Vascular intervention for multiple sclerosis

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Clinical question

In patients with multiple sclerosis (MS), is angioplasty of obstructed extracranial venous lesions safe and does it improve MS symptoms?

Evidence

In a cohort study, 65 MS patients with chronic cerebrospinal venous insufficiency (CCSVI) underwent angioplasty for obstructed azygous or internal jugular venous lesions.[1]

- Participants: mean age 41 years, 46% male, minimal to moderate disability (not in wheelchair), taking MS disease-modifying agents.
- Vascular outcomes: no serious operative or immediate postoperative complications.
  -Restenosis at 1 year was about 50% for internal jugular.
- Neurologic outcomes at 18 months, compared with baseline (no control or placebo group):
  -No benefit in primary or secondary progressive subtypes.
  -Significant improvements in relapsing-remitting MS subtype: fewer patients relapsing during 1-year period (50% vs 73%, $P=.0014$); fewer patients with lesions seen on magnetic resonance imaging (12% vs 50%, $P<.0001$); and improved MS functional composite and quality-of-life scores.
- All relapsing-remitting patients with patency after their procedures were relapse free.
- Concerns: single study site, not randomized, no control group, and unblinded.
  -Remission is a hallmark of relapsing-remitting MS: untreated patients can have reductions (even prolonged) in clinical symptoms[2,3] or lesions.[4] A control group and long-term follow-up are essential.

Context

- Hypothesis of CCSVI and MS: chronic insufficient cerebral venous drainage → cerebral iron deposits → engender the immune response underlying MS. Angioplasty improves cerebral blood outflow → decreases iron deposits → improves MS symptoms.[5]
- Many patients are attempting this unproven procedure, and complications are being observed.[6]
- Multiple subsequent studies question the relationship between CCSVI and MS.[7-10]

Bottom line

The initial study seems promising, but it is critically flawed for assessing benefit, and subsequent studies are not supportive. It is premature to recommend endovascular angioplasty for MS. The fluctuating nature of relapsing-remitting MS absolutely necessitates a long-term, multicentre, blinded RCT to determine if endovascular angioplasty is beneficial.

Implementation

Remind patients that all provider organizations and patient advocacy groups consider vascular surgery for MS purely experimental.[11] While awaiting results of ongoing research, FPs can help manage MS symptoms, including depression.[12] Decision aids can help patients weigh risks and benefits and make informed decisions.[13,14] For those considering approved treatments, 2 decision aids exist.[15,16] For those pursuing this experimental treatment, some information is available from the MS Society of Canada.[17]

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