

Successful Management of a wound resulting from a dog bite using an Enzyme Alginogel®

Geraldine McCormack & Tina McGarry, Burns & Plastics Clinical Nurse Specialists, Children's Health Ireland (CHI) at Crumlin, Crumlin, D12 N512, Ireland

Introduction

There are no global estimates of dog bite incidence, however studies suggest that dog bites account for tens of millions of injuries annually. Children make up the largest percentage of people bitten by dogs, with the highest incidence in mid-to-late childhood. The risk of injury to the head and neck is greater in children than in adults, adding to increased severity, necessity for medical treatment and death rates ⁽¹⁾.

Serious animal bites can become infected if they are not treated effectively, as the mouth contains a great deal of bacteria. Cellulitis symptoms can show up after just 24 hours of the bite. Symptoms can include redness, swelling, tenderness around the bite, and a discharge of pus from the wound. Initial treatment includes removal of any foreign bodies, encouraging the wound to bleed and irrigation. Prophylactic antibiotics should be commenced if the skin has been broken ⁽²⁾.

Case Report

The patient, a 15-year-old male, sustained a puncture dog bite to the palmer surface of the left hand, whilst playing with his friend's pet. The wound was initially washed by his parents and left exposed. The following morning there was evidence of swelling and cellulitis that was extending upwards from the hand to the arm. He attended the local hospital where he was admitted for a wound wash out and was commenced on intravenous antibiotics. The swelling continued to increase and was accompanied by purulent exudate; it was initially managed with a Primary Silver dressing, and he was referred to the plastics' trauma clinic in a national paediatric hospital. The patient was reviewed and was admitted for a further washout under anaesthetic; he attended theatre for a third time for debridement, incision and drainage, release of the carpal tunnel with the insertion of a betadine wick - the

wound was left open. Swab results indicated Streptococcus G bacteria and he remained in hospital for ten days.

Method

The patient attended the plastics' surgery nurse led dressing clinic 12 days post injury and assessment showed a large open full thickness wound with granulating margins. There were moderate volumes of serous exudate with lingering swelling to the hand and arm; the patient had full range of movement.

The wound management aims were to facilitate swift healing, which would enable the teenager to regain functionality and restore normal activities of daily life. In addition, consideration was given to infection prevention with use of an antimicrobial regimen, debridement of remaining devitalised tissue and exudate management.

Following assessment Flaminal® was commenced. Flaminal® Forte is a primary wound contact layer with antimicrobial properties. It is an enzyme alginogel® that also combines the benefits of hydrogels and alginates. Its alginate properties also balance exudate management whilst optimising a moist healing environment. Flaminal® Hydro, the sister of Flaminal® Forte was also utilised, to accommodate the differing stages of wound healing that occurred simultaneously. Flaminal® was also considered for its proven soothing effect and ease of application; enabling the parents to be included in dressing changes. A silicone non-adherent was also utilised to prevent adherence of the secondary gauze dressings. Dressings were initially performed in clinic by the Burns and Plastics Specialist Nurse every 2-3 days. When the teenagers' mother was proficient at dressing changes, the wound was managed at home and clinic visits were reduced to every 7-10 days.

Result

Both Flaminal® Forte and Hydro were used throughout the wound healing continuum. It took 21 days in total from the first visit to the dressing clinic and commencement of Flaminal® until the wound was completely healed; 34 days post injury. The wound remained infection free throughout the management regimen and the treatment aims were achieved. The patient was discharged from the Burns and Plastics service and referred to occupational health for scar management. Both the patient and family were delighted with the outcome.

Discussion

Dogs are part of everyday society and yet that can pose a serious threat if startled or instigated. Bite wounds are a continued health problem that can lead to serious complications including psychological trauma, disfigurement, infection, amputation, and even death.

Conclusion

This case report emphasises that Flaminal® is an effective primary dressing offering antimicrobial non-systemic protection that also facilitates exudate management. It promotes comfort with its soothing ability and endorses patient and family centred care by way of its simplistic application technique; thus, reducing the frequency of clinic visits and unnecessary costs to the healthcare service.

Due to its unique composition, the Flaminal® range can be used throughout the wound healing continuum. The Burns and Plastics Specialist Nurse concluded that the initiation of this management regimen deterred further hospitalisation.



7th Dec 21



15th Dec 21



19th Dec 21



31st Dec 21



7th Jan 22

References

1. World Health Organisation (2018) Animal Bites <https://www.who.int/news-room/fact-sheets/detail/animal-bites>
2. National Institute for Health and Care Excellence (2021) Scenario: Managing a cat or dog bite <https://cks.nice.org.uk/topics/bites-human-animal/management/managing-a-cat-or-dog-bite/#wound-management>

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