## Anatomical radial variations

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

Immediate outer compression
Heparin neutralisation and shift to another vascular access

OR

Cross the lesion with a 0.014” wire and inner catheter compression
Radial navigation - summary

Anatomical variations in 14% of cases

Check with dye to understand

Use hydrophilic or 0.014” wire to cross

Know your limits

Keep safety in mind: never force to avoid perforation or dissection