Evaluation of the severity of venous obstruction

O Hartung

Introduction

- Veins are different from arteries
  - Low flow in large diameter vessels
- Obstruction
  - Stenosis or thrombosis
  - Fibrosis of the venous wall
  - Collateral pathways
  - +/- reflux
  - Important flow modifications

Evaluation

- Anatomic: direct evaluation
- Hemodynamic: mainly indirect
  - Lesion
  - Inflow-outflow
  - Collateral pathways
  - Venous wall

Pressure measurements

- Different techniques
- Pressure gradient => obstruction
- But absence of gradient ≠ absence of obstruction
  - Collateral pathways

Pletysmography

- Existence of CVI
- Mechanism
  - Obstruction
  - Reflux
  - Obstruction and reflux
  - +/- severity
**Duplex scan**

- Hemodynamic evaluation
  - Absence of definition of a significant stenosis in venous system
  - Indirect signs (phasicity, dynamic maneuvers)

- Under the inguinal ligament +++

- B-flow
  - No aliasing => stenosis, multiple channels, webs
  - Valves

**Phlebography**

- Anatomy
  - Face + oblique
  - % stenosis?
  - Extension?
  - Collateral pathways+++

- +/- hemodynamic : no criteria

**Anatomic explorations**

- Anatomic lesions
  - % stenosis, length
  - Inflow, outflow
  - Collateral pathways

- Non invasive : DS, CTV, MRV
- Invasive : phlebography, IVUS

**IVUS**

- Anatomic evaluation only
  - Excellent definition
  - Precise => % stenosis, lesion length

May Thurner S  Post DVT
Conclusion

- Anatomic evaluation:
  - Lower limb: DS
  - Abdominopelvic: IVUS

- Hemodynamic evaluation: need improvement
  - DS
  - Lack of precise criteria