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Saturday, June 22, 2019
(Room 11)
8:30 - 9:25  WS #110: Why Surgery is No Longer Required for Varicose Veins
9:35 - 10:30 WS #122: Why Surgery is No Longer Required for Varicose Veins
(Repeated)
“Surgery is no longer indicated for Varicose Vein Disease”

Stephen Benson
Surgeon
The Skin Institute
Mr Stephen Benson  MB ChB, FRCS, MD, FACP

• General, Oncoplastic Breast and Vein Surgeon

• Breast Cancer, Reconstruction and Cosmetic
• Varicose Vein Treatments Surg/Laser/Injections

• Doctorate in Transplantation
• Fellow Royal College of Surgeons Edinburgh
• Fellow Australasian College of Phlebology

• Chairman and Head of Training for NZ Faculty
  Australasian College of Phlebology
Cause of Varicose Veins

- Faulty valves which cause retrograde flow (reflux) in the superficial veins
- Veins that reflux are termed incompetent, having incompetent valves
- This leads to increased pressure in the veins so they become swollen and varicose
Varicose Veins

• Incompetent venous valves lead to reflux of old blood down leg veins, causing poor flow, dilation and leaking.

• Why should we Treat (What are the Symptoms)?
  • Visible veins, swelling, aching, cramp, skin discolouration + damage, itching, poor healing, cellulitis, thrombosis, ulceration, bleeding.

• How should we Treat (What are the Treatments)?
  • Treatments aim to destroy the refluxing veins.
  • Which Treatments are current best practice?
Varicose Vein Treatment
Varicose Vein Treatment

‘That reminds me - have you tried the meatballs at Luigi’s?’
Varicose Vein Treatment
Varicose Vein Treatment
Requirements for Medical Intervention

1. The disease needs to be important, in prevalence or severity
2. The intervention needs to be successful in treating the disease
3. The intervention needs to have minimal or acceptable side effects
4. The intervention needs to be cost effective
1. Are Varicose Veins Important?

- 23% of USA population

- Study in France, 1040 GPs, 21,319 patients over 2 days
  Chronic Venous Disease 58.8%  V Crebassa, Phlebology, 2014
1. Are Varicose Veins Important?

- Symptoms (Validated QoL)
  - Heavy legs
  - Aching legs
  - Swelling
  - Night cramps
  - Heat or burning sensation

- Bleeding/Thrombosis/Ulceration/Cellulitis

- Restless legs
- Throbbing
- Itching
- Tingling, Pins and needles
1. Are Varicose Veins Important?

- Pain, Heaviness, Aching, Cramp, Restless legs
- Dermatitis, Skin Ulcers, Lipodermatosclerosis, Fat necrosis
- Bleeding, Poor healing, Cellulitis
- Superficial thrombophlebitis, thrombosis – progression to DVT / PE
- Development of carcinoma or sarcoma in long standing venous ulcers
Skin Change
Skin Change
Skin Change
Skin Change
Bleeding
Varicose Eczema
Varicose Ulcer
1. Are Varicose Veins Important?

- >20% of western population
- Multiple symptoms, significant complications
- Large cost to health care, District Nurses, GPs, Hospitals
- Large Socio-Economic cost to society  
- DVT / PE / Death (VV cause up to 20% of DVT)
2. Is Intervention Successful?

<table>
<thead>
<tr>
<th></th>
<th>VCSS</th>
<th>VDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compression</td>
<td>4.6</td>
<td>3.5</td>
</tr>
<tr>
<td>Intervention</td>
<td>4.8</td>
<td>0.6</td>
</tr>
</tbody>
</table>

Voltaire 1694-1778

“The art of medicine consists of amusing the patient while nature cures the disease.”
2. Is Intervention Successful?

- Recurrence rates are high after surgery

- Neovascularisation at 5yrs post – High tie and strip 23%
  High tie alone 52%

  S Dwerryhouse, J Vasc Surg, 1999

  at 10yrs post surgery >50% have recurrence

2. Is Intervention Successful?

• Non Surgical intervention had a poor reputation because of the high recurrence rates seen after ultrasound guided sclerotherapy

Recanalisation at 5yrs of 42-49%  
K Darvall, Phlebology, Winner EVF, 2014

Slightly better than high tie but not as good as surgical stripping

Therefore, despite 23% failure rate, surgery remained the Gold Standard...... UNTIL NOW !  
P Gloviczki, Practice Guidelines, American Venous Forum, 2011
2. Is Intervention Successful?

- Endovenous Laser Ablation EVLA, Radiofrequency Ablation RFA 10+ yrs
  - Surg vs EVLA RCT 5yr USS closure EVLA 93%, surgery 85%
    - Clinical recurrence EVLA < surgery P0.01
    - VCSS improvement EVLA > surgery P0.03  T Wallace, BJS, 2018
  - Surg vs RFA 31% vs 95% “good” outcome  E Shaidakov, Phlebology, 2014
  - 5yr RFA Fup 95% no reflux  T Proebstel, Eur study RFA, 2014
  - 15yr RFA Fup 88% closed, 100% pt satisfaction  M Whiteley, Eur J Vasc Endovasc, 2017
  - Meta analysis 5yr success, EVLA 88%, surgery 83%  S Hamann, Eur J Vasc Endovasc, 2017
3. Acceptable Side Effects?

- EVLA and RFA have significantly less side fx compared with surgery
- Less Bruising, Bleeding and Haematoma (3.5x)
- Less Infection (6x) (60x less than revision surgery!!)
- Less Pain
- Less Paraesthesia and Nerve Damage (2x)
- Quicker return to work (~4.9 days)

Y Pan, Phlebology, 2014 (Meta-analysis)
Poder, Can J Surg, 2018 (Meta-analysis)
4. Cost Effective?

- Surgery is cost effective (cost per QALY gained)

In NZ

- EVLA / RFA $4-5000 one leg, $8-9000 two legs
- Surgery $12,000 - $18,000

J Ratcliffe, Br J Surg, 2006
EVLA / RFA for Varicose Veins?

1. YES - Varicose Vein Disease is important

2. YES - Rx is successful, SIGNIFICANTLY better than surgery

3. YES - Side Fx acceptable, SIGNIFICANTLY better than surgery

4. YES - Rx is cost effective, CHEAPER than surgery

Guideline 11.2

Because of reduced convalescence and less pain and less morbidity, we recommend endovenous thermal ablation of the incompetent saphenous vein over open surgery.
Clinical practice guidelines of the European Society for Vascular Surgery  
C Wittens, Eur J Vasc Endovasc Surg, 2015

- Recommendation 43

For the treatment of great saphenous vein reflux in patients with symptoms and signs of chronic venous disease, endovenous thermal ablation techniques are recommended in preference to surgery.

Class 1 evidence, level A
National Institute for Health and Care Excellence, NICE

Clinical Guideline July 2013, review 2016

• For people with confirmed varicose veins and truncal reflux
  • Offer Endothermal Ablation, ETA
  • If ETA is unsuitable, offer Ultrasound Guided foam Sclerotherapy UGFS
  • If UGFS is unsuitable, offer surgery
National Institute for Health and Care Excellence, NICE

Clinical Guideline July 2013, review 2016

- Who to refer to:
  - “A team of healthcare professionals who have the skills to undertake a full clinical and duplex ultrasound assessment and provide a full range of treatment.”
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- Originally 1 Surgeon (Only Stripping), 1 GP (Occais UGS)
- Now 2 Surgeons, 1 Interventional Radiologist, 4 GP Phlebologists, 1 Trainee Phlebologist, 8 Sonographers
- >6000 non surgical procedures over last 10 years (No stripping)
- 3 DVT, 2 PE, 3 Infections, 4 recanalisations
Endovenous Procedure

- Performed in theatre and treated as a sterile procedure
- Seldinger technique - needle puncture to the vein under ultrasound guidance
- Entry point depends on ultrasound mapping
- The fibre is guided to the groin by ultrasound
- Catheters and guidewires used if varicose swellings or slight corners
- Injection of tumescent anaesthesia along the length of the vein
EVLA / RFA
EVLA / RFA
EVLA / RFA
EVLA / RFA
Tumescent for EVLA / RFA
Does Tumescent Anaesthesia work?
Cures Varicose Veins

Pre RFA

4 weeks post RFA
Heals Ulcers and Eczema

Pre EVLA

8 weeks post EVLA
Heals Ulcers and Eczema

Pre RFA

Post RFA
Heals Ulcers and Eczema

Pre RFA

Post RFA
Varicose Veins

Fitness is no prevention
Magnesium doesn’t prevent cramp

Topical treatments don’t cure eczema
Age is no barrier to treatment

VARICOSE VEINS?

GNARLY. DUDE!
International Recommendations

- NICE guidelines in UK.

- All Recommend Endovenous procedures over Surgery
- What does this mean for NZ?
1 Consumers have rights and providers have duties.

• Every consumer has the rights in this Code.
• Every provider is subject to the duties in this Code.
Health and Disability Commissioner, 1996

- Right 4, the Right to services of an appropriate standard
- Right 5, the Right to effective communication.
- Right 6, the Right to be fully informed
- Right 7, the Right to make an informed choice and give informed consent
Health and Disability Commissioner, 1996

- Right 6, the Right to be fully informed
- 6.1.b an explanation of the options available, including risks, benefits, side effects and cost
- 6.2 the right to information needed to make an informed choice or give informed consent
- 6.3 the right to honest and accurate answers, including
- 6.3.d the results of research
International Recommendations

- All Recommend Endovenous procedures over Surgery
- Patients must be informed of this (HDC Duty)

Medicine is dynamic and we should always audit, assess and evaluate.

Most surgeons in NZ are already slow to change to non surgical intervention for varicose vein disease. Now there are newer non thermal interventions being assessed

- What’s next ??
The Pendulum Swing

- Surgery
- Non surgical techniques
- RFA
- EVLA
- UGS
- What’s next – MOCA
  - Glue
MechanicO Chemical Ablation

- MOCA (egg whisk)
- Seldinger technique
- Spins at 3500 rpm whilst withdrawing and injecting sclerosant
Auckland Advertising

vein glory

You don’t have to have those ugly leg and face veins

- Walk in, walk out, - New 20min procedure
- No general anaesthetic
- Facial veins instantly gone (VeinGogh)
- Leg veins obliterated under local anaesthetic... walk out!
- Newest technique only requires one tiny needle, and most patients barely aware of treatment. (MOCA)
(MOCA and VeinGogh not covered by insurance companies yet)
Auckland Advertising

- Newest technique only requires one tiny needle, and most patients barely aware of treatment. (MOCA)
  (MOCA and VeinGogh not covered by insurance companies yet)
MechanicO Chemical Ablation

- Phlebology; April 2016
  - 570 limbs (12 failed)
  - 558 treated (35 lost to Fup at 6/52, 17 had no USS at 6/52)
  - 506 USS Fup at 6 weeks
  - 457 closed (90%) (RFA 98-100% 6/52, 92% 5years)
  - BUT 457 / 518 intention to treat = 88% closed at 6/52
  - (457 / 570 = 80% at 6/52)
- 4 severe complications (2x PE, 1x DVT, 1x nerve injury)
MechanicO Chemical Ablation

- **Success**
  - Less than RFA (slightly better than UGS)

- **Complications**
  - Phlebitis
  - Pain (Occasionally severe)
  - Vein Stripping (no anaesthetic)
  - DVT / PE
  - Nerve injury
MechanicO Chemical Ablation

“Advantages”:

- Only one tiny injection, instead of multiple injections as in EVLA (laser)
- Comfortable – Slight feeling of vibration during the procedure. Mild discomfort afterwards for a day or so.
- Safer than laser – no risk of thermal damage to nerves.
- Less expensive than Laser.
- Almost no bruising.
MechanicO Chemical Ablation

“Advantages”:-
• Only one tiny injection, instead of multiple injections as in EVLA (laser) NOT TRUE
• Comfortable – Slight feeling of vibration during the procedure. Mild discomfort afterwards for a day or so. NOT TRUE
• Safer than laser – no risk of thermal damage to nerves. NOT TRUE
• Less expensive than Laser. NOT TRUE
• Almost no bruising. ??

Disadvantages:-
• No long term studies available yet. So far, inferior to laser EVLA, RFA.
• Subsequent sclerotherapy often needed, therefore multiple injections (as with EVLA)
• More expensive and not yet covered by most insurance companies.
Glue

- Seldinger technique
- Cyano-acrylate (specially developed)
- Glue delivered through catheter in 3cm segments
- Mild discomfort (burning) (? better than MOCA)
- No tumescent (Better than EVLA/RFA)
Glue

• **Success**
  - Looks promising, initial studies 93% closure at 12 months

• **Complications**
  - Initially 21% clot extension through GSV junction (? to lungs), now less
  - Phlebitis 15-20%, occais severe, rarely with extrusion of glue
  - Bruising, mild discomfort, some matting, glue clumps (excision)
  - Plasticised “cast” left in vein, possibly permanent (if not, then to where?)
## Costs

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Cost</th>
<th>Duration</th>
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</thead>
<tbody>
<tr>
<td>Rx, Cath + Consum</td>
<td>$20</td>
<td>30 mins</td>
</tr>
<tr>
<td>UGS</td>
<td>$20</td>
<td>30 mins</td>
</tr>
<tr>
<td>Laser</td>
<td>$250-550</td>
<td>60 mins</td>
</tr>
<tr>
<td>RFA</td>
<td>$400-550</td>
<td>60 mins</td>
</tr>
<tr>
<td>MOCA</td>
<td>$950</td>
<td>&lt;60 mins</td>
</tr>
<tr>
<td>Glue</td>
<td>$1,775</td>
<td>&lt;60 mins</td>
</tr>
<tr>
<td>Surgery</td>
<td>“Off the scale”</td>
<td>(and not appropriate)</td>
</tr>
<tr>
<td></td>
<td>RFA</td>
<td>GLUE</td>
</tr>
<tr>
<td>------------------</td>
<td>-------</td>
<td>-------</td>
</tr>
<tr>
<td>One year closure</td>
<td>94-99%</td>
<td>79-93%</td>
</tr>
<tr>
<td>Five year closure</td>
<td>89-100%</td>
<td>(95%) Apr 2019</td>
</tr>
<tr>
<td>Comps</td>
<td>DVT</td>
<td>DVT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Phlebitis Granulomas</td>
</tr>
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Summary

• Avoiding Tumescent Anaesthesia is appealing
• BUT current non thermal / non tumescent techniques
  • Not quite as successful
  • No less complications
  • No long term follow up
  • Increased cost
• Still in their learning curve BUT will find a role
  • Possibly for complex recurrent perfs or neo vascularisation Glue>MOCA
Summary

- RFA / EVLA more successful than surgery
- RFA / EVLA fewer complications than surgery
- RFA / EVLA cheaper than surgery
- RFA / EVLA slightly better than newer non-thermal Rx
- RFA probably slightly better than EVLA
- NICE guidelines, USA, Europe, ACP and many others recommend Endovenous Ablation NOT Surgery
Summary

• NICE guidelines, USA, Europe, ACP and many others recommend **Endovenous Ablation NOT Surgery**

• In NZ, Surgeons are OBLIGATED by the HDC to inform their patients of this
“Surgery is no longer (very rarely) indicated for Varicose Vein Disease”

Stephen Benson
Surgeon
The Skin Institute
“Surgery is no longer (v rarely) indicated for Varicose Vein Disease”

Thank you. Any Questions?

Stephen Benson
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