FLAMINAL® IN THE MANAGEMENT OF A GUNSHOT WOUND IN A 12 YEAR-OLD BOY

LARRAINE GAFFING
SENIOR SISTER, WARD 11, ROYAL VICTORIA INFIRMARY, QUEEN VICTORIA ROAD, NEWCASTLE UPON TYNE, NE1 4LP PRACTICE DEVELOPMENT PAEDIATRIC BURNS & PLASTIC SURGERY, WARD 11, ROYAL VICTORIA INFIRMARY (RVI), QUEEN VICTORIA ROAD, NEWCASTLE UPON TYNE, NE1 4LP

Summary
This poster describes the management of an accidental gunshot wound in a 12 year-old boy through the use of an antimicrobial enzyme alginogel (Flaminal®) to achieve wound debridement, restore bacterial balance and ultimately achieve healing.

Introduction
Gunshot injuries can cause extended soft tissue damage and traumatic contamination leading to infection. The injury sustained results from the release of energy by the bullet as it passes through the tissue and is determined by a combination of the speed, shape, size and stability of the bullet.¹ Initial observation of both the entry and exit wounds may not accurately reflect the full extent of damage. The resulting cavity is created by negative pressure and is associated with both the entry and exit points of the bullet passing through the tissue. Debris, air, clothing and bacteria are effectively sucked in thereby contaminating the wound.

The wound
A 12 year-old boy clay pigeon shooting at a gun club with his father, rested the barrel of a shot gun onto his left foot; the gun accidentally discharged. He was subsequently admitted to the regional paediatric plastic surgery centre with a 1cm entry wound to the proximal phalanx of the left foot with multiple metal plastic surgery centre with a 1cm entry wound to the first web space extending to the plantar aspect was heavily contaminated. The exposed and damaged (multiple bone fragments found) metataral phalangeal joint (MTPJ) and fragments were stabilized by the insertion of a Kirschner wire (also called a K wire, a thin rigid wire). The collateral ligament that helps to stabilise the MTPJ had also been completely destroyed in the accident. It was possible at this juncture for primary closure of the wound on the dorsum of the foot, but primary closure was delayed on the plantar aspect (Figure 2).

The techniques of closure for high-velocity and contaminated low-velocity wounds have developed from military experience and are documented from 1794. Further debridement and washout of the deficit was performed 48 hours after the initial surgery exposing a large cavity to the web space that was managed for two weeks with topical negative pressure (TNP).

2 days post-injury
With high-velocity wounds, the skin and subcutaneous tissue have traditionally required wide excision to fully expose the depths of the wound. This was undertaken 48 hours post-injury, as the first web space extending to the plantar aspect was heavily contaminated. The exposed and damaged (multiple bone fragments found) metataral phalangeal joint (MTPJ) and fragments were stabilized by the insertion of a Kirschner wire (also called a K wire, a thin rigid wire). The collateral ligament that helps to stabilise the MTPJ had also been completely destroyed in the accident. It was possible at this juncture for primary closure of the wound on the dorsum of the foot, but primary closure was delayed on the plantar aspect (Figure 2).

The techniques of closure for high-velocity and contaminated low-velocity wounds have developed from military experience and are documented from 1794. Further debridement and washout of the deficit was performed 48 hours after the initial surgery exposing a large cavity to the web space that was managed for two weeks with topical negative pressure (TNP).

On removal of sutures from the dorsum of the foot a deep sinus (2.5cm x 0.5cm) remained from the plantar aspect through the first web space. TNP was discontinued as the wound was sloughy and a decision made to utilize Flaminal® Forte to debride the wound and manage the wound bioburden (Figure 3).

16 days post-injury
Of bacteria was important. Flaminal® (Flen Pharma) is an antimicrobial enzyme alginogel, which combines the benefits of hydrogels and alginites with a patented antimicrobial enzymatic complex (glucose oxidase combined with lactoperoxidase). Enzyme alginogels may be indicated for long-term use in exuding wounds irrespective of the wound bacterial bioburden, as they are known to only target the cell walls of bacteria and not those of healthy cells such as keratinocytes.²

Discussion
The potential risk of infection including osteomyelitis was evidenced by the vigilance of the team with two visits to theatre for debridement and washout. Selecting a topical treatment with a proven broad-spectrum antibacterial activity including multi-resistant strains of bacteria was important. Flaminal® (Flen Pharma) is an antimicrobial enzyme alginogel, which combines the benefits of hydrogels and alginites with a patented antimicrobial enzymatic complex (glucose oxidase combined with lactoperoxidase). Enzyme alginogels may be indicated for long-term use in exuding wounds irrespective of the wound bacterial bioburden, as they are known to only target the cell walls of bacteria and not those of healthy cells such as keratinocytes.²

Conclusion
In wounds with sinus tracks there is a risk that these can fail to heal and become chronic problems, particularly if there is a risk of incomplete cleansing following a penetrating trauma such as a gunshot. Utilising a product such as Flaminal® that could be safely inserted into the sinus assisted the clinicians in protecting against microbial colonisation and combating infection, key factors in the management of this accidental gunshot wound, whilst promoting autolytic debridement and absorbing exudate.

References

Figures
Figure 1. A 12 year-old boy clay pigeon shooting at a gun club contaminating the wound.
Figure 2. Wound management with Flaminal® Forte
Figure 3. 6 days post-treatment with Flaminal® Forte there was evidence of granulation tissue at the wound margins but also some erythema localised to the pin site. Results from microbiology of a wound swab confirmed that the area was colonised with skin flora only, within a further 48 hours the erythema had disappeared and the wound was clean with the sinus decreasing to 1cm x 0.5cm. Healing was achieved after a further 6 days of treatment with Flaminal® (Figure 4).
Figure 4. The potent antibacterial activity including multi-resistant strains of bacteria was important. Flaminal® (Flen Pharma) is an antimicrobial enzyme alginogel, which combines the benefits of hydrogels and alginites with a patented antimicrobial enzymatic complex (glucose oxidase combined with lactoperoxidase). Enzyme alginogels may be indicated for long-term use in exuding wounds irrespective of the wound bacterial bioburden, as they are known to only target the cell walls of bacteria and not those of healthy cells such as keratinocytes.²
MANAGEMENT OF A RHOMBOID CYST THROUGH A PATIENT-CENTERED HOLISTIC APPROACH

LORRAINE JACKSON

COMMUNITY MATRON, PRUDHOE HEALTH CENTRE, ADDERLANE ROAD, PRUDHOE, NORTHUMBERLAND, NE42 5JE. EMAIL: lorraine.jackson@northumberlandcaretrust.nhs.uk

A Patient-Centred Approach

There is a great emphasis within the NHS of team work across ‘professional and organisational boundaries’ as well as placing the patient’s needs first so that the NHS can deliver care to patients in a way which is sensitive to their needs and expectations. Our approach to wound management is such that we combine the key principals of good holistic patient care, thus ensuring the needs of the patient as well as the wound are met.

Case History

A 56 year old male patient was referred by GP via General Surgeon to the Department of Plastics and Reconstructive Surgery, RVI Newcastle with a large rhomboid cyst on the back of his neck. Following excision of the cyst, the wound was closed using the rhomboid flap method. Histology confirmed the cyst was a malignant adnexal tumour (pilomatrixoma).

Nine days post-surgery the wound was odourous and appeared clinically infected. A large area of sloughy, necrotic tissue was observed, with high levels of exudate and the surrounding tissue had evidence of non-viability (Figure 1). Wound swabs confirmed the wound was MRSA positive.

Wound Healing Considerations:

The Patient
- self-employed and primary concern was ability to continue to work during the treatment of the wound

The Wound
- size of the wound
- shape of the wound
- condition of the wound bed
- level of exudate
- bacterial load
- location of wound

Patient care was shared between the Community Nursing Team and Department of Plastics and Reconstructive Surgery.

Dressings

There are many different types of antimicrobial wound care dressings available, many of which claim to have the features of the ideal antimicrobial dressing (Table 1). A variety of dressings were used on the patient, including Mepitran, Aquacel Ag and Silvercell, with little success before the Community Nursing team applied Flaminal®, 35 days post-surgery (Figure 2). Initially Flaminal® was applied only to the main wound with Aquacel Ag to more moist areas of the wound. Although under this new regimen MRSA persisted, treatment was eventually restricted to Flaminal® with Mesitran, Aquacel Ag and Silvercell, with little benefit most from continuing with this regimen, and with the agreement of the patient and the Department of Plastics and Reconstructive Surgery this regimen was continued.

Flaminal® Versus Skin Grafting - a Patient-Centred Approach

At this stage, the Department of Plastics and Reconstructive Surgery team was keen to graft the wound in order to facilitate closure. If skin grafting were successful wound healing may be achieved within as little as 4-6 weeks. However, due to the position of the wound, the patient would have been unable to drive, as pressure from the car seat may have interfered with graft healing. With the patient being self-employed, the financial implications of not working were significant. Under the existing regimen the patient was able to continue his work uninterrupted. Already there was evidence of healing under the latest regimen (Figure 3), and the Community Nursing team believed the wound and the patient would benefit most from continuing with this regimen.

Conclusion

There is no reason to believe that this wound would not have healed under any regimen other than through the use Flaminal® as a wound care dressing. However, we aim to deliver care that is sensitive to the patient’s needs and in this instance, having explored various options Flaminal® was considered the optimal treatment because it met the needs of the wound by managing exudate, facilitating healing and it met the needs of the patient by allowing him to continue working throughout the treatment.

References

MANAGEMENT OF AN ANTEREOLATERAL THIGH FLAP WOUND

KATHLEEN CORNELIUS
STAFF NURSE, FREEMAN HOSPITAL NEWCASTLE, HIGH HEATON, NE7 7ON

Introduction
Treatment of tonsillar carcinoma is complicated. It requires a multidisciplinary approach and must be individualized to the patient for the best possible patient outcome. Accepted treatments include any combination of surgery, radiotherapy, and chemotherapy.

The anteriolateral thigh (ALT) flap has emerged as a popular option for reconstruction of head and neck defects. Advantages include the provision of a large amount of tissue and so is suited for coverage of a large defect, such as a neck resection, whilst ensuring minimal donor site morbidity and preserving major muscle function. Management of the ALT site poses a unique problem because of the large area of tissue that may be harvested. Generally, the ALT site can be primarily closed or grafted with a split thickness skin graft if the area is too broad. Factors that affect the rate of healing of such a site may include the site, size, depth, infection, choice of dressing and friction as well as the overall health of the patient. This communication describes the management of an ALT flap wound site following a tumour-based reconstruction with an ALT flap.

Case history
A 54 year old patient with a medical history of COPD, alcohol excess, psoriasis, heart bypass operation and obstruction (non malignant) was diagnosed with left tonsil tumour following a panendoscopy and biopsy and was treated with radiotherapy. Five months later, the patient was diagnosed with tonsillar carcinoma, radio residual squamous cell carcinoma, left tonsil with neck metastasis.

Following multidiscipline discussion the patient was booked for left tonsil tumour following a panendoscopy and biopsy and was treated with radiotherapy. Five months later, the patient was diagnosed with tonsillar carcinoma, radio residual squamous cell carcinoma, left tonsil with neck metastasis.

The anteriolateral thigh (ALT) flap has emerged as a popular option for reconstruction of head and neck defects. Advantages include the provision of a large amount of tissue and so is suited for coverage of a large defect, such as a neck resection, whilst ensuring minimal donor site morbidity and preserving major muscle function. Management of the ALT site poses a unique problem because of the large area of tissue that may be harvested. Generally, the ALT site can be primarily closed or grafted with a split thickness skin graft if the area is too broad. Factors that affect the rate of healing of such a site may include the site, size, depth, infection, choice of dressing and friction as well as the overall health of the patient. This communication describes the management of an ALT flap wound site following a tumour-based reconstruction with an ALT flap.

Case history
A 54 year old patient with a medical history of COPD, alcohol excess, psoriasis, heart bypass operation and obstruction (non malignant) was diagnosed with left tonsil tumour following a panendoscopy and biopsy and was treated with radiotherapy. Five months later, the patient was diagnosed with tonsillar carcinoma, radio residual squamous cell carcinoma, left tonsil with neck metastasis.

Following multidiscipline discussion the patient was booked for left tonsil tumour following a panendoscopy and biopsy and was treated with radiotherapy. Five months later, the patient was diagnosed with tonsillar carcinoma, radio residual squamous cell carcinoma, left tonsil with neck metastasis.

The anteriolateral thigh (ALT) flap has emerged as a popular option for reconstruction of head and neck defects. Advantages include the provision of a large amount of tissue and so is suited for coverage of a large defect, such as a neck resection, whilst ensuring minimal donor site morbidity and preserving major muscle function. Management of the ALT site poses a unique problem because of the large area of tissue that may be harvested. Generally, the ALT site can be primarily closed or grafted with a split thickness skin graft if the area is too broad. Factors that affect the rate of healing of such a site may include the site, size, depth, infection, choice of dressing and friction as well as the overall health of the patient. This communication describes the management of an ALT flap wound site following a tumour-based reconstruction with an ALT flap.

Case history
A 54 year old patient with a medical history of COPD, alcohol excess, psoriasis, heart bypass operation and obstruction (non malignant) was diagnosed with left tonsil tumour following a panendoscopy and biopsy and was treated with radiotherapy. Five months later, the patient was diagnosed with tonsillar carcinoma, radio residual squamous cell carcinoma, left tonsil with neck metastasis.

Following multidiscipline discussion the patient was booked for left tonsil tumour following a panendoscopy and biopsy and was treated with radiotherapy. Five months later, the patient was diagnosed with tonsillar carcinoma, radio residual squamous cell carcinoma, left tonsil with neck metastasis.

Initial wound measurements were: maximum width 9cm, maximum length 16cm and maximum depth 2cm.

Day 18
The wound was dressed daily with Flaminal® Forte until exudate levels decreased and then dressed with Flaminal® Hydro. By Day 18, dressing changes were made every other day or as needed and the wound measured 8cm by 15cm.

Day 46
As the wound progressed through the healing process the wound became two; measurements were 14cm by 4cm and 8.5cm by 6cm.

Discussion
For the wound to achieve healing through secondary intention a suitable wound care product must be selected. The main principles of wound management in this context are 1:

- Protect the area from dehydration once exudate levels decrease
- Prevent further mechanical trauma, to reduce pain
- To minimize leakage of exudate
- Promote rapid, infection-free healing
- Be practical to apply and remove
- Require minimal maintenance
- Be inexpensive

The patient presented a significant challenge as he was immunosuppressed and required a feeding tube. Further, the ALT site was infected. Therefore, treatment of the ALT site was with Flaminal® (Flen Pharma), an enzyme alginate®. Flaminal® has properties of a hydrogel and an alginate combined with an antimicrobial enzyme complex (glucose oxidase combined with lactoperoxidase stabilized with guaiacol). As a result of its unique structure, Flaminal® can be applied to dry or exuding wounds to facilitate healing, and it can be applied to any wound irrespective of its bacterial bioburden. Flaminal® is available in two formulations: Flaminal® Forte for moderate to heavily exuding wounds and Flaminal® Hydro for low to moderately exuding wounds. Therefore Flaminal® was considered as a suitable wound care product for the management of the ALT site.

Conclusion
As a result of the multiple disciplines involved, we were able to achieve wound healing by secondary intention in a highly challenging wound using Flaminal®.

Reference List
MANAGEMENT OF CHRONIC FACIAL WOUNDS IN INFANTS AND CHILDREN WITH HERLITZ JUNCTIONAL EPIDERMOLYSIS BULLOSA (HJEB)

JACKIE DENYER

CLINICAL NURSE SPECIALIST EPIDERMOLYSIS BULLOSA (PAEDIATRIC), GREAT ORMOND STREET HOSPITAL FOR CHILDREN NHS FOUNDATION TRUST, LONDON AND DEBRA UK. jackie.denyer@gosh.nhs.uk

Introduction

Epidermolysis bullosa (EB) is an umbrella term for a group of genetically determined skin fragility disorders. Its effects vary between painful blistering of hands and feet, through increased disability with a greatly increased risk of squamous cell carcinoma to, in its most severe form, death in early infancy. Whilst work is progressing towards stem cell and other therapies, at the present time management focuses on nutritional supplementation, pain control and skin and wound care. In severe forms of EB chronic wounds develop and healing is compromised by nutritional deficiencies, continual trauma, colonisation and infection and the underlying gene defect.

There are 4 main types of EB with Herlitz junctional EB (HJEB) being the most severe form. The prognosis of HJEB is poor with a predicted life expectancy of less than five years and the majority will die in infancy. Death results from the combination of failure to thrive and respiratory distress from repeated laryngeal blistering and subsequent scarring. One of the most distressing symptoms is the development of large areas of facial ulceration which are notoriously difficult to heal. These wounds result from continual trauma to the fragile skin and in combination with poor nutrition and chronic anaemia these are very difficult to manage. Exuberant over-granulation tissue which is friable and bleeds easily is a feature in those with junctional EB. It is difficult to manage these wounds with sheet dressings due to the risk of traumatic removal by the child and problems with safe fixation. Some of these children have tracheostomies which could be occluded by a displaced dressing leading to an obstructed airway.

This small study will demonstrate the combination of Flaminal® enzyme alginogel and a very potent topical steroid ointment leading to successful healing of chronic facial ulceration.

Method

Children and infants with HJEB who had chronic facial wounds were selected for the study. Thankfully HJEB is a rare disease and therefore numbers were small with four children selected for the initial study.

Factors considered were the requirements of the treatment to:
• Be pain free with no stinging
• Be atraumatic
• Reduce critical colonisation and infection
• Reduce over-granulation tissue
• Have the potential to heal wounds

The wounds were initially treated by application of Flaminal® (Flen Pharma). Flaminal® is an enzyme alginogel which has the ability to delint, balance moisture levels and is a very effective antimicrobial agent. It contains the natural occurring enzymes glucose oxidase and lactoperoxidase which promote effective activity without the potential to damage healing cells. Flaminal® contains alginate which balances moisture levels within the wound. The product is easy to apply and does not sting which is a very important consideration in the management of infants and children.

Facial wounds were covered with a thick layer of Flaminal® once a day. Flaminal® Forte was used on moist areas and Flaminal® Hydro to areas of cratering and drier wounds. The wounds were left uncovered. After one week of this treatment clobetasol propionate ointment was applied in a thin layer 12 hours after the application of Flaminal®. It was necessary to continue daily treatment with Flaminal® in conjunction with the steroid ointment in order to control the bioburden as these wounds are continually contaminated by food and secretions.

Results

• 1 child progressed to full healing
• 1 infant demonstrated initial healing but died from complications of HJEB aged 13 months
• 2 children are receiving treatment and their wounds are healing
• Timescale to healing: 3 to 12 months

Neither Flaminal® or clobetasol caused any discomfort on application or during wear time.

Discussion

Using very potent topical steroid ointment to the face of infants and children is unusual and there is risk of absorption resulting in Cushing’s disease. Care must be taken to avoid contact with the eyes which could induce glaucoma. The treatment needs to be continued for several months in order to achieve healing. However, as the wounds were left uncovered much of the cream was rubbed off leaving reduced capacity for absorption. In addition, as the wounds reduced in size a smaller amount of topical steroid was needed. Following success using this combination of treatments this method will be prescribed at the onset of the development of facial wounds.

It is the author’s opinion that criticism of this off licence treatment can be balanced by marked improvement in quality of life of both the child and their family.

Conclusion

The combination of Flaminal® and potent topical steroid ointment has proved to be a valuable tool in management of facial lesions in those with HJEB. Although life expectancy will not be improved, healing these wounds reduces pain and also reduces unkind comments and accusations of abuse from the general public.

Case Study

James is a 3 year old boy with Herlitz junctional EB. He developed lesions on his upper face and around his umbilicus shortly after birth. Over the following few weeks his finger and toe nails were shed and as expected with this type of EB the nail beds remained open. Aged one year, James developed acute respiratory obstruction and needed emergency surgery to create a permanent tracheostomy.

James had a large wound extending over his face which suffered continual trauma from rubbing and this was made worse when he resisted suction from his tracheostomy. The wound was encrusted with food, appeared critically colonised and had an offensive odour. Staphylococcus aureus and Pseudomonas were cultured on wound swabs but not treated with systemic antibiotic therapy. The extent of the wound meant it pulled on the skin below his eyes causing ectropion which resulted in reduced tear film production and subsequent repeated painful corneal abrasions.

After a year of treatment with Flaminal® and clobetasol James’s facial wound healed completely and has remained so. James is now three years old and attends a nursery school for children with special needs where he communicates using an iPad as he is unable to vocalise. His parents are able to take him to the park and other public places without receiving verbal abuse.

Figure 1. James aged 1 year

James is a bright inquisitive child who loved to go out but his parents found it difficult to cope with the unkind comments they received when taking him anywhere apart from hospital visits and attending respite at the local children’s hospice. Cleaning of the wound was attempted but resisted greatly by James which led to further damage to his fragile skin and by crying he increased the secretions from his tracheostomy and required additional suction.

Flaminal® Forte was applied daily to the wound in a thick layer. Although initially fearful of his face being touched James allowed this to continue once he realised it did not sting. Areas of crusts receiving a daily application of Flaminal® Hydro which was equally well tolerated. After 7 days application of Flaminal® the wound appeared much cleaner and odour was no longer a problem.

Clobetasol propionate ointment was then commenced daily in a thin layer. Flaminal® was continued for several more weeks 12 hours after application of clobetasol and then stopped and clobetasol continued daily. However after a few days the wound showed signs of colonisation and Flaminal® was restarted.

The over granulation tissue rapidly subsided and the wound slowly reduced in size. The distressing complication of ectropion was alleviated and James was able to close his eyes fully. He has not suffered any more corneal abrasions. Blood pressure was monitored due to the possible absorption of topical steroid but remained within normal limits.

Figure 2. 6 months post-treatment with Flaminal® and clobetasol

Figure 3. James aged 3 years
MANAGEMENT OF PSEUDOMONAS INFECTED BILATERAL LEG ULCERS WITH FLAMINAL®

HELEN WORMALD
TISSUE VIABILITY CNS, KING’S COLLEGE HOSPITAL NHS FOUNDATION TRUST, DENMARK HILL, LONDON SE5 9RS

Introduction
Approximately 1-2% of the population will suffer from the chronic disabling condition of leg ulceration, with chronic venous insufficiency affecting up to 50% of the adult population (Venous Forum, 2011). It is recognised that about 70% of ulcers are venous in origin, 10-15% are arterial, with a proportion of leg ulcer patients (about 15%) having mixed aetiology of both venous and arterial disease (Briggs and Closs, 2003).

This case study describes the management of Mrs W, a 73-year-old female with bilateral, circumferential, mixed aetiology ulceration. Mrs W had a medical history of hypertension, ischaemic heart disease, diverticulitis, polymyalgia, fibromyalgia and osteoporosis.

Method
Mrs W had an ulcer measuring 14cms x 10cms on her left leg which was 100% sloughy (Figures 1 and 2), and two areas of ulceration on her right leg measuring 6cms x 3cms and 2cms x 1.5cms comprising 55% slough and 50% necrotic tissue (Figures 3 and 4). The wounds to both legs were heavily exuding, painful and also malodorous with Pseudomonas spp isolated from a wound swab sent for culture and sensitivity. These factors combined, caused Mrs W heightened levels of pain and anxiety, which became more acute at dressing changes. Patients describe wound-related pain as all-encompassing and as one of the most devastating aspects of living with a chronic wound (WUWHS, 2007). Previous treatments tried in the community included honey and hydrofiber dressings which had increased Mrs W’s pain and anxiety level.

The aims of treatment were to autolytically debride the necrotic and sloughy tissue whilst protecting the delicate granulation tissue and peri-wound skin. Additional considerations were pain management, reduce wound bioburden and control exudate levels. Flaminal® Hydro was commenced to debride the devitalised necrotic tissue, whilst Flaminal® Forte was selected for the wet and sloughy areas and to reduce the wound bioburden. Mrs W was also commenced on intravenous antibiotics due to systemic infection. A soft silicone dressing was selected as the secondary dressing to minimise the potential for pain and trauma to the skin, already damaged by oedema and excoriation. Surgipads were used to cover and absorb exudate; these were secured with orthopaedic wool and a crepe bandage from toe to knee, thus minimising the risk of further trauma and avoiding the need for adhesive dressings or tape on such fragile tissue.

Dressings were changed every two days with Mrs W having morphine sulphate immediate release oral solution (Oramorph) prescribed for immediately prior to the procedure.

Results
There was a marked improvement with the new dressing regimen within seven days and dressing change was reduced to three times a week, with reduction in oedema and improvements to the peri-wound skin.

The introduction of Flaminal® Forte combined with a silicone secondary dressing reduced pain and trauma, controlled exudate and reduced wound bioburden (Figures 5–8). The dressing regimen was acceptable to Mrs W since there was a marked reduction in pain at dressing change which reduced her anxiety levels. As the bioburden in the wounds reduced and the slough and necrotic tissue were debrided there was a concomitant reduction in exudate levels.

This in turn permitted time between dressing change to be increased to only twice weekly prior to her discharge home.

Discussion
A heavy bacterial burden in a wound encourages tissue degradation and slough formation, thus preventing healing. Flaminal®, an enzyme alginoigot, is an antimicrobial dressing; Flaminal® Hydro is indicated for lightly to moderately exuding wounds whilst Flaminal® Forte is indicated for moderately to heavily exuding wounds. It contains two naturally occurring antimicrobial enzymes, glucose oxidase and lactoperoxidase which kill bacteria without damaging healing cells (White 2006). Flaminal® has the capability to absorb excess exudate while remaining in a gelled state, promote debridement, control wound bioburden and reduces pain at dressing change.

Conclusion
Debridement and reduction in wound bioburden were facilitated by Flaminal® in the management of this complex patient and wound. Dressings which reduce bacteria in a wound such as Flaminal® will help to autolytically debride slough and promote healthy granulation without causing additional pain and trauma for the patient.

References
Venous Forum of the Royal Society of Medicine, Berdidge D, Bradbury AH, Davies AH et al. (2011) Recommendations for the referral and treatment of patients with lower limb chronic venous insufficiency (including varicose veins) Thrombosis 26 (3): 3-9
The Challenge of Managing Chronic Wounds When Quality of Life is a Significant Issue

Pauline Graham-King BSc (Hons) RGN OND

EB Clinical Nurse Specialist-Adults (North) Debra, Eals Lodge, Tarset, Hexham, Northumberland NE48 1LF pauline.grahamKing@gstt.nhs.uk

Epidermolysis bullosa

Epidermolysis bullosa is a group of inherited bullous disorders characterized by blister formation in response to mechanical trauma. There are approximately 5,000 sufferers in the UK and around 500,000 worldwide (equivalent to 1 in 17,000 live births). Patients with recessive dystrophic EB (RDEB) lack the gene that encodes for the protein collagen VII. Without collagen VII, minimal trauma or friction causes the epidermis to separate from the dermis and so blisters form with ease which may then develop into wounds. The internal mucosa is also affected, including the mouth, the oesophagus and corneas. Development of chronic wounds is common as is healing with scarring. Treatment is symptomatic with skin and wound management forming a large part of care.

Wound management in RDEB patients is a complex process and wound care becomes a way of life for affected individuals and their carers. For some patients, symptom control is a more realistic objective than healing. Wounds typically seen in EB range from superficial blister sites that heal with the application of non-adherent dressings, to chronically wounded areas that never seem to heal. Pain, infection and exudate management all present immense challenges. Furthermore, dressings are limited to those that do not adhere to the fragile peri-wound skin. This communication describes the challenge of wound management in a young patient with severe RDEB.

The patient

A 24 year old female patient with severe RDEB suffered head wounds following pediculosis (infestation of head lice). The wounds have gradually become worse over the past 6 years. Many dressings and ointments have been tried, with no improvement. The challenges faced in managing the wounds include, excessive exudate which can leak into the aural canals and eyes causing ear infections, conjunctivitis and blepharitis; infections, in particular Pseudomonas; and possible biofilm formation; extreme sensitivity of the scalp with pain on dressing change; application of a hat or wig which the patient finds very hard to tolerate especially in hot weather.

Treatment with Flaminal®

Although there is no data on the use of Flaminal® in EB patients, existing data supports the use of Flaminal® in heavily exuding wounds and in wounds at high risk of infection. Further, studies have shown that dressing-associated pain may be reduced with Flaminal®. With the patient’s full agreement, it was decided to change the plan of care to using Flaminal® as the primary dressing. Flaminal® Hydro was applied as a thick layer with extreme care using a soft swab and then very carefully smeared onto the scalp wounds. Mepitel and Mepilex Transfer were selected as secondary dressings as Flaminal® did not adhere to them and Actiwrap bandage was used to secure the dressings.

Results

Exudate levels increased initially and the dressing had to be changed on a daily basis for the first five days. As exudate levels decreased, dressing changes were reduced to the patient’s usual regime of every three days. Malodour also decreased. Flaminal® aided debridement and was well tolerated. The application of Flaminal® helped cool the patients head and so helped her feel much more comfortable. The wounds did not heal, and are unlikely to heal due to the RDEB, however they had started to granulate around the edges; they were much cleaner and demonstrated no sign of infection. The use of Flaminal® to treat one area of chronic wounds improved the patient’s quality of life so much so that she then applied Flaminal® to chronic wounds on other areas of her body, especially her feet.

Discussion

Wound management of RDEB patients presents a unique challenge. As the barrier function of the skin is severely compromised prevention of infection is a key consideration. In addition, dressing changes may be painful, especially if inappropriate dressings are used. Clinical evidence tends to be limited to case series due to the rarity of the disease. Therefore, good wound care is largely dependent on practitioner’s preference, cost and patient preference.

Flaminal® is an enzyme alginogel with a unique antimicrobial enzymatic complex (glucose oxidase combined with lactoperoxydase, stabilised by guaiacol [G/G]), it is indicated for use on a wide range of wounds where there is the potential for an acquired infection and is available in two formulations depending on exudate levels.

Conclusion

Flaminal® has become a much welcomed addition to the highly limited armamentarium of wound care products suited for the management of chronic wounds in RDEB.

DebRA

Registered Charity No: 1084958.
www.debra.org.uk Telephone No; 01344 771961.

DebRA is a registered charity and provides information, practical help and advice from specialist nurses, social and welfare workers. It is also a means of supporting patients, families and allied healthcare professionals via a website, newsletters and conferences, patient group meetings, home visits and specialist clinics.

Reference List