Embolotherapy of peripheral AVMs

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Disclosure

Speaker name:
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I have the following potential conflicts of interest to report:

- Consulting
- Employment in industry
- Stockholder of a healthcare company
- Owner of a healthcare company
- Other(s)

I do not have any potential conflict of interest
# Vascular Anomalies

## Tumors
- **Benign:**
  - Infantile Hemangioma (IH)
  - Rapidly involuting congenital hemangioma (RICH)
  - Non-involuting congenital hemangioma (NICH)
- **Borderline:**
  - Kaposiform Hemangioendothelioma (KHE)
  - Epithelioid Hemangioendothelioma (EHE)
- **Malignant:**
  - Angiosarcoma

## Malformations
- **Slow flow:**
  - Capillary malformation (CM)
  - Venous malformation (VM)
  - Lymphatic malformation (LM)
- **Fast flow:**
  - Arteriovenous malformation (AVM)
  - Arteriovenous fistula (AVF)
- **Combined and Syndromic**
Fast Flow Vascular Anomalies
Flow Dynamics
Impact on Treatment Decision

- Availability of liquid, mechanical, spherical embolic materials

- Indications to treat: pain, functional impairment, ulceration, bleeding, flow related aneurysms, bone dystrophia, venous insufficiency, high output cardiac failure

- Aim: permanent nidus effusion and plugging of the dominant outflow vein
Flow Dynamics
Impact on Embolisation Techniques

• Techniques: transarterial, transvenous, percutaneous access or combined
• One or more sessions required
• Go for nidus and/or DOV embolisation in retrograde push-technique
Flow Dynamics
Impact on Embolisation Techniques

Choice of Embolic Liquid Embolisation Agents

- Alcohol 96%, Ethylene Vinyl Alcohol Copolymer (Onyx®) for nidus penetration

- **Onyx:** Ethylene Vinyl Alcohol Copolymer soluted in Dimethyl-Sulfoxide (DMSO). For desired character of the liquid, the concentration can be varied to 6% or 8% EVOH (Onyx 18, Onyx 34). Micronized tantalum powder for radiopacity

- Indications: transarterial nidus embolisation, direct percutaneous access to nidus and/or DOV, transvenous retrograde push-through technique for nidus and DOV embolisation
Case I
Symptomatic Peripheral AVM Lower Limb

- 47 years, female
- Pulsating tumor in right calf with increase in size
- Pain, leg swelling
- Recurrent ulceration and bleeding episodes
- Purpura jaune d’ocre
- Increasing immobilization in daily life
Case I
Case II
Symptomatic Pelvine AVM

38 years old
Female
Abdominal pain
Cardiac symptoms
Right heart insufficiency
Case II
Take Home Points

• Diagnosis
• Assessment of AVM Characteristics
• Interdisciplinary Consult
• Interventional Radiology Procedure Plan
• Risk-benefit Stratification
• Technical and Therapeutic Equipment
• Consideration of Reimbursement Issues
• Peri- and Postinterventional Case & Care Management
Thank you for your attention

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