Devices For Telangiectasia: When And Why

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Disclosures
- Not a huge fan

Why?
- Sclerotherapy is the gold standard
- Needle phobia
- Sclerosant allergies
- Resistant vessels
- Bad experience with sclero

Where
- Facial veins
- Truncal veins
- Leg veins

The 3 C's of Lasers
- Columnated
- Color - MonoChromatic
- Coherent
- Wavelength is preferentially absorbed by hemoglobin over the melanin

Intense Pulsed Light
- Flashlamp
- Non-coherent
- Continuous spectrum of wavelengths controlled by filters
- Weiss in his textbook on Vein Diagnosis and Treatment reports "...30 to 40% clearance with two or three treatments of the legs"
Laser Absorption Chart

532 nm Nd:Yag/KTP
- High hemoglobin absorption
- High melanin absorption generally used for skin types I-III
- Best results with fine red spider veins (<0.7 mm) not fed by larger reticular veins

755 nm Alexandrite
- High hemoglobin absorption
- High melanin absorption
- Skin types I-IV no tan
- McDaniel et al; Derm Surg 1999;25(1):52-8 show 63% clearance after 3 treatments

810 nm Diode
- High melanin absorption
- High hemoglobin absorption
- Skin types I-IV no tan
- Hypopigmentation
- Garden et al in Lasers Surg Med 1998;10(Supplement) showed 60% clearance after an average 2.3 treatments

940 nm diode
- Small peak hemoglobin absorption
- Melanin absorption lower allowing treatment in skin types I-IV
- Passeron et al, J Am Acad of Derm. 2003 May;48(3):768-74 reported 73% clearance after up to 3 treatment in vessels 0.8 mm to 1.44 mm and much less clearance in smaller vessels
Before & After Photos

1064 nm Nd:Yag
- Low melanin absorption
- Low risk of epidermal injury (not zero) skin types I-VII avoiding tanned skin
- Most used with epidermal cooling

Variables
- Energy (joules/watts)
- Spot size (mm): Larger spot for larger veins
- Pulse width (ms): Longer pulse for larger veins
- Cooling (contact/cryogen spray/cold air)

Pre Treatment
5 weeks Post Treatment

Photos Courtesy of R.A. Weiss, MD
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Pre Treatment
4 Months post 1 Tx.

Thermacool 1064 treatment with Dynamic Sapphire tip contact Cooling

Lupton, Alster et al, Derm Surg 2002 Aug
- 20 patients aged matched superficial telangiectasia randomized to treat one leg with sclerodisc and one with long pulse 1064 nm Nd:YAG laser
- Two masked assessors
- Concluded that sclerotherapy offers superior clinical effect
- Twenty patients with 2 comparable sites
- One treated with Lyra long pulse Nd:Yag laser and with sclerodial sclerotherapy (0.65)
- Evaluated for clearance, complications and patient pain
- Sclero patients treated once and Laser patients once(10), twice(9) or four times(1)

Clearance
- Rated 0(none) to 4(>75%)
- Laser treated areas averaged 2.5
- Sclero treated areas averaged 2.3

Complications

<table>
<thead>
<tr>
<th>Complication</th>
<th>Laser</th>
<th>Sclero</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bruising</td>
<td>0.23</td>
<td>0.23</td>
</tr>
<tr>
<td>Erythema</td>
<td>0.33</td>
<td>0.27</td>
</tr>
<tr>
<td>Hyperpigmentation</td>
<td>0.57</td>
<td>0.67</td>
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<tr>
<td>Hypopigmentation</td>
<td>0.02</td>
<td>0.02</td>
</tr>
<tr>
<td>Blistering/slough</td>
<td>0.07</td>
<td>0.37</td>
</tr>
<tr>
<td>Scaring</td>
<td>0.13</td>
<td>0.0</td>
</tr>
<tr>
<td>Matting</td>
<td>0.28</td>
<td>0.17</td>
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</table>

Patient Expectance

<table>
<thead>
<tr>
<th>Pain Scale</th>
<th>Laser Tx</th>
<th>Sclero</th>
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<tbody>
<tr>
<td>Absent(0)</td>
<td>9/20</td>
<td>0/20</td>
</tr>
<tr>
<td>Mild(1)</td>
<td>3/20</td>
<td>11/20</td>
</tr>
<tr>
<td>Moderate(2)</td>
<td>6/20</td>
<td></td>
</tr>
<tr>
<td>Severe(3)</td>
<td>11/20</td>
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<tr>
<td>Patient preference</td>
<td>35%</td>
<td>45%</td>
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Comparison and Sequential Study of Long Pulsed Nd:Yag 1064 nm Laser and Sclero Therapy in Leg Telangiectasias Treatment
- Levy, Elbahr et al; France
- Treatment by laser alone(L), sclero alone(S), laser followed in 3 weeks by sclero(LS) or sclero followed in 3 weeks by laser(SL)
- 3 month follow-up to assess clearance

Clearance by Treatment Type

<table>
<thead>
<tr>
<th>Clear grade</th>
<th>L</th>
<th>LS</th>
<th>S</th>
<th>SL</th>
<th>All</th>
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<tbody>
<tr>
<td>0-25%</td>
<td>26%</td>
<td>32%</td>
<td>16%</td>
<td>26%</td>
<td>37%</td>
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<tr>
<td>25-50%</td>
<td>37%</td>
<td>21%</td>
<td>26%</td>
<td>16%</td>
<td>37%</td>
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<tr>
<td>50-75%</td>
<td>13%</td>
<td>25%</td>
<td>30%</td>
<td>13%</td>
<td>15%</td>
</tr>
<tr>
<td>75-100%</td>
<td>0%</td>
<td>17%</td>
<td>17%</td>
<td>67%</td>
<td>12%</td>
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</tbody>
</table>
Complications

- Hyperpigmentation
- Least with the Sclera only group
- Most with the Laser only group
- No statistical difference

Study Conclusions

- Nd:Yag laser had similar results to sclero
- Combo therapy could increase response
- My conclusions from the study were that sclero alone had similar results to sclero plus laser and had the fewest complications

Treatment of lower extremity telangiectasias in women by foam sclerotherapy vs. Nd:YAG laser: a prospective, comparative, randomized, open-label trial.

- Parlar B et al
- Similar results
- More pain with laser
- Quicker results with sclero

Simultaneous Combination Laser then Sclerotherapy

- Personal communication with Dr Ron Bush and Dr Kasuo Miyake
- Initial treatment with laser (940nm or 1064nm) causing vasospasm
- Follow with sclerotherapy
- Possible synergistic effect
- No published studies
Ohmic thermolysis

- Micro-burst of high-frequency electrical energy
- MOA: same as laser

Results – Ohmic Thermolysis

Courtesy Kandy Hammond RN

Ohmic Thermolysis – What It Treats

- Red Veins
- < 0.5mm
- Matting

Courtesy Kandy Hammond RN
Comparison of sclerotherapy, laser, and radiowave coagulation in treatment of lower extremity telangiectasias.

- Tepavcevic B1, Matic P, Radak D.
- Sclero most efficient
- Laser and ohmic devices add additional tool to the tool chest
- Whether its worth the investment depends on the volume of your practice

Conclusion
- Sclero is the choice for most telangiectasia