Background

- AVM remain most challenging among various malformations to be treated
- Arteriography determining angioarchitecture is helpful to define specific endovascular treatment

High-Flow AVM Angioarchitecture

Yakes AVM classification system advanced the description of AVM angioarchitectures building on previously classification systems

Intraarterial vs. Percutaneous Embolotherapy Techniques

37 year-old male painful AVM Typ IIIb

Intraarterial Embolotherapy

i.a. embolization using ethylene vinyl alcohol (Onyx®) and n-Butyl cyanacrylate (Histoacryl®)
large area of plantar necrosis

persistent AVM
Percutaneous Coiling/Ethanol Embolotherapy

- 3 y follow-up
  - Puncture of aneurysmal vein
    - 18G/15 cm; Chiba Biopsy Needle®, Cook Medical
  - Coiling of aneurysmal vein
    - 5 fibered coils, 10 mm; Nester Embolization Coils®, Cook Medical
  - Injection of 4.5 cc, 96% ethanol

1 y follow-up
- Residual AVM (other compartment)

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Yakes Type IIIb AVM

Coiling
- 5 fibered coils, 10 mm; Nester Embolization Coils®, Cook Medical
- 4 fibered coils, 8 mm; Nester Embolization Coils®, Cook Medical

Embolosclerotherapy
- 15 ml; 96% ethanol

Nester coils were surgically removed 3 mo later

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Yakes Type IV AVM

- Direct puncture of AV shunt (venous side) 96% ethanol
- Direct puncture of feeding arterial pedicle (arterial side) 50% ethanol

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Percutaneous Embolotherapy Techniques

42 year-old male
- Painful AVM Typ IIIb

Percutaneous Embolotherapy Techniques

40 year-old male
- AVM interstitial Typ IV
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3 months MRA f-u
2 treatment sessions

Yakes Type IIIB AVM
- Coils lessen endovascular complications when densely packed in the aneurysmal vein of Yakes Type IIIb AVMs
- Ethanol (often additionally) required to completely occlude the coiled aneurysmal vein

Yakes Type IV AVM
- Mixture of (50-96%) ethanol and non-ionic contrast can be curative in this lesion type

Conclusion