Current Percutaneous Embolotherapy Techniques For Curative Treatment Of AVMs Of The Foot

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Background

- AVM most challenging among various malformations to be treated
- Minimally invasive embolization techniques preferred therapeutic option
- Arteriography determining angioarchitecture helpful to define specific endovascular techniques

High-Flow AVM Angioarchitecture

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

Yakes Type IIIb AVM

1 y follow up

- Puncture of aneurysmal vein
  - 18G/15 cm; Chiba Biopsy Needle®, Cook Medical
- Coiling
  - 5 fibered coils, 10 mm; 4 fibered coils, 8 mm; Nester Embolization Coils®, Cook Medical
- Embolosclerotherapy
  - 15 ml 96% ethanol, via G18 needle used for coiling
- Nester coils were surgically removed 3 months later

JVS, 2015, in press

Very small, residual AVM in a different compartment

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Yakes Type IIIb and IV AVM

Puncture of vein aneurysm
- 18G/15 cm
- 9 fibered coils (6 mm & 10 mm)
- 8 cc of 96% ethanol

Staged (4 weeks later)
- 19 coils (Azure Coils®, Terumo; Vortex Coils®, Boston Scientific)
- 10.5 cc of 96% ethanol

additional infiltrative Yakes Type IV AVM became obvious
- staged treatment: 11.5 cc and 12.4 cc ethanol at 4 and 9 weeks later
- direct puncture of AVM microfistulas 96% ethanol embolization
- direct puncture of feeding arterial pedicle (that flowed into tissue) 50% ethanol was injected

Conclusion

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