

## Digital Ulcers

By Lorinda Chung, MD

Immunology and Rheumatology at Stanford Scleroderma Clinic

**Q: I have been having many issues with digital ulcers secondary to the Raynaud Phenomenon that comes along with my scleroderma. I have heard that Tracleer and ace inhibitors can be helpful to people trying to prevent these digital ulcers. Are these medications a reliable way to help treat ulcers before they start?**

**Caption: Pictured is an example of a digital ulcer on a patient with diffuse systemic sclerosis.**

**A:** Digital ulcers are a common problem in scleroderma and up to half of patients suffer from them. They arise due to poor blood flow to the digits, not only from Raynaud Phenomenon, but also because the blood vessels in patients with scleroderma are affected by scar tissue and blood clots that decrease the lumen, or opening, of the blood vessels.

Medications like calcium channel blockers and ace-inhibitors vasodilate, or open up the blood vessels, to improve blood flow and can be helpful to treat symptoms related to Raynaud phenomenon. These vasodilators also lower the blood pressure. In fact, they are approved to treat hypertension; and therefore, patients with scleroderma who have low blood pressure may not tolerate these drugs. In our experience, calcium channel blockers and ace-inhibitors are not very helpful in the treatment or prevention of digital ulcers.

Drugs that do seem to help digital ulcers include those that are currently approved for the treatment of pulmonary arterial hypertension:

- Phosphodiesterase-5 inhibitors (sildenafil or Revatio<sup>®</sup>)
- Endothelin receptor antagonists (bosentan or Tracleer<sup>®</sup>)
- Prostacyclins (epoprostenol or Flolan<sup>®</sup>)

None of these drugs is currently approved in the United States for the treatment of digital ulcers so your insurance will likely not pay for them unless your doctor fills out a special form or writes a letter on your behalf. Bosentan is approved in Europe to help prevent ulcers, but two large studies did not show a benefit for healing. There are oral forms of the first two drug classes, but prostacyclins are usually given intravenously for very severe ulcers that are progressing to gangrene. We usually try sildenafil first for the treatment of digital ulcers, and if there is no improvement, we try to obtain bosentan, but this requires monthly pregnancy and liver function tests. If you are a patient who typically gets digital ulcers, it might be a good idea to stay on sildenafil or bosentan to help prevent the development of new ulcers.

**Q: Are there any treatments out there that will help my open ulcers heal quickly?**

As mentioned above, we have found that sildenafil is a helpful medication for the healing of digital ulcers, but large studies are ongoing to prove this, and hopefully get the medication approved for this indication. Other phosphodiesterase-5 inhibitors can be tried, including tadalafil (Cialis<sup>®</sup>) and vardenafil (Levitra<sup>®</sup>). Yes, these drugs are approved for the treatment of erectile dysfunction, but at much lower doses than what we would use for digital ulcers or pulmonary arterial hypertension.

For sildenafil, you need to take the medication three times a day to improve the blood flow to your digits, and don't worry, we have not found a problem with sexual side effects when using these drugs to treat digital ulcers. Besides endothelin receptor antagonists and prostacyclins mentioned above, we also try to help improve blood flow using drugs that prevent and break up blood clots (antiplatelet agents). These include medications such as aspirin, cilostazol (Pletal<sup>®</sup>), and pentoxifylline (Trental<sup>®</sup>). We often will use these antiplatelet drugs in combination with sildenafil. But it is important to remember, that it takes time for these ulcers to heal, even when taking these medications.

**Q: As a scleroderma patient, I already take many medications. I'd rather not take any more if I don't have to. Are there any treatments for my digital ulcers that don't include being prescribed a new medicine?**

Some non-pharmacologic ways that you can help prevent and treat digital ulcers include not smoking, avoiding trauma, good skin care, and avoiding triggers of your Raynaud Phenomenon, such as cold and stress. Once ulcers develop, good wound care is important to help heal ulcers and prevent infection. General wound care measures include using soap and water to clean ulcers, topical antibiotics and bandages.

DuoDERM<sup>®</sup> is a polyurethane film coated with a strong adhesive that protects the skin from bacteria, serves as a barrier to protect against injury, and can help with the healing of ulcers. The DuoDERM dressing should be changed and cleaned about every third day, or sooner if the dressing is oozing a lot of fluid. DuoDERM may be difficult to use depending on the location of the ulcer, but it is worth discussing with your doctor.

There also are procedures that can be helpful in improving blood flow to the digits and healing ulcers. Botox<sup>®</sup> injections have been shown to help heal digital ulcers, but studies are small, and have not included a placebo group as a comparison. Cervical sympathectomies decrease the activity of nerves that are involved in Raynaud Phenomenon. These procedures can be helpful for Raynaud symptoms, but usually do not have lasting benefit especially in patients with scleroderma. Digital sympathectomies performed by specialized vascular or hand surgeons involve stripping of the outer surface of blood vessels to improve blood flow. We usually refer our patients for this procedure when they have one or two digits with severe ulcers that are not responsive to the medications discussed above. The majority of patients at our Center who have undergone digital sympathectomy have experienced long-lasting benefits.

