RADIAL ARTERY PSEUDOANEURYSM AFTER CARDIAC CATHETERIZATION:

Clinical features and nonsurgical treatment results
Potential conflicts of interest

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I do not have any potential conflict of interest
INTRODUCTION AND AIMS

• Radial artery pseudoaneurysm (RpsA) is an extremely rare complication after transradial catheterizations.

• There is very little information about them and their optimal treatment.

• The purpose of this study was to describe RpsA features, risk factors and non-surgically management results.
METHODS

• We prospectively collected all consecutive RpsA that occurred in our lab from 2004 to 2013

• We collected data related to:
  • The procedure (introducer size, compression type and immediate local complications)
  • Time to presentation and diagnosis of RpsA (symptoms, time of diagnosis)
  • Treatment applied
RESULTS

- During this period 16,808 left heart catheterizations were done (radial access in 96.5%)
  - There were 5 RpsA (Incidence: 3 x 10,000 cases)
    - 4 Male
    - Mean Age 74±14 years
### Procedure

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Count (Percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 French sheath</td>
<td>4 (80%)</td>
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<tr>
<td><strong>Anticoagulation</strong> during procedure</td>
<td>4 (80%)</td>
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<tr>
<td>Antiagregation</td>
<td>4 (80%)</td>
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<tr>
<td><strong>Coronariography indication</strong></td>
<td></td>
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<tr>
<td>SCA-NSTEMI</td>
<td>4 (80%)</td>
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<tr>
<td>Graft vascular disease</td>
<td>1 (20%)</td>
</tr>
<tr>
<td><strong>Forearm Hematoma</strong></td>
<td>4 (80%)</td>
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Presentation and time to diagnosis

- Time to diagnosis was 10±5 days
- Diagnosis was suspected all clinically
  - Erythematous mass at the puncture site (A)
- Interestingly there were
  - Skin ulceration in 2 cases (B)
  - Spontaneous pulsatile bleeding at home 1 case
US diagnosis confirmation

- The narrowness of the tissue separating the interior of the RpsA from the exterior
  - 0.09 to 0.12 cm
Mechanical compression
(n=5, 100%)

Ineffective
(n=2, 50%)

Effective
(n=3, 60%)

Thrombin injection
(1ml, 500UI)

Effective
(n=2, 100%)

Assymptomatic Radial occlusion
(n=1)

C2: pneumatic device 48h -> RpsA rupture
C4: pneumatic device 24h

C1: pneumatic device 72h and elastic bandage 48h
C3: pneumatic device 5h
C5: US probe -> RpsA rupture
Proximal compression pneumatic device
CONCLUSIONS

1. RpsA is a very rare but potentially serious complication due to the risk of external wall rupture.
2. Inadequate compression, anticoagulation and 6F catheters are factors that may predispose to them.
3. Forearm hematoma is a sign that should alert us about the possibility of a future RpsA.
4. A non surgical approach is a very effective strategy.
Preventive measures in anticoagulated patients:

- Adequate compression
- Use 4F and 5F catheters whenever possible
- In patients with forearm hematoma
  - Perform vascular ultrasound prior to discharge and 48-72 hours later
OUR RECOMMENDATIONS TO TREAT RpsA

Mechanical compression, proximal to the RpsA

Thrombosis of RpsA?

- NO
- YES

US-guided Thrombin
(1ml, 500UI)

Thrombosis of RpsA?

- YES
- NO

Surgery

Non occlusive compression 24 h