherapy.

Patient was assessed six months after wound closure and no recurrence of ulcer noted. Bilateral axillary lymph nodes size were not increasing. Physical examination remained unremarkable. Patient claimed to be asymptomatic hence she refused for further treatment or follow ups.

CONCLUSION

Silver dressings can be considered in managing chronic fungating wound if other conventional methods show no improvement. It is cost effective, reduces wound infection, decreases the frequency of dressing changes and pain levels in cancerous wound.

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