The Effective Management of Fourniers Gangrene using a Combination of Flaminal® and Negative Pressure Wound Therapy

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Introduction

Fournier's gangrene (FG) is a perineal and abdominal necrotizing infection. It is most commonly found in middle-aged men with comorbidities such as diabetes mellitus. Initial symptoms are often indistinct and can rapidly progress to overwhelming infections with a relatively high mortality rate. It is crucial to make a prompt diagnosis so that the patient receives appropriate treatment(1).
Fournier's Gangrene is considered to be a polymicrobial infection caused by multiple organisms, including aerobic and anaerobic species such as Escherichia coli and Bacteroides fragilis. These microbes collaborate to release enzymes that cause tissue necrosis(2). The bacterial organisms that cause this necrotic infection release collagenases, which cause rapid tissue destruction at a rate of one inch per hour, allowing the infection to quickly spread from the genital region to the anterior abdominal wall and vital organs(3).

The Patient

This case study illustrates the management of a 56-year-old male who developed Fournier's Gangrene of the sacrum, bilateral groin regions and testicles. The patient had a medical history of type 2 Diabetes Mellitus. Surgical debridement was undertaken during the patient's hospital admission leaving an extensive wound measuring 28cm x 10cm x 3cm depth. Prior to this, the wound exhibited a combination of unhealthy granulation tissue, slough and areas of necrotic tissue. There were high levels of exudate, and the edges of the wound were very fragile but the surrounding skin was healthy. The patient had raised inflammatory markers, low haemoglobin levels, and was commenced on intravenous antibiotics due to the severity and causation of the wound, and for the treatment of osteomyelitis and ongoing chest sepsis.

Method

The patient was referred to the Tissue Viability Specialist Nurse for wound management post-surgery. The aims of treatment were to promote healthy granulation tissue growth, reduce the risk of further infection, manage exudate, protect the exposed bone which was evident post debridement procedure and reduce pain at dressing changes. The Tissue Viability Nurse commenced Flaminal® Forte as the primary dressing in conjunction with Negative Pressure Wound Therapy in order to achieve the intended outcome. Dressing changes were completed three times per week initially and decreased once exudate levels reduced.

Flaminal® Forte, an enzyme alginogel, was chosen for its antimicrobial protection and its ability to facilitate debridement of devitalised tissue. Flaminal® Forte contains high levels of alginate and is indicated for moderate to high levels of exudate. Whilst appropriately managing exudate levels, it also facilitates an ideal moist wound healing environment which, in this instance, not only helped to prevent the drying out of bone but also aided the autolytic debridement process. Negative pressure wound therapy was also implemented – this advanced wound management system helps to promote healing by delivering negative pressure to the wound bed and surrounding tissue.

Result

The wound management plan continued throughout the duration of healing, showing periodical reductions in size and after only eight weeks measuring 7cm x 4cm x 3cm depth. There were no further episodes of infection, and the exposed bone remained healthy until granulation tissue concealment was achieved which ultimately facilitated an uninterrupted application of negative pressure wound therapy. The dressing changes proved to be uneventful, and pain free and the patient expressed his amazement at how well the wound had responded. The length of treatment was 8 months.

Discussion

Diabetes Melitis is the most common risk factor for Fournier's gangrene, which typically manifests itself in men over the age of 55. It is a life-threatening condition that necessitates urgent medical attention and usually entails the inclusion of emergency surgical intervention and the introduction of broad-spectrum antibiotic therapy. With clinical training and early recognition, mortality can be reduced in patients with this condition(1).

Conclusion

This case study demonstrates the effectiveness of Flaminal® Forte to provide antimicrobial protection and to promote wound debridement whilst maintaining an optimum moist environment to maintain the health of exposed bone. It also highlights that Flaminal® Forte can be used in conjunction with Negative Pressure Wound Therapy, without prohibiting the therapy delivery, and at the same time, forming a protective layer between the newly formed granulation tissue and the foam filler used as part of this advanced wound management system.
The Tissue Viability Specialist Nurse concluded that all treatment aims were achieved and that Flaminal® will continue to form the basis of future wound management dressing choices within the scope of their tissue viability service.

References

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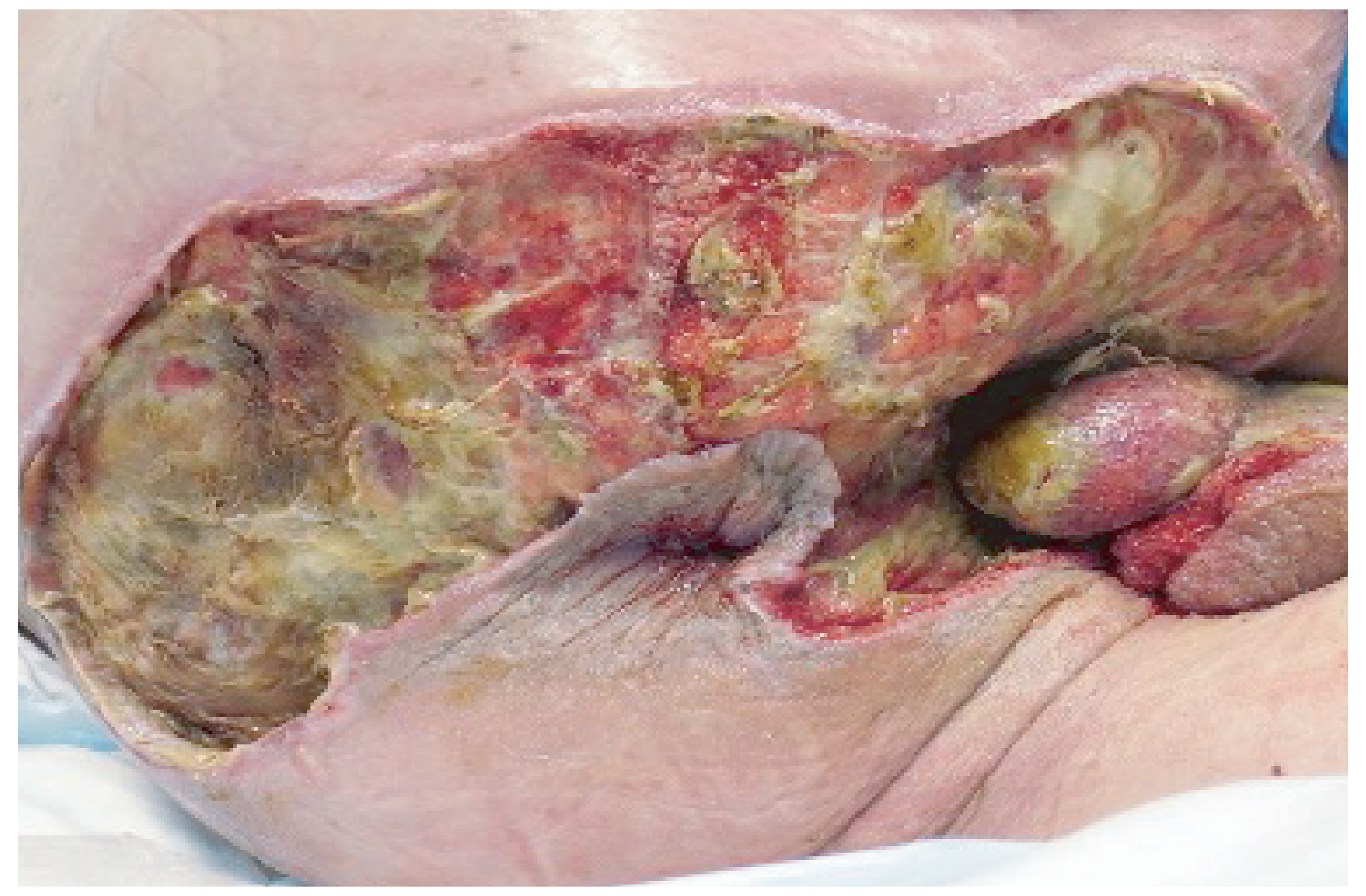
2. Wetterauer C, Ebbing J, Halla A, (2018) A contemporary case series of Fournier's gangrene at a Swiss tertiary care center-can scoring systems accurately predict mortality and morbidity?. World J Emergency Surgery, 13:25 www.researchgate.net/publication/355570763_Fournier's_Gangrene_Diagnosis_and_Treatment_A_Systematic_Review
3. El-Shazly M, Aziz M, Aboutaleb H, (2016) Management of equivocal (early) Fournier's gangrene . Therapeutic Advancies in Urology. 8:297-301. 1 www.researchgate.net/publication/355570763_Fournier's_Gangrene_Diagnosis_and_Treatment_A_Systematic_Review


Picture 1 - 19th Jan 24


Picture 2 - 2nd Feb 24


Picture 3 - 18th Mar 24


Picture 4 - 2nd Feb 24

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