Chapter 2:
From wrist to brachial – Radial navigation
From the subclavian artery to the ascending artery
Anatomical radial variations

<table>
<thead>
<tr>
<th>1533 patients</th>
<th>Normal anatomy</th>
<th>High bifurcations</th>
<th>Radial loops</th>
<th>Radial tortuosities</th>
<th>Other anomalies</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of patients</td>
<td>1321 (86%)</td>
<td>108 (7%)</td>
<td>35 (2.3%)</td>
<td>30 (2%)</td>
<td>39 (2.5%)</td>
</tr>
<tr>
<td>Failure rate %</td>
<td>0.9</td>
<td>4.6</td>
<td>37.1</td>
<td>23.3</td>
<td>12.9%</td>
</tr>
</tbody>
</table>

Lo, Heart 2009; 95: 410-5
Anatomical radial variations

- Stenosis
- Spasm
- Tortuosity
- Loop
- Small branch
If resistance, what to do?

Never force +++

Inject dye to understand the anatomy and cause of the issue

Take an hydrophilic J wire or PCI wire

Follow under fluoroscopy wire or catheter progression
Cocktail

Vasodilator
Verapamil: 2.5mg
Nitro: 100μg
Diltiazem: 5mg

UHF
Diagnostic: 50 UI/kg
PCI: 70-100 UI/kg

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Spasm management

PREVENTION:

A good cocktail: Verapamil
 +/- nitrates or diltiazem

No pain: Emla®, Xylocaine...

Long hydrophilic sheath

TREATMENT:

Vasodilator

Sedation
High take-off of radial artery

4 varieties
How to straighten a loop?

Cross the loop with floppy wire

Cross the loop with 5F JR4 catheter

Advance a 0.035” wire

Pull back the catheter
Immediate outer compression
Heparin neutralisation and shift to another vascular access

OR

Cross the lesion with a 0.014” wire and inner catheter compression
How to enter ascending aorta?

Ask patient to take a deep breath and push the wire

OR

Use a JR4 or a pigtail catheter and turn clockwise to orient the wire through ascending aorta and push it.
Sub-clavian tortuosity predictive factors

Old age

Hypertension

Woman
Arteria Lusoria