CHAPTER 14
SPIDER VEINS/TELANGIECTASIAS THERAPY

Original authors: Jose I. Almeida, Thomas M. Proebstle and Jeffrey K. Raines
Abstracted by Michael C. Dalsing

Introduction

Telangectasias are the medical name for what most people call **spider veins**. These very small **venules** are located just under the skin (in the dermis) and, therefore, are easily seen. There color is often red with or without a predominant bluish tinge. The size is less than one millimeter or 0.039 inches in diameter. The pattern is like a starburst or the limbs of a tree (arborizing).

Over 50% of adults have one or more leg **telangiectasias** and women are most likely to seek treatment to eliminate the blemish (cosmetic reasons).

Etiology and Diagnosis

One cause is an abnormally functioning deeper **vein** with **reflux** or backward flow of blood on standing or sitting. The resulting high pressure in the skin **venules** can cause them to enlarge into a cosmetic blemish. This is important since the failure to recognize and treat the underlying cause can result in the inability to eliminate the **spider vein** for any significant period of time. The diagnosis of lower leg **venous reflux** is made by physicial examination and confirmed by a **venous duplex** study (pictures and blood flow using sound waves) as the first study. There are many other causes which must be considered including congenital and secondary conditions such as exposures (chemicals, radiation), blunt trauma, and autoimmune disorders (lupus, dermatomyositis, etc.). The diagnostic studies required for each are outside the scope of this review, however, your doctor will know best how to determine the cause of the spider veins and the best treatment.

Treatment and Results

If an underlying cause of the **spider veins** is found, its treatment should be completed first to resolve this component of the problem. When the **spider vein** becomes the focus of treatment, generally for cosmetic reasons, the therapeutic use of light energy is a possibility. **L**aser stands for **L**ight **A**mplification by **S**timulated **E**mission of **R**adiation. It uses high powered electromagnetic radiation (focused light) of one wavelength focused to heat one particular small spot of our skin and damage the underlying **spider vein**. Although it would seem so easy to wand away the blemish, in fact, there are many things which have to be accounted for to obtain the desired result. A partial list of important things to consider includes the amount of dark pigment in your skin (melanin), the size of the **venule**, the size of the light beam, the amount of energy given to the skin, scatter of the light when it hits the skin, potential skin damage and pain to the patient. Your doctor

will consider each before choosing the correct **laser** to use. As an example, the deeper the doctor needs to penetrate the skin to hit the **spider vein** the longer the wavelength needed. Generally, shorter wavelengths (500-600 nm) will only go about 0.7 mm deep (e.g. KTP laser, flashlamp pumped dye laser) while the longer wavelengths (1064 nm, Nd/Yag laser) will go up to 3 mm (one tenth of an inch or more) into the skin. The doctor will cool the skin during laser treatment to prevent burning (to prevent sunburn-like problems). Most doctors will not treat tanned skin because the increase in a certain skin pigment (melanin) increases the absorption of the laser energy leading to tattooing. There are other devices using **intense pulsed light (IPL)** which are different from the **laser** in that the light source is neither one wavelength nor as controlled but otherwise works much like the **laser** when it comes to treatment.

How is it done? In general, short bursts (in the millionth of a second range) are given to lessen the discomfort associated with the treatment. The spot size hit and thereby treated by the light is often much less than one half inch in diameter. Larger areas of the skin are treated by treating different spots without trying to overlap. It usually takes two to four visits to complete the job which, of course, depends on the number of spider veins being treated. Most reports on the **laser** treatment of **spider veins** shows 75% to 100% clearance of the abnormal color and distention of the **spider veins** noted before beginning the treatment. As with every treatment there can be problems (complications). The most frequently reported problems include a worse darkening of the blemish (**hyperpigmentation**), incomplete removal of the blemish, and treatment related pain. Clots with the **spider veins** have been reported as well as burns of various degrees.

Spider veins can also be treated by injection of drugs that will scar the venules and cause them to be less visible. Most doctors use a very small needle inserted into the **spider vein** to inject the damaging drug which might be very concentrated salt water or other **sclerosing drugs (e.g. sodium tetradecylsulfate)**. Pressure is held over the area of injection with the doctor's hand to begin with and then continued with pressure stockings for several days afterward. It works by causing the lining cells of the **venule** to swell and rupture and the surrounding cells to become inflamed and to eventually scar so that the vein is no longer seen. Results are comparable to those noted for laser treatment. Complications are generally local including local **blood clotting** and **ulcers** from the drug leaking out of the vein. However, allergic reactions (blood pressure, heart and breathing problems) are also a rare possibility.

Conclusions

Spider veins are very small blemishes within the skin. The cause of the **spider veins** must be sought and treated prior to taking care of the skin blemish. To eliminate the **spider veins**, currently two treatments are commonly used. **Laser** treatment uses light to heat the **spider vein** resulting in scarring while **sclerotherapy** uses drugs to damage the inside of the **vein** resulting in scarring. Each method has risks including a worsened cosmetic appearance for the potential benefit of eliminating the blemish.

Commonly Asked Questions

What are spider veins?

Spider veins are very small reddish blue venules located in the skin which have enlarged and become visible.

What causes spider veins?

Spider veins can results from minor skin trauma which damages the small skin **venules**, from dermatologic or autoimmune disorders, from exposure to damaging agents, or from underlying **venous reflux** with resulting high blood pressure in the **venules**, enlargement of the **venules** and ultimately the visible blemish one sees.

Are there ways to get rid of my spider veins?

Yes but first one must make sure that the **spider vein** is not a sign of some deeper problem such as **venous insufficiency** (**reflux** in larger **veins**) or other medical problem. The **spider veins** can be made pale and shrunken (less visible) by using **laser** energy or **sclerosing drugs** to damage and scar the **spider vein**. **Laser** energy is delivered by shining the light on the skin while the **sclerosing drug** is injected into the **vein** with a very small needle.