Preliminary results of preoperative diagnostics and endovascular treatment for CCSVI

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Poland
• Testing for CCSVI with color Doppler sonography – since May 2009
• Testing for CCSVI with MRV – since October 2009
• Endovascular procedures for CCSVI – since October 2009
color Doppler sonography

- about 250 MS patients examined
- venous abnormalities found in ~95%
- most common finding: pathologic valves or membranes in the internal jugular veins (IJV)
- majority of stenoses in the middle part of IJV seemed to be secondary to pathologic valves or to result from external compression
MR venography

• about 100 MS patients examined
• most common finding:
  a) stenoses in middle and upper part of IJV
  b) signs of impaired outflow on time-of-flight imaging
• pathologic valves and membranes could be visualized only in few patients
signs of impaired outflow on TOF imaging
pathologic valves and membranes not always visible (only indirect signs: a collapse of the vein)
Endovascular treatment

- 90 patients operated on
- **Intraoperative venography** as the key test for decision making
- Preoperative **Doppler** and **MRV** – as a help to evaluate venous anatomy and to reveal where the problem might be situated
- **Stenting only if absolutely needed** (ballooning unsuccessful) and if **safe** (not for areas with changeable diameter during Valsalva)
Endovascular treatment – procedures for IJV

- No obvious pathology found – 3 patients (3%)
- Only balloon angioplasty – 57 patients (63%) (31 patients: one IJV; 26 patients: both IJVs)
- Only stenting – 19 patients (21%) (18 patients: one IJV; 1 patient: both IJVs)
- Stenting in one IJV and balloon angioplasty of the other vein – 12 patients (13%)
Endovascular treatment – additional procedures

- Stenting or angioplasty of azygous vein – 6 patients (7%)
- Balloon angioplasty of brachiocephalic vein – 2 patients (2%)
- Redo surgeries – 3 patients
Balloon angioplasty for membrane in brachiocephalic vein
Stenting for stenosis of the azygous vein
Endovascular treatment – complications

- 1 minor bleeding from puncture in the goin, 2 days postop
- 1 gastrointestinal bleeding a week postop (clopidogrel?)
- transient headaches following procedure in some patients
- No major pain
- No injury to the nerves
- No problems related to stents
Endovascular treatment – failures of the treatment

• Unsuccessful stenting for hypoplastic upper IJV - 1 patient
• Unsuccessful balloon angioplasty for stenosis in the middle part of IJV (probably due to external compression) – 3 patients
• Minor success of balloon angioplasty for membranes in the brachiocephalic veins - 2 patients
stenosis in area of the valve

stenosis due to compression from outside

stenosis in area of the valve
Stenting for stenosis in the upper IJV
RESULTS – some preliminary impressions

• Follow-ups available only for some patients; however, most of patients reported improvements
• In general: the less disabled patients was, the bigger improvement
• No improvement or recurrence of symptoms may indicate restenosis
Some interesting findings

- Within one hour postop patients’ hands became warm (if cold before treatment) and faces pink (if pale before)
- Bladder control improved within one day postop
- It is difficult to explain these findings in terms of improved nerve function; rather - it is more likely that a blood-released neurotransmitter may play a role (angiotensin ??)