CASE STUDY

Pyoderma gangrenosum and the effects of Manuka honey

A clinical account by Katy Martin-Skurr, Nursing Consultant

Patient
Female, 56, Crohn's disease

Source
Katy Martin-Skurr, Nursing Consultant, Omnigon, New Zealand

Problem
Pyoderma gangrenosum, parastomal hernia

Solution
Aurum® Profile with Manuka honey, Aurum® Convex with Manuka honey and HyperSeal® Washers with Manuka honey

INTRODUCTION

The use of medicinal honey in wound healing is well documented in ancient times by both Greek and Egyptian healers. With the discovery of antibiotics in the 1930s use of these traditional wound healing products waned. In recent times the appearance of antibiotic resistant bacteria has seen a resurgence of interest in more traditional non pharmaceutical wound healing treatments.

This case study will present the care of Hilary who was admitted with an acute exacerbation of Crohn's disease and went on to develop pyoderma gangrenosum.

Hilary has consented to the use of her information for this presentation. All names used are pseudonyms.

WHO IS HILARY?

Hilary is a 56 year old Caucasian women who presented acutely with a known history of Crohn's disease. On presentation she was nutritionally compromised weighing 45kg, she was dehydrated with abdominal distention, pellagric, experiencing severe abdominal pain and had malodourous diarrhoea.

Hilary acknowledged that her health had been deteriorating for some time.

Medications on admission included Prednisone, Azathioprine, Pentaza and Allopurinol.

Hilary is a heavy smoker with an intake of 3-4 standard alcoholic drinks per day. She lives with her supportive husband Bruce. They have two adult children who live locally.

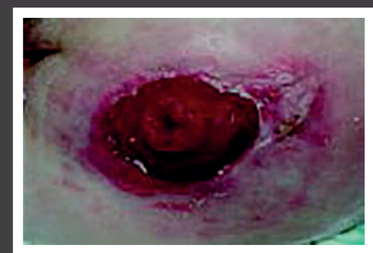

Fig 1. Hilary's ulcerated lesion

SURGICAL TREATMENT

Hilary's condition on admission was critical and she was immediately prepared for surgery. A CT scan confirmed air in her abdomen and the likelihood of perforation.

Surgical Procedure

- Subtotal colectomy with formation of an end ileostomy and mucous fistula

A mucous fistula is formed to allow the expulsion of gas and mucous from the distal non-functioning end of the colon post resection. Hilary's mucous fistula was formed due to concern that her remaining rectal stump may break down causing abdominal sepsis.

Hilary spent 14 days in the high dependency unit on total parental nutrition and potassium replacements. She was discharged 24 days after admission with nutritional supplements.

While Hilary initially struggled with the psychological adjustment needed to manage life with a stoma I had no specific concerns for her on discharge.

Hilary's very thin body habitus had contributed to significant creases across the parastomal plane however these had been successfully managed with a competitor pouch and seal.

While Hilary's initial recovery had been un-eventful this was not to continue.

Second Admission

On review in her home four weeks post-surgery and in her first week of discharge Hilary was found to be cachexic with further weight loss. Now weighing 37kg, she was hypotensive 88/40, severely dehydrated and at risk of renal impairment.

It was apparent that once again Hilary had not taken any affirmative action regarding her deteriorating health. She was immediately re-admitted to hospital and found to have an oesophageal ulcer. After re-hydration and the initiation of omeprazole therapy and with further dietary input she was again discharged.

During this admission it was noted that Hilary had developed an ulcerative lesion by her stoma. (see Fig 1)

Third Admission

Review in the stomal therapy clinic at 10 weeks post-surgery revealed that Hilary was again acutely unwell. She had severe abdominal pain which she rated as 10/10, was again hypotensive and dehydrated. In spite of all advice Hilary had again neglected her deteriorating health. A CT scan revealed multiple intra-abdominal abscesses in the right iliac fossa, and the pyloric and retro splenic regions. After conservative treatment with antibiotics Hilary was again discharged.

Fig 2. Pyoderma gangrenosum

Fig 3. Use of Welland Manuka honey seal and Aurum Convex pouch

Fig 4. Healing

Fig 5. Pyoderma gangrenosum healed

PYODERMA GANGRENOSUM

The ulcerated lesions around Hilary's ileostomy were diagnosed as Pyoderma gangrenosum.

Pyoderma gangrenosum (PG) is a rarely occurring, destructive, neutrophilic dermatosis condition with distinctive clinical characteristics. Lyon et al [1] reported an incidence of 0.6% occurrence in practice or 1 per 100,000 people. Typically PG affects young to middle aged adults with a slight predominance in females. In 50% of cases PG will be associated with a systemic disorder such as inflammatory bowel disease, rheumatoid arthritis and some haematological conditions [1, 2].

PG effects the legs, buttocks and abdomen, however it effects a peristomal skin area far more commonly.

The majority of patients with PG will have an ileostomy as opposed to any other type of stoma [1]. It has been suggested that the unique environment around an ileostomy and the repeated trauma involved in pouch removal lays the foundation for the opportunistic development of parastomal pyoderma gangrenosum (PPG).

While the ethology of PPG is unknown the clinical presentation follows a typical pathway:

- A painful pustule which rapidly ulcerates
- Extremely painful ulcers which have a bluish colouring (see Fig 2)
- Undermining and ragged edges

Surgery is contraindicated in the management of PPG as it usually results, not in healing but in enlargement of the ulcerated area.

The non-healing ulceration of PPG has a significant morbidity for stoma management. Morbidity from pain, discomfort, bleeding and exudate impairs pouch adhesion causing leaks and diminished quality of life.

Once resolved PPG generally results in the formation of scar tissue which can be problematic for future pouching.

Hilary's PPG was initially treated with a competitor powder, a Welland HyperSeal washer with Manuka honey and a Welland Aurum Convex with Manuka honey pouch (see Fig 3). The rationale for this product selection was to achieve healing of the PPG ulcers with the Manuka honey. (See Manuka honey)

Hilary's PPG healed rapidly and has not recurred (see Fig 4 & 5). Prior to the use of the Welland pouches Hilary was changing her pouch daily. Her sense of security has improved and she now has a leak free two day wear time.

When Hilary developed a parastomal hernia we moved to one of the new Welland Profile with Manuka honey pouches. The flexibility of the Welland Profile flange easily moulded over Hilary's hernia and gave a secure fit while still giving the benefits of Manuka honey for wound healing.

SCAN FOR MORE INFORMATION

MANUKA HONEY AND WOUND HEALING

Manuka honey has several actions which contribute to wound healing.

Antibacterial Action

Manuka honey has high concentrations of the antibacterial compound methylglyoxal (MGO) [5]. This has been reported to effectively inhibit the growth of up to 60 types of bacteria including both aerobes and anaerobes either gran positive or negative [4]. Included in the list of 60 bacteria inhibited by Manuka honey are MRSA, E coli, Salmonella and Staph aureus. Unlike other honeys the antibacterial properties of Manuka honey are both heat and light stable.

A consequence of Manuka honey's antibacterial action is the effect of deodorising offensive wound odours created by bacteria [5].

Moist Wound Healing

Honey is hygroscopic drawing moisture from the environment and dehydrating bacteria to prevent growth. The high sugar content of honey osmotically draws fluid to a wound facilitating a moist wound healing environment. A moist wound healing environment facilitates easy dressing removal preventing future trauma and pain.

pH Management

Wounds which are bacteria colonised, and ileostomy output share the feature of having a high skin damaging alkaline pH of 7 or above. With a low ph in the range of 3 Manuka honey has an acidification effect which neutralises alkaline damage to the skin.

Wound Pain

Most wound pain results from exposure of nerve endings to the prostaglandins which are produced as a result of the inflammatory process and from the pressure created by oedema of the wound. Manuka honey's anti-inflammatory and osmotic actions reduce the wound swelling and therefore the pain from a wound.

CONCLUSION

My experience with Hilary and the use of a pouch with Manuka honey incorporated into the hydrocolloid flange in the healing of her PPG has led me to consider the use of Manuka honey as both a prevention and a treatment for stomal skin damage. I believe that the use of Manuka honey pouches in the healing of pyodermal lesions is worthy of further investigation.