Surface Laser Therapy for Leg Telangiectasia (Small Vein Therapy)

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Disclosures

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What are Leg Telangiectasia?

- Definition: Superficial vessel of the skin visible to the human eye.

- *aka:* Spider veins, Sunburst veins, Dilated venules, Venulectasias.

- Histopathology: Dilated cutaneous venules or expanded capillaries or arterioles in the reticular and papillary layers of the dermis and subcutaneous fat.
Background

- Leg telangiectasia may occur with or without reflux in the superficial venous system ie GSV, SSV, Perforator veins
Background
Surface Laser: “Sclerotherapy is the gold standard for spider veins. There is no role for surface laser.”
– ACP Annual Meeting 2007

Is there a role for surface laser therapy?
Surface Laser?

Toshiba HD DVD  
RIM Blackberry
Absorption Spectra

Absorption Spectra of Water, HbO₂, Melanin

Water
Melanin
Hemoglobin

Wavelength (µm)
Types of Surface Lasers
“Old Generation”

- **KTP: 532 nm**
  - Absorbed by melanin: 15-25% hypo/hyperpigmentation
  - 60-75% vessel clearing after two treatments

- **PDL: 595 nm: Long Pulse Dye Laser**
  - Inability to treat veins larger than 2 mm
  - 40-50% hyperpigmentation or purpura
  - 40-70% clearance of veins less than 2 mm

- **Alexandrite Laser: 755 nm**
  - Inability to treat veins less than 0.4 mm
  - 20-40% hypo/hyperpigmentation; severe matting
  - 20-60% clearance of veins greater than 0.4 mm
**Types of Surface Lasers**

**“New Generation”**

- **Diode Lasers: 800-940 nm**
  - Near infrared wavelength targeting tertiary Hb peak
  - No significant hyperpigmentation or purpura
  - 50-80% vessel clearing for veins greater than 0.4 mm and less than 3 mm

- **Nd:Yag Laser: 1064 nm**
  - 4% incidence of hyperpigmentation
  - 75-98% vessel clearing for vessels less than 3 mm

- **IPL: 500-1000 nm: Intense Pulsed Light**
  - Shorter wavelengths (0.6 to 1.5mm); Longer wavelengths (3 to 5 mm)
  - 2-5% incidence of erythema, mild burning
  - 70-90 % clearing for vessels 0.2 to 1mm
Side Effect Profile

Surface Laser Side Effects:

– Purpura: cavitation and vessel rupture
  532-755 nm

– Hypo/Hyperpigmentation: unwanted epidermal and melanin heating
  532-755 nm; *decrease incidence with cooling*

– Other: mild pruritus, erythema, edema, blistering, scarring and telangiectatic matting
  *Limit with meticulous technique and knowledge of equipment you are using*
Recommendations

Surface Laser Recommended For:
- Smaller veins not easily cannulated with a needle
- Vessels below the ankle prone to ulceration with sclerotherapy
- Patients who have failed sclerotherapy
- Patients who have developed telangiectatic matting
- Needle phobic patients
Our Approach to Small Vein Therapy

- Focused Venous History & Clinical Exam
  - Duplex Ultrasound if clinically indicated
- Treat Proximal Disease First!
  - GSV, SSV, Perforator Reflux
    - EVTA
  - Branch Varicose Veins or Incompetent Tributaries
    - Sclerotherapy or Ambulatory Phlebectomy
Our Approach to Small Vein Therapy

"Double Injury Technique"

Surface Laser Therapy for Spider Veins
- Less than 5mm in diameter
  - Flexipulse™ Diode 940 nm Laser
    - 0.5 mm focal spot handpiece
  - Zimmer™ air cooler

Foam Sclerotherapy: 0.1 or 0.25% STS
- Spider Veins greater than 5mm in diameter
- Reticular Veins
- Feeding veins to spider veins
  - Utilizing transillumination
Our Approach to Small Vein Therapy

- Small vein treatments done in 20 minute increments
  - Patients can have 20 to 80 minutes of small vein treatments in one session
- Repeat treatments performed at 4 week intervals to eliminate residual veins PRN
- Patients typically will need between 1 to 3 treatments for a specific area
Surface Laser Equipment
Sclerotherapy Equipment
Our Practise Model

- Clinical Coordinator
  - Processes patients and performs stocking fittings
- Physician Assistant
  - Full time small vein therapy
- Physician Assistant
  - Assist with EVTA and follow-up sclerotherapy on EVTA patients
- Medical Aesthetician
  - Patient skin care needs & Laser Hair Removal
- Medical Director
  - Performs new consults and follow-up on all patients
  - Perform EVTA
Where Are We Today?

- We treat 30 to 60 patients per week
  - For isolated spider and reticular veins
- 85% clearing in 80% of patients
- Recurrence rate of less than 5%
- Incidence of Matting of less than 2%
- Patient satisfaction of greater than 80% based on patient follow-up and surveys
- We have had 20% annual growth in our small vein practise in the past two years
  
  *It took 3 years of protocol adjustments*
Conclusions

- Proper patient evaluation and understanding patients expectations are critical to develop a small vein practice.
- Develop a practice model that suits your goals and individual needs.
- Proper treatment selection and development of a treatment algorithm and protocols are critical to be successful.
- Surface laser can be used as an important adjunct, *but not in isolation*.
Thank You!

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