**Ulcus cruris venosum**

A 37 year old Rumanian man developed thrombosis in ’92 (then aged 20) on his right and in ’93 on his left leg. As this was not treated correctly, his first wounds developed in ’95. In ’02 a skin transplantation was performed, without success. His chronic venous insufficiency (CVI) was at stage II. In ’06 he was hospitalized again and a skin infection (the gram-negative *Bacillus proteus*) was diagnosed, as well as CVI stage III and the chronic ulcus cruris venosum. This was established using a Doppler test. He was then treated with systemic antibiotics, peripheral vasodilator, platelet anti-aggregation and antiseptic solutions and ointments. After 9 days of hospitalization the patient was discharged, because the dermatologists observed a positive evolution of the wounds. The patient was prescribed Pentoxifilin (3tb/dy) for intermittent claudication, aspirin (½ tb/dy). Local chloramine compresses and silver sulphadiazine ointments were to be applied topically.

The patient was presented in ’09 (fig. 1, 2) and it became apparent that the wounds had had little progress. Some granulation could be observed, but there was still slough and inflammation in the peri wound area, as well as maceration on the wound edges. The man could not be hospitalized again, because of the costs and his position in the household to care for the small children. He was still mobile (he rode his bicycle a lot), but was still a smoker. Air pollution in the city in which he lives is high, and the hygienic circumstances cannot be compared to West European standards. His medication was changed to Indometacinum, Pentoxifilin, Ibuprofen, Ketoprofenum, Acetylsalicilc Acid, micronized purified flavonoidic fraction (diosmin/hesperidin) as a phlebotonic drug and a vascular protecting agent. The legs were very sensitive and painful. In May 2009 the treatment with the honey-based L-Mesitran Soft was started and he started to use 3x/dy 1.000mg Vitamin C supplement, 1x/dy 50mg Zinc Gluconate and 1x/dy 100mg Q10.

**Product:** L-Mesitran Ointment & Soft  
**Case study done by:** Mrs. J. Willemesen-v.d.Kolk, R.N., Natural Health therapist, Apeldoorn, Holland

**Method**

The wounds were first cleansed with an enzymatic cleanser (Pronotosan, BBraun), then the honey gel (L-Mesitran) was applied. This was covered with a regular gauze. The patient was instructed how he himself could apply the dressings daily.

**Results**

In the period May-June the inflammation had gone and the wound were less deep. Fig. 3 & 4 show clear signs of granulation and epithelisation. No infection was observed. However, the legs were a little bit swollen.

A month later, the left leg showed good progress and the wound continued to epithelialise further (fig. 5). The right leg (pic. 6) seemed to show slough again. The wound size had however decreased a little bit. The patient reported that after application of the honey-based products he sometimes experienced some pain for an hour or two, thereafter the pain was gone. The removal of the dressings is painless.
On 22/7 the left leg wound was ± 7x16cm and the right leg wound was ± 8x15cm. The slough on the right leg had decreased. On the right leg the Soft treatment would be continued. The left leg would be treated with Mesitran Ointment, because it was thought, this might speed up granulation/epithelisation in that leg. On Aug 10, the left wound measured ± 15.2 cm in length (decrease of 1cm). The right leg wound was ± 7.5 x14.5cm, also a decrease in size. The appearance of the wounds had however not dramatically changed.

On Aug 28, both wounds were finally free from slough. The left leg showed good epithelisation and measured ± 15cm and had decreased in length slightly. The right leg wound had not changed in size noticeably.

On Sept 28, the patient had significantly less pain and the wounds produced less exudate. Treatment is now done every other day. The right leg is treated with Soft, the left leg with Ointment. Although the slough seemed to have returned, the wounds were less deep and epithelialisation was observed. The wound size was roughly the same.

From November 4, the patient used Wobe enzyme N 4x5 tablets/day. Potassium permanganate baths were also used. On December 2 the patient was examined by Dr. Simon Laszlo at the Military Hospital, he saw no infection and recommended to continue the current treatment. In January/February 2010 the treatment was continued and the wounds showed a small decrease in size. In March 2010 the wound was decreasing with 0.5cm every three weeks. In December the left leg wound was 14cm, in March it was 12cm. The right leg wound also decreased 2cm (to 12cm) since December. The patient stopped smoking and tried to stay away from smoky environments.

On April 6 the wound on the right leg decreased by 1cm to 11cm in length. The wound on the left leg was roughly the same in length.

On May 3, the patient reported less pain in both legs and granulation continued. The left leg wound measured 12 cm in length, which was still the same as in April. The right leg wound however showed a clearly different shape; compared to April, the wound had marked improvement.

On May 31, the patient reported itching on his lower legs. The wound on the right leg was 11cm x 6cm and the left leg wound was 12/13cm x 15cm length.

On July 1, the wound size had not changed significantly. A new Doppler test showed post-thrombotic syndrome, chronic venous insufficiency with varices bilateral in pelvic and limbs. Blood results showed thrombocytes value of 528 x10³/μl (should be 140-355), basically reconfirming the diagnose of 1992. It was suggested to surgically remove a few veins. The patient decided not to agree to this invasive treatment as possible benefits were not clear.

On August 2 the right leg wound is 10.5cm x 5.5cm (0.5cm reduction) and the left leg wound was roughly the same as the previous month. Compared to the start of the treatment with honey (July 2009) the left leg wound size is reduced from 112cm² to 78cm² (-30%) and the right leg wound from 120cm² to 58cm² (-52%). This was achieved in one year time in which no infections were noted (the patient did not use additional antibiotics).

On Aug 28 the dimensions of the wounds were: left leg 12.5 cm length x 14.5 cm width and 10x 6 cm (right leg). The patient took one Aspirin 500 mg every fourth day (recommended by his specialist for internal diseases). From September 1st soda baths were added to the treatment, to remove slough.
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On November 2nd there was only a slight improvement noticeable on the right leg. The wound on the left leg remained the same. The dimensions of the wounds were 12.5cm x 14.5cm (left leg) and 9.5cm x 6cm (right leg). From that moment the patient used daily 80 mg acetylsalicylic acid and he had switched completely to L-Mesitran ointment, since the ointment suited him better. In December/January 2011 a joined decision was made that the patient was no longer followed up with pictures etc. because it became apparent that this patient has underlying pathology that prevents full wound healing. In April 2011 the last pictures were received.

Discussion

Venous leg ulcers are the most frequently occurring chronic wounds, accounting for 80% to 90% of all lower-extremity ulcers (Burton, 1994). The estimated total treatment costs of venous leg ulcers are 1% of the total annual healthcare budget in western European countries. In the United States, treatment costs for venous ulcers in more than 6 million patients approach $2.5bn (£1.6bn; €1.8bn), and two million work days are lost annually because of venous ulcer disease (Gent, 2010).

In a multicentered trial with 240 patients the results showed that ulcer duration and size defined the likelihood of success full wound healing (Kerstein, 2002): the duration and the size of the wound affects the chance of full wound healing per secundam.

This outcome is illustrated in this particular case of a 37 year old male with chronic venous insufficiency. The wounds were present for several years prior to the honey treatment. In the period of May 2009-December 2010 the ulcers were treated with honey based preparations.

In an open-label randomized trial with 368 patients honey showed to have a positive effect on venous ulcerations, although the study did not show a significant difference with the control group that received the usual care (Jull, 2008). This is reflected in this case, the patient had little to no progress of his ulcerations prior to the honey treatment. During the honey treatment infection was controlled by the honey based products, and some progress in wound size and patient comfort was seen, but no full wound healing occurred.

The main advantage the honey based products had for this CVI patient was that during the treatment no systemic antibiotics were needed to combat and prevent infection. Thus the honey products contributed to the reduction of the use of antibiotics and aiding in preventing antibiotic resistance. The only option for full healing might be a surgical intervention.

Acknowledgement

The products used in this study were provided free of charge as part of humanitarian aid program via Foundation Support group Netherlands-Romania. (www.stnedrom.nl).

References
