Endovascular ICA occlusion after intracranial thrombus removal in patients with tandem occlusion (intracranial and cervical) to prevent further intracranial embolism: advantages precautions and limitation

Emmanuel Houdart

Department of neuroradiology, hôpital Lariboisière, Paris, France

Disclosures

• None

Thrombectomy has been the breakthrough in stroke treatment

• For large intracranial occlusions

• Supported by 5 positive RCT

Stroke is due to intracranial arterial occlusion

• However, in few instances, we face tandem occlusion i.e. occlusion of cervical and intracranial arteries

• Cervical occlusion complicated the technique of thrombectomy and asked some question about its management

Tandem occlusion

• Intracranial thrombectomy remains the first objective, however, what to do with the cervical occlusion that is the cause of the intracranial embolism and can re-embolize?

• 30 cases of tandem occlusion in the Lariboisière series
  – 17 ICA dissections
  – 13 ICA atherosclerotic plaques

48 yo man

• Cervical ICA occlusion
• Did 2 strokes in 24 hours, the first one having recovered after only IV lysis

• The second required thrombectomy
Thrombectomy was achieved getting through the cervical occlusion

Control angiography using a microcatheter re navigated through the cervical occlusion

And now, what to do?

• Two embolisms, the second one under aspirin treatment
• Long occluded segment of the cervical ICA
• Long stenting would require use of strong antiplatelet regimen with the risk of hemorrhagic transformation of the cerebral infarct

Injection of the left VA shows a perfect supply of the right MCA

• The conditions to occlude are 1° having a simultaneous venous phlebogram between the supplying axis and the occluded one and 2° no associated disease on the other axis

Because of the excellent Willis, ICA occlusion was decided

Final control angiography showing the perfect filling of right MCA through both Pcom and A com

• Using controllable detachable coils
• Implanted above the dissection in order to prevent further embolism
• 200 cm length of coils
54 yo woman with tandem right MCA-ICA occlusion on a cervical dissection

The objective was to recanlayze the MCA getting through the cervical occlusion

Thrombectomy

Stenting of the ICA seemed uncertain and futile because of the good Willis and medical treatment alone semmed hazardous

ICA occlusion was decided

Control MRI at 5 months
Advantages of this technique

• In our experience (12 cases), ICA occlusion was always protective against further embolism: technique was efficient and safe

• Avoids use of anti-thrombotic and therefore reduces the risk of hemorrhagic transformation

Drawbacks

• Definitive occlusion of the ICA

• However, in ICA dissection with complete occlusion, the likely to recanalize is almost none

• Things are more debatable in atherosclerosis especially when the opposite ICA is affected

69 yo woman with atherosclerotic tandem occlusion

First angioplasty of the bulb to give access to the siphon and MCA

Thrombectomy of M1 and now?

The right ICA (controlateral) was tightly stenosed without possibility of refilling the left side
No stenting was performed

- This would have required a too strong antiplatelet regimen
- Patient was left under aspirin and sent to CEA one week later

To conclude

- The occlusion of the ICA is a well known technique in INR and is used for decades in the treatment of giant aneurysms of the siphon
- This is rarely performed in stroke but is helpful in selected cases of tandem occlusion