“Nurse and Technician forum – part II”

Bleeding complications and puncture site complications

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Disclosure

Speaker name:

...Prof. Dr. S. Müller-Hülsbeck.................................................................

☒ I have the following potential conflicts of interest to report:

☒ Consulting: Terumo, Boston Scientific

☐ Employment in industr

☐ Stockholder of a healthcare company

☐ Owner of a healthcare company

☐ Other(s)

☐ I do not have any potential conflict of interest
Bleeding complications and puncture site complications

• **Access related / PUNCTURE SITE COMPLICATIONS**
  
  Vessel Injury / Hemorrhage
  Dissection
  Closure Device Failure/ Malfunction

• **Guidewire / PTA/ Stent related**
  
  Embolisation
  Device Malfunction /Dislocation
  Vessel Perforation

J Vasc Interv Radiol 2003; 14:S495–S515
Complications of Peripheral Interventions

Risks of Outpatient Angiography and Interventional Procedures: A Prospective Study

Gradinscak et al. AJR: 183; August 2004

...bleeding requiring blood transfusion in 5 / 441 (1%) interventional procedures

<table>
<thead>
<tr>
<th>Complication</th>
<th>All Studies ( ^a ) ( n = 441 )</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
</tr>
<tr>
<td>Hematoma and bruise</td>
<td>75</td>
</tr>
<tr>
<td>Local pain</td>
<td>49</td>
</tr>
<tr>
<td>Other</td>
<td></td>
</tr>
<tr>
<td>Infected hematoma</td>
<td>1</td>
</tr>
<tr>
<td>Anaphylaxis</td>
<td>1</td>
</tr>
<tr>
<td>Pulmonary edema</td>
<td>1</td>
</tr>
<tr>
<td>Rash, other (^b)</td>
<td>19</td>
</tr>
<tr>
<td>Total</td>
<td>146</td>
</tr>
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</table>
Access Related
Arterial Puncture and Sheath Insertion

I. Evaluate puncture site!
II. Evaluate again before VC!
beveled sharp puncture needle
Terumo Wire Scaling

BE AWARE WITH TERUMO WIRE HANDLING!
Case 1: Arterial Puncture – bleeding complication

- 43 yrs, Claudication IIb, TASC B

- Obesity
- Planned left SFA Intervention
- Difficult antegrade Puncture
- Clinical Signs of Hypovolemia
- Fluid Resuscitation, Leg Elevation
Angio via contralateral groin
Coil-Embolisation

http://radiologie.diako.de
Case 2: Delayed notice of bleeding complication
female, 82 yrs,
done: CAS, onset of pain
Plan: MDCT – dual phase
Case 2: Delayed notice of bleeding complication
female, 82 yrs, done: CAS, onset of pain
Plan: MDCT – dual phase
Retrograde 4F
2.7F Progreat™
A. circumflexa ilii profunda
Case 2: Delayed notice of bleeding complication
done: CAS
Plan: Platin coils 2mm
Case 3: Wire uncontrolled – bleeding complication

• Uncontrolled Wire Advancement (hydrophylic wire tip)

CASE
• Pt. post cardiac catheterization
• sudden right flank pain
• Hypotension
• US: Hematoma
Suspected Wire Perforation
Selective Arteriogram
Coiling
Can be fatal!
Perirenal Hemorrhage from Transcortical Collaterals


BE AWARE WITH TERUMO WIRE HANDLING!
Case 4: Misplaced Collagen Plug with Anker (VCD) – Access site complication

Male pt., 67 yrs. post Angioseal
Case 4: Misplaced Collagen Plug with Anker (VCD) – Access site complication
Access Site Complications may need surgery, especially when VCD related!!!
Guidewire /PTA/ Stent Complications

- Distal Embolisation
- Device Malfunction / Dislocation
- **Vessel Perforation / Penetration**
Case 5: PTA related bleeding complication
Female, 32 yrs, HPT, fibrous dysplasia
Post Cutting Balloon: Onset of flank pain
Vessel Rupture

- Management?
Post prolonged balloon occlusion
Final Result
Case 6: PTA / Stent related bleeding complication
male, 72yrs, PTA / Stent EIA

-6F access
-0.035inch GW
-BES

-sudden onset of pain!!!

-immediate balloon occlusion!!!
Case 7: Wire advancement – bleeding complication
female 86 yrs Fontaine III
Plan: Recanalization of Popliteal Artery
Micro-Catheterization and Coiling
BE AWARE WITH TERUMO WIRE HANDLING!

- Alternatives:
  - MC
  - Cuff
Think before creating.
Take Home Points

- Evaluate access site carefully, for both, vascular access and closure!
- Be careful with hydrophilic wire handling!
- Learn IR bail-out techniques and have tools ready!
  - Balloon Tamponade
  - Embolisation w. Coils, Gelfoam, others
  - Stent Grafts
- Conquer your own complications, but know limitations!
- Have vascular surgeon as friend!
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