Venous Incompetence
All Ireland National Thrombosis Conference

Belfast 12\textsuperscript{th} May

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Definition of venous incompetence

- Chronic **venous insufficiency** occurs when these valves become damaged, allowing the blood to leak backward. ... CVI most commonly occurs as the result of a blood clot in the deep veins of the legs, a disease known as deep vein thrombosis (DVT).
Cause of Venous Incompetence

Poor venous flow usually due to:-

a) DVT

b) Mechanical obstruction –
   eg May Thurners Syndrome
Example of May Turner compression

Timme MAJ van Vuuren et al. BMJ Open 2017;7:e017233
PTS

Normal functioning valve

Demonstrating obstruction by thrombus
Signs and Symptoms

Symptoms of Venous Insufficiency

- varicose veins
- darkened, hard, or leathery skin
- swelling
- pain and heaviness
- restless leg syndrome
- leg cramps or spasms
- itchy skin
Diagnosis

a) Severity of PTS often defined by the Villata Scale
   • Provides a global PTS assessment not a binary outcome
   • Does not include venous claudication
   • Patient can easily reach score of >= 5

Other scoring systems:
Ginsberg, Brandjes, Widmer, CEAP, Venous Clinical Scoring system

Assessment can be subjective - see next slide re Villata
How to assess severity? – difference between Villata and Ginsberg clinical scales – Susan Kahn 2006 JTH

b) Vascular or duplex ultrasound
### Table 1. Villalta’s V.E.D. Score

<table>
<thead>
<tr>
<th>Symptoms/clinical signs</th>
<th>None</th>
<th>Mild</th>
<th>Moderate</th>
<th>Severe</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Symptoms</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pain</td>
<td>0 points</td>
<td>1 point</td>
<td>2 points</td>
<td>3 points</td>
</tr>
<tr>
<td>Cramps</td>
<td>0 points</td>
<td>1 point</td>
<td>2 points</td>
<td>3 points</td>
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<tr>
<td>Heaviness</td>
<td>0 points</td>
<td>1 point</td>
<td>2 points</td>
<td>3 points</td>
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<tr>
<td>Paresthesia</td>
<td>0 points</td>
<td>1 point</td>
<td>2 points</td>
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<tr>
<td>Pruritus</td>
<td>0 points</td>
<td>1 point</td>
<td>2 points</td>
<td>3 points</td>
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<tr>
<td><strong>Clinical signs</strong></td>
<td></td>
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<td></td>
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<tr>
<td>Pretibial edema</td>
<td>0 points</td>
<td>1 point</td>
<td>2 points</td>
<td>3 points</td>
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<tr>
<td>Skin induration</td>
<td>0 points</td>
<td>1 point</td>
<td>2 points</td>
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<tr>
<td>Hyperpigmentation</td>
<td>0 points</td>
<td>1 point</td>
<td>2 points</td>
<td>3 points</td>
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<tr>
<td>Redness</td>
<td>0 points</td>
<td>1 point</td>
<td>2 points</td>
<td>3 points</td>
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<tr>
<td>Venous ectasia</td>
<td>0 points</td>
<td>1 point</td>
<td>2 points</td>
<td>3 points</td>
</tr>
<tr>
<td>Pain on calf compression</td>
<td>0 points</td>
<td>1 point</td>
<td>2 points</td>
<td>3 points</td>
</tr>
<tr>
<td>Venous ulcer</td>
<td>Absent</td>
<td></td>
<td>Present</td>
<td></td>
</tr>
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</table>
PTS and site of VTE
Sequalae of DVT
Chronic deep venous disease
Prevention – good news

• Routine now in all hospitals
• Kings College London have reported a reduction in HAT and we have also seen this at North Bristol Trust
Treatment options for DVT

Conservative treatment

- Anticoagulation
- Compression
- Leg elevation
- Limited impact on post thrombotic syndrome
Treatment focuses on:-

Good anticoagulation, esp in first 2/52

Compression hosiery –

• Brandjes, Prandoni 1997– no placebo arm
• Kahn 2008– SOX Trial – poor compliance, and fitted late
• Mol – 2016 still advocates GECS but looking at 1yr versus 2 years – suggests 2 years and continuing in some patients

Development of PTS was considered ‘unfortunate’
Consider catheter-directed thrombolytic therapy for patients with symptomatic iliofemoral DVT who have:

- symptoms of less than 14 days' duration and
- good functional status and
- a life expectancy of 1 year or more and
- a low risk of bleeding.
Ultrasound-enhanced, catheter-directed thrombolysis for deep vein thrombosis (IPG523)

This procedure should only be used with special arrangements for clinical governance, consent and audit or research.

Percutaneous mechanical thrombectomy for acute deep vein thrombosis of the leg (Due May 2019)

In consultation, likely to be similar
Thinking about Virchow’s triad

- Hypercoagulability - anticoagulation
- Injury to blood vessels
- Venous stasis

Injury to the blood vessels has been ‘side-lined’
May Thurner syndrome

Remember
30% patients with DVT have PTS
50%- 60% of patients with iliofemoral DVT have PTS
Other Treatments

Surgical by-pass surgery
  Few patients and not great outcomes

Catheter Directed Thrombolysis
  Reduces clot size and thus symptoms
  Thought would reduce PTS – not in reality

Surgical Thrombectomy
  For those who could not have thrombolysis
  For those in whom thrombolysis is ineffectual
Further treatment for iliofemoral DVT to prevent Venous incompetence

- Insertion of stents is not a new procedure – first reports from Germany, Sweden and the USA in the early 1990s
- Last five years – emergence of a new era
- Many variables – how to assess severity – difference between Villata and Ginsberg clinical scales – Susan Kahn 2006 JTH
- Compliance with anticoagulation/GECS
Options for treatment of iliofemoral DVT

- Catheter directed thrombolysis
- Pharmaco-mechanical thrombectomy
- Mechanical thrombectomy

Interventions for iliofemoral DVT
Stents

Original options limited

- Wallstent

- Arterial Stents - small diameters

- High radial force does not imply crush resistance
Evolving stents

New Dedicated Venous Stents

- Optimed
- Cook
- Veniti
- Bard
- Medtronic
- Boston Scientific
Food for thought:

• Migration of Iliac Vein Stents to the Heart
  – Case study and review in 2017 in Vascular Disease and Management
  – Report on 2 cases
  – Rare but life threatening condition
The future looks bright

- Careful selection of patients with:
  - Iliofemoral DVT
  - PTS and chronic venous insufficiency

If seen in thrombosis clinics, vascular clinics
Refer to a centre where vascular stenting is taking place

Dublin - Gerry O’Sullivan
Each year, one in every 1,000 Britons develops deep vein thrombosis - a blood clot in a large vein. This can cause permanent vein damage, raising the risk of further clots. Andrea Fernandez, 25, a communications assistant from Brixton, South London, was the first person in the world to undergo a new treatment to reduce the symptoms and prevent a second DVT, as she tells SOPHIE GOODCHILD.