Introduction

Many institutional and community health care agencies are confronted with escalating incidents of patients experiencing leg ulcers. In the demographic of people aged over 70 years, Carville et al suggests that the prevalence of venous ulceration alone is close to 13%.

Whilst clinicians recognise that limb compression, debridement, skin grafting and/or dressing therapies are effective interventions in the treatment of venous leg ulcers, reports still indicate that around 20% of these wounds remain unhealed after 50 weeks or more of therapy. Biological reasons for this failure to progress include degradation of the extra-cellular matrix, reduced growth factor activity, fibroblast senescence and restricted angiogenesis.

Commonly, however, problems relating to the implementation of clinical interventions can disrupt venous ulcer repair – namely, inadequate sub-bandage pressure on application, loss of sub-bandage pressure during wear time, bandage slippage and poor concordance by the patient. Consequently, the individual is often rendered susceptible to persistent limb oedema, exudation, malodour, pain and skin irritation.

Coban 2 Layer Compression System was instigated in the Wound Clinic of the Sydney Adventist Hospital in order to improve wound healing outcomes for patients whose problematic venous leg ulcers had not responded to more conventional compression bandaging techniques.

Case Study

Carla is 51 years old. Whilst, she has early-stage multiple sclerosis, Carla remains active at home and in her workplace. Her lower limbs presented with a classic champagne-bottle leg shape, demonstrating dense lipodermatosclerosis in the gaiter region and associated atrophie blanche. She has no history of deep vein thrombosis but has undergone surgery for popliteal vein decompression and lengthening of the achilles tendon on the right limb. Pedal pulses were strong, with a biphasic waveform on hand-held doppler examination. She had not experienced leg ulcers previously.

Carla sustained minor trauma to the medial ankle of the right leg by knocking it against a wooden storage pallet.

The wound remained unhealed for over two years prior to attending the Wound Clinic. The ulcer caused persistent aching which was unrelieved by any of her own pain-avoidance strategies and which was only partially offset by an ibuprofen/codeine preparation. The ulcer extended deep into subcutaneous tissue but above the fascia.

The wound surface was covered with a dense, tenacious mix of slough and fibrin. A moderate volume of serous exudate was present with notable peri-ulcer erythema and minor skin breaks. (Picture 1)

Coban 2 Layer Compression System is a low profile, two layer compression system which comprises an inner foam comfort layer and an outer compression layer. The two layers cohere together to form one thin conforming compression bandage for the treatment of venous leg ulcers.

Within minutes of the application of compression, Carla expressed that most of her aching pain was relieved. She was also pleased that the minimal bandage bulk allowed her to wear her normal shoes. She was encouraged to mobilise in order to promote foot and calf-muscle pump function.

The first follow-up visit, 7 days later demonstrated an ulcer which was shallower, whose fibrin cover was thinner and where contraction was evident in the lateral plane.

Pain and oedema had been eliminated and local erythema was reduced. (Picture 2)
The same dressing and Coban 2 Layer Compression System was re-applied and left intact for a further 7 days. The next Clinic visit then revealed further progress, with epithelial replication apparent at the ulcer margins. (Picture 3)

Carla’s ulcer was closed by her sixth weekly visit to the Wound Clinic. Only the surrounding sites of atrophie blanche displayed any tendency for serous oozing. (Picture 4)

These areas were dry after another week of Coban 2 Layer Compression System. Carla was then successfully converted to Class 2 open toe compression hosiery as a life long management activity.

Coban 2 Layer Compression System - A Patients View

My name is Carla and I would like to share my journey.

In March 2006, I clipped my ankle on a wooden pallet at work when carrying a box of product. Within 30 minutes of my injury my ankle was weeping profusely. The next morning I sought medical advice from my doctor who assessed my ankle and referred me to a Vascular Specialist.

After several tests I was referred to a Vascular Surgeon who organised a popliteal vein decompression in December 2006. Unfortunately the sore on my ankle did not heal three months after the operation and I returned to my doctor and was referred to an Infection Specialist where my ankle was wrapped. I was given advice on how to apply a zinc bandage to my ankle and organised check up appointments on three or more occasions over 9 months. The ankle sore appeared to be slowly healing but was slowing me down and two years after the incident I felt drained, lacked energy due to restless sleep and suffered from endless pain in my right ankle.

Early December 2007 I slipped on wet pavers during house renovations and dislodged a bone in the fourth toe of my left foot. This resulted in an operation to straighten the toe and required me to wear a surgical shoe for several weeks. I discussed my right ankle problem with a friend who convinced me to see Gary Bain at the Sydney Adventist Hospital Wound Care Clinic. I rang Gary to organise an appointment.

Gary was keen to trial the new Coban 2 Layer Compression System on my leg ulcer in conjunction with mild exercise. My ankle felt immediately better, as the compression system gave me great support and I was also able to wear my normal flat shoes rather than the unsightly surgical shoe I had only recently endured. This was excellent as I was job seeking at the time.

I returned to the Sydney Adventist Hospital in 7 days and was amazed at the transformation to my ankle, and I also noticed a remarkable reduction to the ulcer in the one week. The new Coban 2 Layer Compression System was reapplied every week for 6 weeks with each week providing a noticeable difference and final relief.

I would like to take the opportunity to thank all involved for their interest and assistance in finally healing my persistent wound.

Carla was one of eight patients in a study group designed to evaluate the clinical performance of Coban 2 Layer Compression System. All patients had demonstrable venous hypertension. Six members of the group reduced their ulcer surface area between 30 - 40% within the 4 week trial period. Of the remaining individuals, one experienced reduced pain and exudation but was slow to produce proliferative tissue repair and the other was not able to tolerate compression bandaging and elected to convert to hosiery.

It has become apparent that Coban 2 Layer Compression System obtains faster reduction in oedema, pain and exudation than traditional multi-layered compression systems utilised by the Wound Clinic. Consequently, it has been observed that ulcer repair is generally accelerated.

As a result Coban 2 Layer Compression System has been added to the Clinic’s armoury of therapeutic interventions.

References


*Photos used in this paper were given with the kind permission of the Sydney Adventist Hospital.*