Hybrid open and endovascular common carotid artery revascularization after failed attempted retrograde recanalization

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Disclosure

Speaker name: James L. Ebaugh MD

I have the following potential conflicts of interest to report:

- Consulting
- Employment in industry
- Stockholder of a healthcare company
- Owner of a healthcare company
- Other: Site co-investigator in multicenter RCT comparing best endovascular vs. surgical therapy in critical limb ischemia (BEST trial)

I do not have any potential conflict of interest
Significant changes on surveillance carotid duplex

Asymptomatic 72 year old woman

Changes noted:

• 11 months earlier: normal CCA flow and size (6mm)
  Now: 3mm lumen

• Minimal bidirectional flow in left CCA

• Retrograde ECA, antegrade ICA flow
Left common carotid artery

- Duplex 11 months prior
- Current duplex
Preoperative CTA

- Severe CCA stenosis vs. CTO
- No visible infundibulum in arch
- ECA filled by collaterals
- R vertebral artery occluded

- Higher than average annual risk of CVA\textsuperscript{1,2}

Recommendation:
Open retrograde CCA angioplasty/stent, then CEA

Type of reconstruction | 30-day stroke/death
1. Transthoracic       | 16%
2. Cervical            | 4.3%
3. Retrograde angioplasty/stent, then CEA | 1.5%


Retrograde CCA recanalization unsuccessful

- Focal CTO of CCA seen at level of aortic arch
- Attempts to cross with .035 and .018 wires/catheters unsuccessful
- Dissection plane entered
- Recanalization attempts abandoned
1. CCA transposed to left subclavian artery
2. Stump pressure < 40mmHg, therefore shunt required
3. Javid shunt inserted, tapers 17-10Fr (5.7mm proximal end into CCA)
4. CEA performed without a patch as plaque did not extend past mid bulb

Completion intraoperative duplex

Mid CCA dissection
- not flow limiting, so not treated

Patient awoke neurologically intact
9 months post-procedure

- Duplex and CTA show wide patency of reconstruction
- Dissection completely healed
Open retrograde CCA Intervention: Considerations

- Dissections in up to 13%
- Know surgical alternatives to avoid aborting procedure
- Subclavian artery needs to be suitable donor for cervical reconstruction (bypass or transposition)

Thank you!
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