Sclerotherapy in the Treatment of Venous Disease
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Sclerotherapy for Venous Disease: Overview

- 1 in 5 Americans
- Approximately 25% of women have some type of lower extremity venous insufficiency
- 72% of American women over 60
- Approximately 15% of men have some type of lower extremity venous insufficiency
- 40% of American men over 60

Varicose Veins
“What Are They?”

- Simply enlarged veins under the skin
- Vary in size and extent
- Can occur at any age
- Develop in any part of the body but most commonly in the legs
Varicose Veins
“What Are They?”

• Spider Veins

• Reticular Veins

• Varicose Veins

• Venous Ulcers

Spider Veins
“What Are They?”

• Known in the medical world as telangiectasias or sunburst varicosities

• Small, thin veins that lie close to the surface of the skin

• Are NOT an integral part of the venous system

• Divided into three categories:
  • True “spider” veins
  • Linear
  • Arborizing
Reticular Veins
“What Are They?”
- Darker bluish veins
- Are deeper in the skin than spider veins
- “Criss-Cross” across the thighs and the lower legs
- Larger than spider veins and usually are the cause of them

Varicose Veins
“What Are They?”
- Dilated, protruding, tortuous, saccular superficial veins
- Can become very large
- Usually disappear when patient lies down
- Existence with spider veins and reticular veins common
Varicose Veins

Venous Ulcers
“What Are They?”
• Located below the knee, most often on the inner part of the ankles
• Relatively painless unless infected
• Associated with aching, swollen lower legs
• Surrounded by mottled brown or black staining and/or dry, itchy and reddened skin

Venous Ulcers
**Varicose Vein Procedures**

- Micro-ambulatory phlebectomy
- Injection sclerotherapy
- Traditional vein stripping
- Ultrasound guided heat therapy (radiofrequency ablation, laser ablation, Cyanoacrylate)
- Mechanico-chemical ablation
Varicose Vein Procedures:
Indications for Treatment

- Pain and edema
- Superficial thrombophlebitis
- Venous ulceration
- Cosmetic concerns
- Bleeding varicosities

Varicose Vein Procedures:
Injection Sclerotherapy

- Injection of a liquid “poison” into the vein
- Causes the endothelial cells to lyse and of course die
- The vein will thrombose and eventually disappear
- A number of different scleroscents
  - Hypertonic saline
  - Sodium tetradecylate
  - Polidocanol

SCLEROTHERAPY
The aim is to pace sclerosant in the vein lumen empty of blood and appose the walls with compression

Types sclerosants:
- detergent: polidocanol/sodium tetradecyl sulphate
- osmotic: hypertonic saline
- chemical irritant: chromated glycerine
Sodium Tetradecyl Sulfate (STS)

- Anionic surfactant
- Non-lymphoid, non-carcinogenic
- FDA-approved 1964
- Commercially available in propylene glycol and saline solutions
- Used as a treatment for chronic lymphedema due to loss of lymphatics that drain away fluid from the extremities
- Should not be given to a pregnant woman only if clearly needed and the benefits outweigh the risks
- Use is non-lymphatic, whether this drug is accepted in human milk. Because many drugs are excreted in human milk, caution should be exercised when Tetradecyl is administered to a nursing woman
- Maximum single treatment should not exceed 10 mL
- Can be readily made into a foam (physicians compounded)
**Varicose Vein Procedures: Injection Sclerotherapy**

- Injections done usually over a number of “sessions” each 10 to 45 minutes long
- Done under magnification and sterile technique
- Very small (30 gauge) needle used
- Multiple veins injected
- Avoidance of alcohol and vigorous exercise for 24 hours

**Varicose Veins “Sclerotherapy”**

- The solution displaces the blood within the vein, causing it to blanch or turn white. The solution then causes the vessel to become irritated and swell shut, prohibiting the blood from reentering the vein.
- When the needle is withdrawn, pressure is immediately applied to the area. The skin may be kneaded to help disperse the solution and reduce bruising. Each vein may require several injections and most disappear in two weeks to two months.
Varicose Vein Procedures: Injection Sclerotherapy

- Severe allergic reactions
- Injection can cause skin necrosis
- Ulcer formation
- Pigmentation irregularity - brownish splotches on the affected skin that may take months to fade
- “Telangiectatic matting” - fine reddish blood vessels
Varicose Vein Procedures:
Ultrasound Guided Injection Sclerotherapy

• Used as “foam” or as normal liquid
• Useful for perforator veins
• Ultrasound guidance very useful and in most cases a must
• Studies have shown that this treatment is successful in 60%-80% of cases
• May help in ulcerations
Varicose Vein Procedures
Ultrasound Guided Injection Sclerotherapy

Venous Disease Treatment Procedures

- Reflux in either the greater or lesser saphenous vein must be addressed
- Micro-ambulatory phlebotomy undertaken after or at the same time as ablation
- Injection sclerotherapy the last
- Treatment should include ablation or injection of perforating veins if needed
Varicose Vein Procedures: Conclusions

• Multiple modalities are used to treat varicose vein issues
• Injection sclerotherapy is a proven treatment for certain type of vein
• All procedures done in the outpatient setting with minimal anesthesia
• Can be used to treat perforators as well