Best Practice in managing Varicose and Spider Veins

Dr G Mark Malouf
Surgeon  Sydney  Australia
Disclosures

- I love open varicose veins surgery for advanced and extensive disease.
- I also love performing thermal ablation Laser RF which is very effective in obliterating the proximal saphenous trunks.
- I love sclerotherapy and have been doing it 30 years for narrow saphenous trunks - primary or recurrent tributary varices, reticular zig-zagging veins, spider veins – venules & telangiectasias intracutaneous.

- Surgical removal of large saphenous tributaries and clusters of varicosities works very well whether you have stripped or thermally ablated the saphenous trunks.
Varicose Veins Patient - Presentation

**SYMPTOMS**

Usually leg symptoms pain ache heavy swelling restless

Symptoms possibly venous or not venous restless musculoskletal back joints nerve

sometimes pelvis / cycle **TAKE A GOOD HISTORY** night

**APPEARANCE**

Telangiectasias Blue venules Reticular veins Varicosities

CEAP classification C1 C2 C3= swelling

C4 C5 C6 changes eg Pigmentation eczema Lipodermatosclerosis ulcers

**COMPLICATIONS**

Bleeding Vein thrombosis S or D

**Fear** of complications
Physical Examination of the Varicose Veins Patient

Do it **THOROUGHLY**  good light  groins to feet  front  sides  back

**DO NOT SKIP** the **physical examination** and go straight to duplex scan

**RECORD** physical findings on anatomical diagrams and words

Territory of  GSV     SSV
Non-saphenous territory  eg  Vulval  lateral thigh

Varicosities  saphenous trunks  reticular  venules  telangiectasias
spiders  lat thigh  popliteal fossa  ankle flares  signs CVI

Photography
Assessment of varicose veins patient

- Clinical history: main complaints - VIP, past history, family history, lifestyle
- Physical examination: serious veins, spiders or nil, CEAP assessment
- Duplex incompetence scan: yourself or elsewhere, What is relevant reflux?
- Discuss the extent of disease: valves, saphenous trunks, tributaries, deep veins, options for management
**Venous Incompetence Duplex Scan**

If there is any suggestion that veins are the problem –

**DO** the duplex scan or **ORDER** it

**Standing Position** Looking for V Reflux not DVT

You can do a point-of-care duplex yourself in the rooms

**Your sonographer** may do it eg next room

Your favourite vascular laboratory or radiology practice

**VENOUS MAPPING**

**WHAT DUPLEX FINDINGS ARE RELEVANT**

Discuss the duplex findings with the patient

**Terminal and sub-terminal valve at SFJ SPJ**

**trunk of GSV or SSV** **tributary veins**

**reticular veins** **venules** **telangiectasias**
Basic **CEAP classification system** of venous disease

**Clinical classification**

- **C0** No visible or palpable signs of venous disease
- **C1** Telangiectasias or reticular veins
- **C2** Varicose veins > 3mm
- **C3** Edema of venous origin
- **C4a** Pigmentation and/or eczema
- **C4b** Lipodermatosclerosis and/or atrophie blanche
- **C5** Healed venous ulcer
- **C6** Active venous ulcer

- **CS** Symptomatic including ache, pain, tightness, skin irritation, heaviness, cramps
- **CA** Asymptomatic

**Etiologic classification**

- **Ec** Congenital
- **Ep** Primary
- **Es** Secondary (post-thrombotic)
- **En** No venous etiology identified

**Anatomic classification**

- **As** Superficial veins
- **Ap** Perforator veins
- **Ad** Deep veins
- **An** No venous location identified

**Pathophysiologic classification**

- **Pr** Reflux
- **Po** Obstruction
- **Pr,o** Reflux and obstruction
- **Pn** No venous pathophysiology identifiable
<table>
<thead>
<tr>
<th>ATTRIBUTE</th>
<th>ABSENT=0</th>
<th>MILD=1</th>
<th>MODERATE=2</th>
<th>SEVERE=3</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAIN</td>
<td>NONE</td>
<td>OCCASIONAL, NOT RESTRICTING ACTIVITY OR REQUIRING PAIN MEDICATION</td>
<td>DAILY MODERATE ACTIVITY LIMITATION; OCCASIONAL PAIN MEDICATION</td>
<td>DAILY, SEVERE LIMITING ACTIVITIES OR REQUIRING REGULAR USE OF PAIN MEDICATION</td>
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<tr>
<td>VARICOSE VEINS</td>
<td>NONE</td>
<td>FEW SCATTERED</td>
<td>MULTIPLE, GREAT SAPHENOUS VEINS, CONFINED TO CALF AND THIGH</td>
<td>EXTENSIVE; THIGH AND CALF OR GREAT AND SMALL SAPHENOUS DISTRIBUTION</td>
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<tr>
<td>VENOUS EDEMA</td>
<td>NONE</td>
<td>EVENING ANKLE SWELLING ONLY</td>
<td>AFTERNOON SWELLING, ABOVE ANKLE</td>
<td>MORNING SWELLING ABOVE ANKLE AND REQUIRING ACTIVITY CHANGE, ELEVATION</td>
</tr>
<tr>
<td>SKIN PIGMENTATION</td>
<td>NONE</td>
<td>DIFFUSE, BUT LIMITED IN AREA AND OLD (BROWN)</td>
<td>DIFFUSE OVER MOST OF GAITER DISTRIBUTION (LOWER THIRD) OR RECENT PIGMENTATION (PURPLE)</td>
<td>WIDER DISTRIBUTION (ABOVE LOWER THIRD) PLUS RECENT PIGMENTATION</td>
</tr>
<tr>
<td>INFLAMMATION</td>
<td>NONE</td>
<td>MILD CELLULITIS, LIMITED TO MARGINAL AREA AROUND ULCER</td>
<td>MODERATE CELLULITIS, INVOLVES MOST OF (LOWER THIRD)</td>
<td>SEVERE CELLULITIS (LOWER THIRD AND ABOVE) OR SIGNIFICANT</td>
</tr>
<tr>
<td>INDURATION</td>
<td>NONE</td>
<td>FOCAL, CIRCUMMALLEOLAR</td>
<td>MEDIAL OR LATERAL, LESS THAN LOWER THIRD OF LEG</td>
<td>ENTIRE LOWER THIRD OF LEG OR MORE</td>
</tr>
<tr>
<td>NUMBER OF ACTIVE ULCERS</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>&gt;2</td>
</tr>
<tr>
<td>ACTIVE ULCER DURATION</td>
<td>NONE</td>
<td>&lt;3 MONTHS</td>
<td>&gt;3 MONTHS, &lt;1 YEAR</td>
<td>NOT HEALED &gt;1 YEAR</td>
</tr>
<tr>
<td>ACTIVE ULCER DIAMETER</td>
<td>NONE</td>
<td>&lt;2</td>
<td>2-6</td>
<td>&gt;6</td>
</tr>
<tr>
<td>COMPRESSION THERAPY</td>
<td>NOT USED OR PATIENT NOT COMPLIANT</td>
<td>INTERMITTANT USE OF STOCKINGS</td>
<td>WEARS ELASTIC STOCKING MOST DAYS</td>
<td>FULL COMPLIANCE, STOCKINGS+ELEVATION</td>
</tr>
</tbody>
</table>
Options for Management of the VVs Patient

LIFESTYLE CHANGES
- WEIGHT
- STANDING
- WALKING
- EXERCISE
- FOOTWEAR
- ORTHOTICS
- WORKPLACE
- CHAIR
- PREGNANCIES

VENO-ACTIVE SUPPLEMENTS TO IMPROVE VENOUS TONE AND POSSIBLY REDUCE SYMPTOMS
- Rutins
- Bioflavonoids

GRADUATED COMPRESSION STOCKINGS
- Length
- Material
- Style
- Compression strength

CHEMICAL ABLATION
- SCLEROTHERAPY
- MOCA - ClariVein

SURGICAL LIGATION AND REMOVAL OF SAPHENOUS TRUNKS AND LARGE TRIBUTARY VARICOSITIES
- Hospital
- Ambulatory
- Phleb

THERMAL ABLATION
- LASER
- RF

GLUE
- cyano-acrylate gel
- small amount delivered along target vein
Deciding on Treatment for the VVs Patient

Establish a distinct end point that the patient will accept. Usually little or no VVs, no symptoms, and low chance of recurrence.

Taking into account the venous mapping done using duplex ultrasound,

There are usually many pathways to reach that end point.

Multiple treatment options may be used to reach the end point. “A-la-carte” options.

Discuss number of visits, time in compression, scars, anaesthetic level of discomfort, potential complications, costs, down time.

No guarantee of a “cure.” Varicose veins do tend to come back.
Major anatomical areas the may need veins treatment - require discussion

- Major superficial / deep vein junctions and their valves SFJ SPJ perforating veins
- Saphenous trunks GSV SSV depth in saphenous canal or more superficial continuous or interrupted
- Accessory saphenous veins and other tributaries
- The map and **pattern of reflux**
- Clusters of varicosities
- Cosmetic side of spider veins
- Saphenous vein trunks may not be involved
- “Truncal disease or **Tributary** disease”
VARICOSE VEINS

SURGERY

Ligtn  Strip  Phlebectomies
GA      LA - perivenous
Perforators

DUPLEX ULTRASOUND

LASER  R F
THERMAL ABLATION

Liquid or Foam
SCLEROTHERAPY

CHEMICAL ABLATION

Trunks  Acc’s  Extens

Some or all varicose veins
**RANGE OF TREATMENTS FOR VARICOSE AND SPIDER VEINS**

<table>
<thead>
<tr>
<th>描记</th>
<th>治疗方法</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dilated Venules</td>
<td>Sclerotherapy&lt;br&gt;Liquid or Foam</td>
</tr>
<tr>
<td>Reticular Blue Zig-Zag 1-3mm</td>
<td>Sclerotherapy&lt;br&gt;Liquid or Foam</td>
</tr>
<tr>
<td>Small Tributary Varicosities</td>
<td>Ambulatory Phlebectomy&lt;br&gt;Sclerotherapy&lt;br&gt;Liquid or Foam</td>
</tr>
<tr>
<td>Large Varicosities</td>
<td>Surgery&lt;br&gt;Ligation Stripping&lt;br&gt;And Removal Veins</td>
</tr>
<tr>
<td>Incompetent Perforators</td>
<td>Thermal Ablation&lt;br&gt;Laser or&lt;br&gt;RF plus</td>
</tr>
<tr>
<td>Non-Saphenous Varices</td>
<td>GSV SSV Trunk Reflux</td>
</tr>
</tbody>
</table>
Endovenous Mx of VV’s 2015 Non SX

Chemical Ablation  Sclerotherapy
Detergent sclerosants  POL  STS
Hyperosmolar sclerosants  HS  20%
Liquid Foam (off label)  U/S guided  Direct vision
Mechanico-chemical Ablation  ClariVein  MOCA

Thermal Ablation
Laser energy  ELT  1470-1500nm wl  variables
  fibre  energy - amount & delivery  pull back  j/cm
Radiofrequency energy  RF  Control temp time
Steam  Renee Milleret  Montpellier

Vein Glue  VenaSeal  Sapheon(Covid)  cyanoacrylate
Onyx(Covid)  liquid embolic agent  Coils
TA: Endovenous Laser Ablation

The vein wall is destroyed by conductive heating using a laser fibre inside the vein. The vein is surrounded and compressed by very dilute LA solution – tumescence

Tip of laser fibre reaches 800 deg C

Direct contact steam bubbles carbonisation

Different wavelengths of energy are absorbed by haemoglobin vs water

Ideal for saphenous trunks IN saphenous compartment (deeper in the fatty tissue) but also possible if vein is more superficial
ENDOVENOUS LASER TREATMENT

1. Varicose vein
2. Laser fiber is inserted in vein
3. Laser fiber is slowly removed
4. Closed vein following treatment
Endovenous Laser Ablation

Wavelength of Laser power source

Diode lasers
810 nm  940 nm  980 nm  1470 nm  1500 nm
Nd:YAG lasers
1064 nm  1320 nm

Variation in Laser Fibres  Diameter  600  400 microns

End emitting bare tip  vs  radial emitting fibres

Modified to centre the tip of the fibre in the vein and avoid direct wall contact  Tulip  Jacket covering

Introducing devices and sheaths

Various  energy settings  and  pull-back speeds
T A : Endovenous Radiofrequency ablation

Like laser TA, suitable for saphenous trunks and major straight tributaries
Radiofrequency energy to destroy vein wall with heat
Also delivered via a catheter inside the vein
Vein surrounded with dilute LA tumescence as with laser
The radiofrequency energy heats a segment of the catheter eg 7cm long in the Closure Fast device Covidien
Fixed upper limit of temperature 120 deg C cut off
7cm segments are heated one after the other to the preset temperature Other manufacturers also
Tributary veins need added Rx sclerotherapy or pull outs
Thermal Ablation

Laser thermal ablation # 32520 & 32522

Radiofrequency thermal ablation # 32523 & 32526

Alternative to stripping the saphenous trunk

- Used for GSV and SSV trunks and accessory veins, and perforator
- Does NOT need accompanying surgical ligation of SFJ or SPJ
- Tumescent perivenous anaesthesia VITAL
- Almost always accompanied by ugfs +/- phlebectomy
- Several encouraging clinical trials comparing TA to Sx and Sclero
- You will find TA VERY effective at obliterating treated lengths of saphenous trunks that over time disappear from duplex view

• “Thermally ablate straight veins and use UGFS for the tributaries and bulging varicosities +/- phlebectomies” Concurrent or delayed
Efficacy & Safety  Thermal Ablation

• **Very effective**  straight veins  GSV  SSV  
  Ant acc thigh  Rec GSV  Thigh extension SSV  
  95 – 100% closure  occasionally delayed  
  How distally can you go?  nerves

• **Safety profile**  excellent  
  Procedural probs punct passage tumescent  
  Early complic ecchymoses pain phlebitis VTE  
  radial fibres capped fibres less energy  
  Late complic tender cord pigment matting
Sclerotherapy  - Chemical ablation

- Microsclerotherapy small veins spiders
  Often incorporated into general practice or cosmetic practice
- Direct vision sclerotherapy to VVs and spiders
- Ultrasound guided sclerotherapy to access deeper non visible or non palpable veins
  UGS Liquid   UGFS Foam
- MechanicO Chemical Ablation MOCA ClariVein incorporates physical abrasion to vein endothelium with sclerotherapy
Many GPs and surgeons and dermatologists are skilled in sclerotherapy Chemical ablation

- Sclerosants detergent POL STS
  hyperosmolar 20-24% saline HS
  Inflammation compression no flow/little blood fibrosis sclerosis
- Foam production real time pre-fab off label
- Delivery iv cannula scalp vein n direct puncture & shoot
- Duplex guidance spasm further injections
- Be prepared for local tenderness phlebitis or pigmentation
- Excellent as a primary Rx OR for post-Rx tidy up, F/U maintenance neovascularisation at groin or along strip tract
- 80-85% closure initially around 20% reopen often repeated better for smaller diameter veins
- Volume guidelines both for liquid and foam
- THERE ARE RISKS TO SCLEROTHERAPY INFORMED CONSENT
- Micro-sclerotherapy spider telangiect <1mm reticular 1-3mm tributary veins liquid foam
MICROSCLEROTHERAPY

Popular in general practice
The treatment of BLUE RETICULAR ZIG-ZAG sub-dermal veins, intra-dermal blue VENULES and intra-dermal red TELANGIECTASIAS
using SCLEROTHERAPY

Usually liquid If you use foam beware pigmentation in microsclerotherapy

FOLLOWED BY COMPRESSION

NO SIGNIFICANT SAPHENOUS TRUNK DISEASE
Efficacy & Safety   UGFS

- Saphenous trunks and tributaries
- Occlusion rate 80 – 85% with one treatment (55%)
  >90% with two treatments
- Recurrence rate 17 – 20%  Saph trunk diameter

- A safe procedure   Guidelines re
  volume of foam  migraines  PFO/PD  VTE history
- Complications   Neurological 1.2 – 2%
  VTE <1%  Pigmentation 18%  Pain/phlebitis 25%
  Air  CO₂  O₂/CO₂  contemporaneous  pre made
# Adverse events after sclerotherapy

<table>
<thead>
<tr>
<th>Incidence</th>
<th>Very common</th>
<th>&gt;10%</th>
<th>Common 1 – 10%</th>
<th>Uncommon 0.1 – 1%</th>
<th>Rare 0.01 – 0.1%</th>
<th>Very rare and isolated cases &lt;0.01%</th>
</tr>
</thead>
</table>

## Type of adverse event

### Severe complications

<table>
<thead>
<tr>
<th>Type of adverse event</th>
<th>Frequency with liquid</th>
<th>Frequency with foam</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anaphylaxis</td>
<td>*Isolated cases</td>
<td>*Isolated cases</td>
</tr>
<tr>
<td>Large tissue necrosis</td>
<td>*Isolated cases</td>
<td>*Isolated cases</td>
</tr>
<tr>
<td>Stroke and TIA</td>
<td>*Isolated cases</td>
<td>*Isolated cases</td>
</tr>
<tr>
<td>Distal DVT (mostly muscular)</td>
<td>**Rare</td>
<td>***Uncommon</td>
</tr>
<tr>
<td>Proximal DVT</td>
<td>*Very rare</td>
<td>*Very rare</td>
</tr>
<tr>
<td>Pulmonary Embolism</td>
<td>*Isolated cases</td>
<td>*Isolated cases</td>
</tr>
<tr>
<td>Motor nerve injury</td>
<td>*Isolated cases</td>
<td>*Isolated cases</td>
</tr>
</tbody>
</table>

## Benign Complications

<table>
<thead>
<tr>
<th>Type of adverse event</th>
<th>Frequency with liquid</th>
<th>Frequency with foam</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visual disturbances</td>
<td>*Very rare</td>
<td>***Uncommon</td>
</tr>
<tr>
<td>Headaches and migraines</td>
<td>*Very rare</td>
<td>**Rare</td>
</tr>
<tr>
<td>Sensory nerve injury</td>
<td>*Not reported</td>
<td>*Very rare</td>
</tr>
<tr>
<td>Chest tightness</td>
<td>*Very rare</td>
<td>*Very rare</td>
</tr>
<tr>
<td>Dry cough</td>
<td>Unclear</td>
<td>Unclear</td>
</tr>
<tr>
<td>Superficial phlebitis</td>
<td>*Very rare</td>
<td>*Very rare</td>
</tr>
<tr>
<td>Skin reaction (local allergy)</td>
<td>****Common</td>
<td>****Common</td>
</tr>
<tr>
<td>Matting</td>
<td>**Rare</td>
<td>**Rare</td>
</tr>
<tr>
<td>Residual pigmentation</td>
<td>****Common</td>
<td>****Common</td>
</tr>
<tr>
<td>Skin necrosis (minimal)</td>
<td>**Rare</td>
<td>**Rare</td>
</tr>
<tr>
<td>Embolia cutis medicamentosa</td>
<td>*Very rare</td>
<td>*Very rare</td>
</tr>
<tr>
<td>Livedoid patch/ arterial injection</td>
<td>*Very rare</td>
<td>*Very rare</td>
</tr>
</tbody>
</table>
Little is standardised in **Foam Sclerotherapy**

<table>
<thead>
<tr>
<th></th>
<th>Aethoxysklerol</th>
<th>POL Fibrovein</th>
<th>STS</th>
</tr>
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<tbody>
<tr>
<td><strong>Concentration of liquid used to produce foam</strong></td>
<td>0.5% 1% 3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Liquid / gas ratio</strong></td>
<td>1 to 4</td>
<td>1 to 3</td>
<td>1 to 5</td>
</tr>
<tr>
<td><strong>Gas used to make the foam</strong></td>
<td>Air CO²</td>
<td>O²/CO²</td>
<td></td>
</tr>
<tr>
<td><strong>Volume of foam injected</strong></td>
<td>&lt; 10mls</td>
<td>&lt; 20mls</td>
<td>no limit</td>
</tr>
<tr>
<td><strong>Technique for delivery of foam</strong></td>
<td>Direct needle</td>
<td>Canula</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Butterfly</td>
<td>Catheter</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Single</td>
<td>vs multiple</td>
<td></td>
</tr>
<tr>
<td><strong>Position of patient</strong></td>
<td>flat</td>
<td>tilted</td>
<td></td>
</tr>
<tr>
<td></td>
<td>leg elevated</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Compression</strong></td>
<td>Yes / no</td>
<td>pressure</td>
<td></td>
</tr>
<tr>
<td>When to sclerose tributaries</td>
<td>duration</td>
<td>Concurrent</td>
<td></td>
</tr>
<tr>
<td></td>
<td>delayed</td>
<td>delayed</td>
<td></td>
</tr>
<tr>
<td></td>
<td>with phlebectomies</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Informed written consent for scleroRx

You MUST do this properly

You will see problems and dissatisfied patients after sclerotherapy. Do not “abandon” patients. Answer their calls.

Do not promise miracles, cure or 100% Results depend on the patient’s response which can be variable.

Know when to STOP treating cosmetic veins.
Foam Sclerotherapy Review
Meta-analysis 2007/08/09/2012/13

EFFICACY

Occlusion rate 80-85% with one treatment
90% with two treatments
Re-canalisation rate 17-20%
Vein diameter matters Myers

SAFETY

Neurological events Visual disturbance, migraines, TIA, stroke 1.2 - 2%
VTE < 1%
Pigmentation 18%
Pain at injection site Phlebitis pain lumps 25%
Comparative studies on various VV’s treatments

Laser vs open surgery    RF vs open surgery
RF vs laser              Foam vs TA vs open Sx

• All employ CEAP   P R O’s   Q of L  generic specific   VCSS
  clinical and duplex assessment


Rasmussen Lars Eklof et al   Thermal ablation, foam sclerotherapy and stripping in GSV VV’s Outcome after 5 years.   EVF presentation June 2014  500 patients 5y

Carroll C et al   School of Health   University of Sheffield, UK   Systematic review, network meta-analysis and exploratory cost-effectiveness model of randomized trials of minimally invasive techniques versus surgery for varicose veins   BJS 2014
  31 studies 3,772 patients

VV’s Rx Comparative Trial Results

• Foam Laser RF Sx are all clinically effective

• **Primary** end points
  
  GSV closure
  
  @ 6 mo  Foam complete 55% partial 23%
  Laser 83% 8%
  Open Sx 84% 6%

  Improvement in PRO’s all improve, but less so with foam

• **Secondary** end points

  *Complications* fewer with laser alone but worse by adding foam
  
  *Refluxing saphenous segments* @ 3y  Foam 26.4% Laser 7% RF 6.8% Sx 6.5%
  
  *Clinical recurrence* @ 5y  Laser 46% RF and Sx > 50%
  
  *Need for re Rx* @ 5y  Foam 31% Laser 12.5% Sx 15%
  
  *Cost* different models In UK cost of laser/RF > Sx Rx moving out of hospitals
What is happening to open VVs surgery? Reducing

Public hospital beds restricted to CEAP > C4

Surgeons have adopted endovenous treatment methods and treating a reduced proportion of VVs patients

Training of surgical registrars in VVs surgery is greatly reduced

Boost in “surgical” training of endovenous techniques by ANZSVS (US model)

Patient demand

Industry push

Clinical trials results
Why do I sometimes offer VV’s Surgery

• In one treatment episode surgery treats the valve incompetence abnormal saphenous trunk(s) accessory veins and tributary varicosities

• Duplex-guided surgery greatly improves results

I remove more trunk and tributaries and I rely less on sclerotherapy to tidy up residual disease Pigmentation and Phlebitis reduced
SURGICAL TREATMENT OF VARICOSE VEINS IN 2015

REQUIREMENTS

CLINICAL EVALUATION of the leg

COMPREHENSIVE DUPLEX MAPPING

Match the duplex report with what you see on the leg

DISCUSS Rx Options - MAY BE SURGERY

INFORMED CONSENT    REALISTIC EXPECTATIONS

CLEAR PLAN FOR SURGERY    WHAT TO EXPECT

Precise   LEG MARKING   PRE-OP

ADEQUATE OPERATING TIME

CURRENT SURGICAL TECHNIQUES.......Tiny cuts  vein hooks

inversion techniques   day-only   little down time
V Vs Surgery 2015  

Risks and precautions

VTE

Low  medium or high  risk profile
Age  Operating time  One leg or both  Previous VTE
Associated risk factors
Calf compressors  +/-  TED stockings
Low molecular weight Heparin  X1  X10  ??
Early mobilisation and encourage to walk in a normal fashion

INFECTION

IV  Oral antibiotics

ANALGESICS

Can be reduced by  LA infiltration  and iv panadol
In recovery injectable narcotics limited
At home  Panadol / Panadeine and Anti-Inflams
Ambulatory Phlebectomies

• Surgical removal of segments of saphenous trunks or tributaries or clusters of varicosities under LA in the rooms via tiny stab incisions and vein hooks closing with steri-strips

• Excellent accompaniment to thermal ablation of saphenous trunks or even sclerotherapy of trunks

• European school of thought that removing the refluxing tributaries will eliminate reflux in the saphenous trunks ASVAL

• Excellent to combine this with sclerotherapy for long term follow-up of VVs patients Maintenance
Is VVs Sx still an acceptable option?

• Sx is still the most common treatment for VVs in most countries – Not USA  In developed affluent countries Sx reducing TA increasing

• In developing countries cost is vital so Sx under spinal , or foam sclerotherapy is most popular

• For advanced set of big veins definitely Sx gets the patient a lot better a lot quicker , removing most of the disease at the one treatment episode

• **Surgeons now adopting endovenous Rx**
Thermal Ablation as an In-Patient

Hybrid of surgery and thermal ablation

• Patient admitted to hospital as a day-case
• GA in the operating theatre
• No groin incision or strip saphenous trunks
• Thermal Ablation of saphenous trunks
• Phlebectomies and perforator ligation as required

Advantages
  - Sterile environment
  - Disposables
  - Phlebectomies easier
  - Patient asleep

Fund

Disadvantages
  - No cost saving
  - GA
Guidelines for Endovenous VV’s Rx

**USA  2011  JVS  SVS & AVF  Gloviczki**

- Open VV’s Sx  GSV  2 B
- Open VV’s Sx  SSV  1 B
- Ambulatory phlebectomy  1 B
- Thermal ablation Laser & RF over Sx  1 B
- Sclerotherapy  Liquid or Foam  1 B
- Do NOT Rx perfs in primary VV’s  1 B

**UK  2013  NICE Guidelines  Davies  Bradbury et al**

1  Thermal Abln  2  U G Foam Sclero  3  Open surgery
**Practical discussion points re V V’s Rx**

- What is the patient’s main aim in having Rx
- Which aspects of the leg bother patient
- What the venous mapping duplex scan reveals
- Cost payment by government / funds / patient
- Down-time
- Number of visits and time in compression
- Desire to be asleep , needle phobia , faints
- Several pathways to achieve desired outcome
Pelvic veins

- **Ovarian vein reflux** $R << L$ **Internal iliac v trib reflux**
  Nutcracker SMA over $L$ renal $v$ and other compressions

- Engorged veins in the broad ligament and around pelvic organs causing pelvic symptoms
  **Pelvic venous congestion**

- **Pelvic escape veins** perineum vulva round ligt to produce non-saphenous VV’s or may feed GSV or Giacomini vein reflux (to SSV)

- Rx with **coil ablation +/- sclerotherapy** reduces pelvic symptoms (80%) and leg vein pressure

- Beware over-treatment of pelvic veins
Factors affecting which VVs treatment options to choose

- Duplex ultrasound mapping: what requires treatment?
- Extent of saphenous trunk reflux
- Extent of varicose epifascial/superficial tributaries (clusters of varicosities)
- Training of the treating doctor and their bias
- Equipment available in rooms
- Access to hospital and operating room
- Costs: what will be paid by Government health funds out-of-pocket, health regulations for remuneration
- Patient requests: down time, scars, bruising
- Outcome of scientific trials
Current best practice VVs Rx

- Duplex ultrasound is involved in all phases of Rx
  **ACCURATE VENOUS MAPPING VITAL**
- Thermal ablation for saphenous trunks & AASV: **laser** 1470 to 1500 nm wavelength radial fibre or **RF** segmental ablation
- Clarivein MOCA device does have a place in the office
- **UGFS** to tributaries and varicosities and for F/U
- Ambulatory phlebectomy or stab avulsions effective
- **Microsclerotherapy** to spiders
- Major advanced set of varicosities still consider **open surgery**
Thank you