

# Key Insights On Treating Chronic Venous Ulcers



(Photo courtesy of Tamara Fishman, DPM)

Here one can see a venous stasis ulcer. Venous ulcers of a longstanding duration (usually greater than six months) may require more extensive debridement to remove biofilm in the tissue, according to Gerit Mulder, DPM.

**P**atients with venous ulcers can face daunting complications. Accordingly, our expert panelists provide pertinent pearls on diagnosis, compression therapy, debridement and how their patients have fared with vascular surgery procedures.

**Q:** How do you approach/work up the patient with a chronic venous ankle ulcer? Is there any need for venous ultrasound studies?

**A:** Kazu Suzuki, DPM, CWS, says many of the current estimates show that approximately 70 percent of leg ulcers in the United States are venous ulcers or of mixed-arterial/venous etiology. When it comes to his patients with lower extremity ulcers, he

approaches them as if they have some degree of venous insufficiencies, especially if they have visible edema, varicose veins or hemosiderin stain and/or a history of deep vein thrombosis (DVT).

Marc Katz, DPM, begins his workup by taking a thorough history. This includes checking for a family history of phlebitis, clotting disorders, vasculitis or venous insufficiency. He checks the patient's basic blood work, assesses for possible anemia and evaluates nutritional status.

If Dr. Katz suspects infection, he sends a tissue sample for culture and sensitivity. He notes this approach is much more reliable than a swab, which can be inaccurate.

Dr. Katz will almost always order early venous studies that can detect incompe-

tent veins and perforators. He says these studies are very important as "fixing these problems can often be the key to healing." When ordering the venous studies, Dr. Katz suggests having specific instructions to look for reflux, incompetent saphenous veins and perforators.

"I am not just ruling out DVT," explains Dr. Katz. "However, it is actually surprising how often you will find a DVT in one of these screenings."

Gerit Mulder, DPM, emphasizes the importance of the clinician establishing the etiology as a truly venous etiology prior to treatment. To this end, he recommends appropriate non-invasive vascular examinations. Drs. Mulder and Katz also note the importance of establishing arterial flow before applying compression wraps.

Dr. Katz emphasizes that an arterial exam is "crucial in many patients" to determine whether the patient's wound has arterial etiology. He does not use aggressive compression when the patient's ankle-brachial index (ABI) is less than 0.7. If Dr. Katz suspects an arterial etiology, he considers transcutaneous oxygen measurements around the wound to check for local ischemia. However, he warns that such tests may not be reliable if there is excessive edema.

If a wound is recurrent or has been present for about six months, Dr. Katz will biopsy the lesion in order to determine the presence of vasculitis or even malignancy.

Dr. Suzuki also notes that peripheral arterial disease (PAD) is often underdiagnosed in patients of advanced age. Ruling out PAD is important because ischemic wounds would never heal (regardless of the underlying vein status) and it is unwise to apply compression

therapy to an ischemic limb, according to Dr. Suzuki. He uses skin perfusion pressure/pulse volume recording (SPP/PVR) tests to screen for PAD for all of his new lower extremity ulcer patients.

Dr. Suzuki suggests ultrasound studies if he thinks a patient would benefit from incompetent vein ablation procedures, ideally after the venous leg ulcer has completely healed. When it comes to venous ultrasound studies, Dr. Suzuki defers to his consulting vascular surgeon colleagues.

Venous refilling time and valve incompetence are common diagnoses based on ultrasound testing, according to Dr. Mulder. Additional evaluations before choosing a treatment modality include checking skin status, the ability to tolerate compression and the amount of drainage. Dr. Mulder's clinic does a complete lower extremity workup prior to diagnosing a venous ulcer.

### Q: What type of compression therapy do you prefer?

**A:** Dr. Katz prefers the multi-layer compression products, which he changes on a weekly basis. He says patients tolerate these products well and they provide both dynamic and static compression. He reemphasizes that one must check patients for good arterial flow and the absence of DVT. Once patients have healed, Dr. Katz likes using sequential compression pumps. Although compliance is a problem with prescription stockings, he will use them for some patients.

One of Dr. Suzuki's choices is prescription graduated compression hose if the patients can comply and wear them daily. He says the compression strength has to be at minimum above "20 to 30 mmHg (Class I)" at the ankle level. On the other hand, he notes that low compression "anti-embolism" hose (such as over-the-counter TED hose) are not considered therapeutic for venous reflux diseases.

However, if that is not an option, Dr. Suzuki uses various multi-layer compression bandage kits. These include Profore

(Smith & Nephew), Dynaflex (Johnson and Johnson), or the Coban two-layer system (3M), which patients can leave on for a week. He also uses the "do it yourself" approach by combining a foam dressing, cast padding, Ace wrap (long stretch bandage) and Coban/Coflex (short stretch bandage), although he says the aforementioned compression bandage kits are very convenient.

Dr. Mulder uses paste bandages (Unna boot) with four-layered or occasionally two-layered wraps. He bases his choice on patient tolerance, skin evaluation and patient preference.

"There is really no data to show that one approved multi-layer system is significantly better than another as far as outcomes are concerned," points out Dr. Mulder.

### Q: Is there any evidence that skin graft substitutes are effective in these wounds?

**A:** Dr. Katz notes there is a lack of vibrant cells and growth factors in chronic wounds so skin graft substitutes can "absolutely" be effective in these wounds. He says Apligraf (Organogenesis) has provided the best results and has utilized the modality for patients who cannot have compression. In his experience, Dr. Katz has found better success with Apligraf in comparison to other skin graft substitutes, and cites the amount of actual live material in the graft.

"Although we do not have sufficient clinical evidence yet, I believe other skin substitutes can be very helpful in wound closure, given adequate wound bed preparation and strict edema control," says Dr. Suzuki.

However, Drs. Mulder and Suzuki note that studies support the use of Apligraf. Dr. Mulder says studies have shown that Apligraf has shown a statistically significant difference versus controls in treating patients with venous ulcers. Dr. Suzuki concurs, noting that Apligraf has AHA level 1 clinical evidence to show more effective complete wound closure over conventional moist com-

pression dressing in 24 weeks (57 percent vs. 40 percent).<sup>2</sup>

When physicians ensure appropriate patient selection, Dr. Mulder says "(tissue substitutes) can assist with expediting healing." He does note that tissue substitutes are expensive and that "the majority of patients still do well with the more conservative treatments."

### Q: What vascular surgery procedures are currently in vogue?

**A:** Dr. Suzuki leaves the decision on these procedures to his consulting vascular surgeons. He cites the use of the VNUS Closure (Medical Technologies) radiofrequency catheter as one of the most promising, minimally invasive endovenous procedures. Dr. Suzuki says the procedure is clinically proven to be less painful with a faster recovery rate than traditional vein stripping surgeries.

Dr. Katz has had the best results with the VNUS Closure system and the endovenous laser systems. In more extensive cases, he says some doctors are using the TriVex system (Smith & Nephew).

Based on his conversations with vascular surgeons, Dr. Katz says there seems to be more emphasis on the saphenous veins and less on the perforators, which previously held more importance.

"There can be dramatic healing following the use of the VNUS system, endovenous laser systems or the TriVex system," says Dr. Katz.

Dr. Mulder maintains that procedures for venous ulcers are still limited to split thickness skin grafts (STSG). He says these grafts "frequently fail and do not address the underlying disease." He notes lifelong compression for patients is still a requirement.

There are centers that are still doing sclerotherapy with purported success, according to Dr. Mulder, but he notes these procedures are also limited to select patients as injections are involved. Dr. Katz believes sclerotherapy is "falling out of favor."

## Q: Do you have any debridement pearls?

**A:** Venous ulcers of a longstanding duration (usually greater than six months) may require more extensive debridement to remove biofilm in the tissue, according to Dr. Mulder. He says curettage may not be sufficient for wound bed preparation and patients may require surgical intervention (if eligible) in the OR. The Versajet (Smith and Nephew) is a particularly useful tool for debridement, according to Dr. Mulder.

For those who cannot undergo surgical debridement, Dr. Mulder says topical enzymes may be useful but these patients will still require compression therapy.

Dr. Katz advocates sharp debridement. He believes in debriding patients weekly and concentrating on the periphery of the wound. Dr. Katz adds that he does not get good results with enzymatic creams when it comes to venous lesions. In addition, he says if a venous wound gets bigger with debridement, one should think about pyoderma and stop debridement.

Over the past few months, Dr. Suzuki has used the Qoustic Wound Therapy System (Arobella Medical) ultrasound wound debridement device and has had "wonderful results." He notes the ultrasound curette causes cavitations (microbubbles) within the wound bed to separate non-viable tissues from the healthy, viable granulation bed.

Dr. Suzuki also notes this device is a lot less painful than a scalpel. He says the system is particularly useful when it comes to venous ulcers, which tend to be large and shallow with irregular wound shapes.

## Q: Do you have topical dressing preferences when it comes to venous ulcerations?

**A:** Once one surgically debrides the wound, Dr. Mulder says xenografts or allografts may be very useful. He does note that the outcomes are "greatly dependent" on the patient's

tolerance of compression (preferably 30 to 40 mmHg) at all times. One must tell the patient that compression is for life, emphasizes Dr. Mulder.

When using topical debridement agents, Dr. Mulder says these patients will need a compression modality that allows for removal of the compression on a daily basis. He says one may also use silver dressings in lightly colonized wounds.

Dr. Mulder adds that the choice of dressing is based on the amount of exudate, the status of the wound base and patient tolerance. As Dr. Mulder notes, it is usually fine to use anything that takes away excessive exudate, controls bacteria and is not painful. He says compression and addressing both micro- and macroedema are key factors in healing.

"If you follow the basic wound care or debridement principles, the dressing is the least important factor," explains Dr. Katz.

If one is concerned about infection while the patient has compression on for a week, Dr. Katz suggests using a silver product for seven days under the compression. In most cases, Dr. Katz does not like having silver against the wound as it becomes an irritant and high silver concentrations may inhibit new cell growth. Dr. Katz notes that he uses Adaptic (Johnson and Johnson) and subsequently puts the silver dressing over the Adaptic.

Dr. Katz says many patients will have heavily draining wounds. In these cases, he uses an alginate product and may change the compression twice weekly until the drainage slows.

As far as topical dressings go, Dr. Suzuki says there is no good clinical evidence to show that one dressing heals faster than the others. Nonetheless, he prefers using soft silicone adhesive-based foam dressings such as Mepilex (Mölnlycke) as evidence has shown them to be less painful and less traumatic to the patients during the dressing removal. Dr. Suzuki will pay close attention to the amount of wound drainage, which determines the

dressing components and how often the patient should change the dressing. ■

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## References

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*For further reading, see "How To Manage Venous Stasis Ulcers" in the May 2007 issue or "Treating Venous Stasis Ulcers In The Lower Extremity" in the October 2004 issue.*

*Also check out the archives at [www.podiatrytoday.com](http://www.podiatrytoday.com).*