New frontiers in embolisation technology:
Ruby, POD packing coil & Lantern

Dr Ian McCafferty
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Charles DOTTER: 1920-1985
Father of Interventional Radiology 1964
Sven-Ivar SELDINGER 1921-1998

Julio PALMAZ 1945-

Josef ROSCH 1925-2016
“An innovative, creative mind must be an integral part of every Interventionist”
Landmarks in Interventional Radiology

- 1964 Angioplasty
- 1966 Embolisation of spinal tumour
- 1967 Judkins technique for coronary angiography
- 1969 Prototype catheter delivered stent
- 1970s Embolisation coils
- 1970’s Microcatheter technology
- 1972 Embolisation of bleeding gut
- 1973 Embolisation of pelvic bleeding secondary to trauma
- 1974 Selective arterial thrombolysis
- 1977 Embolisation of PAVM’s
- 1978 Varicocele embolisation
- 1980s Biliary stents
- 1980s Tracker microcatheters
- 1982 TIPS
- 1983 Balloon expandable stents
- 1983 Detachable coils
- 1991 EVAR
- 1995 Fibroid embolisation
- 1999 EVLT to treat varicose veins
- 2000s Drug eluting stents (DES)
- 2000s SIRT
- 2010s Drug eluting balloons (DEB)
What are the current drivers for Peripheral IR?

• Technology advances
  – Stents / balloons / catheters / guidewires
  – New devices: thrombectomy; EVAR; Plugs
  – New horizons

Most significant advances in past 10yrs has been the miniaturization of equipment

Application of NIR techniques & equipment
• Origins in NIR
• Young innovative company (formed circa 2004)
• Interests:
  • Thrombus removal e.g Stroke, DVT, PE & Dialysis
  • Embolisation – Coils. POD packing
  • Vascular access – Guidecaths (atraumatic tips), Microcatheters
• Ideally placed to enter PVI
Coils: What are the ideal properties?

*Ease of use*

*Safe deployment*

*Quick reliable occlusion – “tight pack”*

*Consistent action*

*Radio-opacity*

*Manoeuvrability*

*Microcatheter compatible – “range of sizes”*
RUBY Coil: Properties

- High volume detachable coil
- Microcatheter deliverable (0.025”)
- Simple detachment
- Standard & soft options
- Controlled tight packing
- Marker system with Lantern microcatheter
- Less catheter “kick out”
POD Packing Coil: Properties

• Long soft coil
• Straight – no preformed shape
• Ruby coil technology

“LIQUID COIL”
• Tightly packs behind leading coil
  – Ruby / POD
• No need to measure – single diameter
  QUICK
  – 15, 30, 45 & 60cm lengths
4 mm x 20 cm
0.018” coil

30 cm POD
Packing Coil
## Packing volume

<table>
<thead>
<tr>
<th>Device</th>
<th>Size</th>
<th>Number of coils</th>
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<tbody>
<tr>
<td>POD (PC)</td>
<td>60cm (0.020”)</td>
<td>2</td>
</tr>
<tr>
<td>Interlock</td>
<td>6mm x 20cm (0.018”)</td>
<td>17</td>
</tr>
<tr>
<td>Concerto</td>
<td>6mm x 20cm (0.0165”-0.021”)</td>
<td>17</td>
</tr>
<tr>
<td>Azur</td>
<td>6mm x 20cm (0.018”)</td>
<td>16</td>
</tr>
</tbody>
</table>
Lantern microcatheter

- Low Profile OD (2.6F)
- High flow lumen (.025") 3.4mls/s @ 750PSI
- Radiopaque Distal 3 cm
- Dual Distal Marker
- Lengths:
  - 115 cm (0.53 DS)
  - 135 cm (0.59 DS)
  - 150cm* (0.64 DS)
- Pre Shaped Tip Options
  - Straight, 45, and 90 degree angles
Accurate & safe delivery
Guiding catheters – e.g Benchmark

**Visibility:** improved distal shaft radiopacity

**10 Transitions:** optimal trackability

**Soft-Tip:** safe navigation

**Round wire:** navigation and kink resistance

**Summary:**
1. Soft & Atraumatic
2. Trackable
3. Stiffer shaft
4. 6F 0.71 ID
5. Lengths 95 or 105
A New Level of Tip Softness

Designed to Maximize Support

<table>
<thead>
<tr>
<th>Benchmark 071</th>
<th>Competitor A 070</th>
<th>Neuron 070</th>
<th>Competitor B 072</th>
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<tbody>
<tr>
<td>82g</td>
<td>58g</td>
<td>40g</td>
<td>33g</td>
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More Support

<table>
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<tr>
<th>Benchmark 071</th>
<th>Neuron 070</th>
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<th>Competitor B 072</th>
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<tbody>
<tr>
<td>37g</td>
<td>50g</td>
<td>56g</td>
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Softer
Thank you
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