Angioplasty Inventory

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ANZSIN meeting
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Angioplasty procedure

1. Step 1: Initial Access 18G/21G needles
2. Step 2: Haemostatic Sheath
3. Step 3: Guide wire
4. Step 4: Guiding Catheter
5. Step 5: Angioplasty Balloon
6. Step 6: Balloon Inflation
**Angiography Kit**

![Angiography Kit Image]

### Pack Contents

<table>
<thead>
<tr>
<th>Qty</th>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>L65804</td>
<td>LIFEMED ANGIOWIRE 0.035&quot; 145cm 2mm JFC</td>
</tr>
<tr>
<td>1</td>
<td>IN0259</td>
<td>FORCEPS, MOSQUITO, STRAIGHT 15cm</td>
</tr>
<tr>
<td>1</td>
<td>NE0440</td>
<td>SCALPEL NO. 11 BLADE WITH HANDLE</td>
</tr>
<tr>
<td>1</td>
<td>NE1148</td>
<td>BLUNT DRAWING UP NEEDLE</td>
</tr>
<tr>
<td>1</td>
<td>NE1875</td>
<td>INTRO NEEDLE, 18G X 1&quot; HUMED</td>
</tr>
<tr>
<td>1</td>
<td>SC0914</td>
<td>STOPCORK, 1-WAY H/P, ON HANDEL</td>
</tr>
<tr>
<td>1</td>
<td>SY0126</td>
<td>SYRINGE 10ML, Luer Lock, Concentric</td>
</tr>
<tr>
<td>1</td>
<td>SY0435</td>
<td>SYRINGE 10ML, Luer Slip</td>
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<tr>
<td>1</td>
<td>SY1187</td>
<td>SYRINGE 3ML, Luer Lock, Concentric</td>
</tr>
<tr>
<td>1</td>
<td>BW0881</td>
<td>GALLIPOT, 150ml</td>
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<tr>
<td>1</td>
<td>BW0883</td>
<td>GALLIPOT, 150ml</td>
</tr>
<tr>
<td>1</td>
<td>BW0986</td>
<td>KIDNEY DISH, CLEAR</td>
</tr>
<tr>
<td>1</td>
<td>BW1159</td>
<td>BOWL, SPONGE 160mmC</td>
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<tr>
<td>1</td>
<td>BW1223</td>
<td>KIDNEY DISH, YELLOW</td>
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<tr>
<td>1</td>
<td>BW1780</td>
<td>GUIDEWIRE RIAL 50000C</td>
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<tr>
<td>1</td>
<td>BS1230</td>
<td>PROTECTION STATION, NON-PRESSURIZED</td>
</tr>
<tr>
<td>1</td>
<td>BS0505</td>
<td>FLUOROSCOPIC COVER 112 X 97CM</td>
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<tr>
<td>1</td>
<td>BS0506</td>
<td>FEMORAL ANGIO DRAPE 180X917.5cm</td>
</tr>
<tr>
<td>1</td>
<td>BS0507</td>
<td>DRAPE SWABS, COTTON 10 X 10cm</td>
</tr>
<tr>
<td>1</td>
<td>BS0508</td>
<td>TOWEL, CLAMP</td>
</tr>
<tr>
<td>1</td>
<td>BS0509</td>
<td>TOWEL, GLOVE, SMALL</td>
</tr>
<tr>
<td>1</td>
<td>BS0510</td>
<td>TOWEL, GLOVE 137 X 218CM</td>
</tr>
</tbody>
</table>
Initial access
Haemostatic sheath
Guide wires

- Wires vary in length, diameter, stiffness, coating, tip shape, special features.

- Four types
  - Starting --- floppy tip, Teflon coated steel
  - Selective --- shapeable tip, stearable, high torque
  - Exchange wire --- very stiff ( excellent balloon support ) vessel traumatizing
  - Specialty wires : Road runner( renal, cerebral, critical stenosis )
Guide wires

- The most common wire diameter used is .035 in (called 035).

- ALL you need (our experience):
  - 035 (starting) comes with the angiographic pack (150cm).
  - V18 control (selective) 018 diameter
    - Floppy tip, shapeable, torque device
  - Amplatz (exchange) 035 very stiff, excellent balloon support.
Angiographic catheters

- Flush (side holes) .... You won’t need them.

- Selective (all you need)
  - Straight 40 cm
  - Teg T (hockey stick tip) 80 cm
  - Allows to steer the guide wire around a bend.
  - Almost always required when passing a exchange wire.

- Specialty catheters: Fancy names (cobra, headhunter, RIM, RDC) You won’t need them.
Angioplasty Balloon
Balloon terminology ( Lingo )

- Balloon diameter – nominal inflated balloon diameter measured at a specific pressure. ( measured in mm )
- Balloon length – length of the body of balloon ( measured in cm )
- 8x4 balloon – 8mm diameter x 4 cm length.
- Balloon profile – maximum diameter of balloon when wrapped and deflated
Balloon terminology

- **Inflation rate** – how quickly balloon will inflate to nominal size

- **Deflation rate** – how quickly balloon will completely deflate, return to original size.

- **Trackability** – ability of catheter to track over the guide wire.
Balloon terminology

- **Nominal pressure**
  - amount of pressure (atm) required to inflate balloon to shape.

- **Rated Burst pressure (RBP)**
  - highest pressure at which the manufacturer has a 95% confidence that 99.9% of balloons will not burst at or below with a single inflation.
<table>
<thead>
<tr>
<th>Description</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balloon Diameter (Inflated)</td>
<td>8 mm</td>
</tr>
<tr>
<td>Balloon Length</td>
<td>4 cm</td>
</tr>
<tr>
<td>Recommended Introducer</td>
<td>6 F</td>
</tr>
<tr>
<td>French Size (Catheter)</td>
<td>5 F</td>
</tr>
<tr>
<td>Catheter Length (Usable)</td>
<td>75 cm</td>
</tr>
<tr>
<td>Recommended Guide Wire</td>
<td>.035 in</td>
</tr>
<tr>
<td>Rated Burst Pressure</td>
<td>16 ATM</td>
</tr>
</tbody>
</table>
Desirable characteristics

- Low profile
- Good Trackability
- High visibility
- Rapid inflation/ deflation
- Durable for re-wrapping and reuse
Balloon types

- Non compliant
  - A balloon will not expand > 5% of it’s labeled diameter
  - All angioplasty balloons are non compliant

- Compliant
  - Increasing pressure will expand the balloon beyond it’s labeled diameter.
  - Thrombectomy and occlusive balloons.
Non compliant balloons

- Low pressure to 12 atm (arterial)
- High pressure to 20 atm (recommended)
- Ultra high pressure to 30 atm
# Balloon Brands

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Product Name</th>
<th>Nominal (atm)</th>
<th>Rated Burst (atm)</th>
<th>Endhole (inch)</th>
<th>Shaft Length (cm)</th>
<th>Sheath Sizing Size (F)</th>
<th>Balloon Diameters (mm)</th>
<th>Balloon Lengths (cm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bard Peripheral Vascular, Inc.</td>
<td>Conquest</td>
<td>8</td>
<td>Up to 30</td>
<td>0.035</td>
<td>50, 75, 120</td>
<td>6–8</td>
<td>5, 6, 7, 8, 9, 10, 12</td>
<td>2, 3, 4, 6, 8</td>
</tr>
<tr>
<td></td>
<td>Atlas</td>
<td>4, 6</td>
<td>Up to 18</td>
<td></td>
<td>75, 120</td>
<td>7–12</td>
<td>12, 14, 16, 18, 20, 22, 24, 26</td>
<td>2, 4, 6</td>
</tr>
<tr>
<td></td>
<td>Rival</td>
<td>6, 8</td>
<td>Up to 16</td>
<td></td>
<td>80, 135</td>
<td>5–7</td>
<td>3, 4, 5, 6, 7, 8, 9, 10</td>
<td>2, 4, 6, 8, 10, 15</td>
</tr>
<tr>
<td>Boston Scientific Corporation</td>
<td>Mustang Balloon Catheter</td>
<td>10 (3–8 mm, 12 mm), 8 (9–10 mm)</td>
<td>Up to 24</td>
<td>0.035</td>
<td>40, 75, 135</td>
<td>5 (3–7 mm), 6 (8–10 mm), 7 (12 mm)</td>
<td>3–10, 12</td>
<td>2, 3, 4, 6, 8, 10, 12, 15, 18, 20</td>
</tr>
</tbody>
</table>
How to choose a balloon?

- Diameter of pre-post stenotic segment
  - Balloon diameter should be 1mm over

- Length of stenotic segment
  - Extend 5mm on either side

- Resistant waist
  - Smaller length balloon (2cm) – greater radial pressure at the desired location.
  - Cutting balloon
Inflation device

Encore™ 26 Inflator

High pressure inflation device designed to exert pressure for balloon inflation and

Design Features

- The Encore Inflation Device assists in controlled single step balloon inflation
- 20cc Inflation capability, complete with pressure gauge
- Large printed pressure gauge dial with finger latch mechanism for 1-step locking and pressure release
Inventory - Basic tools

1. Peripheral angiographic pack (BARD). ($108)
2. ULTIMUM- haemostatic sheath introducer pack 5F-6F-7F (St. Jude medicals). ($15)
3. V18 Control wire (150CM) Boston scientific. ($100)
4. Guiding catheters (COOK) ($35)
   KMP 5f 40CM (straight, hockey stick)
5. Angioplasty balloon 6x4, 7x4, 8x4 ($200-400)
6. Analgesia, Thrombolytic, heparin ($150)
7. 4-0 proline ($10)
   • AVERAGE COST A $800.