

Dual Revascularization of both M2 Divisions with IMax-Radial Artery and STA Bypass for Giant Fusiform Aneurysm

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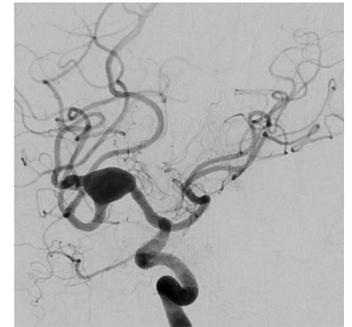
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Clinical Background

- Giant fusiform MCA bifurcation aneurysm incorporating both M2 divisions
- Vessel-preserving reconstruction not feasible
- High risk of ischemia with parent vessel sacrifice
- Revascularization required to maintain distal MCA perfusion

Surgical Strategy / Rationale

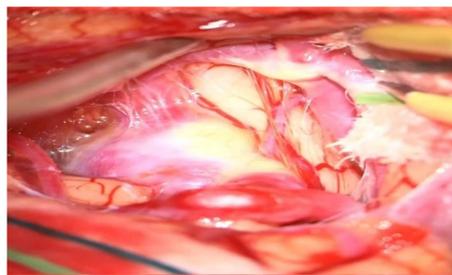
- Need for dual revascularization of both M2 trunks
- Donor selection guided by recipient vessel caliber and flow demand
- IMax-radial artery graft selected for dominant M2 trunk
- STA-M2 bypass used for second M2 division with lower flow requirements
- Single suitable STA branch available



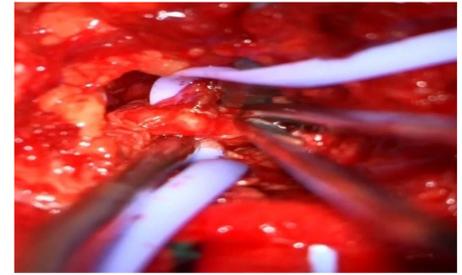
Key Operative Steps



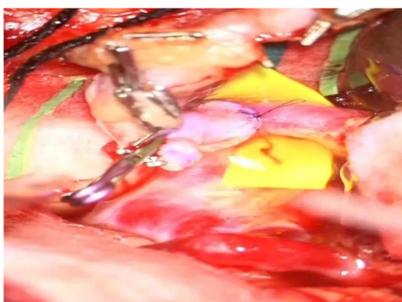
STA frontal branch is harvested



Extensive sylvian fissure dissection and exposure of both M2 divisions



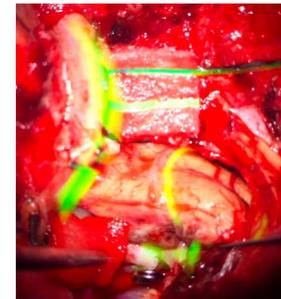
Imax exposed and dissected in the infratemporal fossa



Radial Artery-M2_{inf} anastomosis



Radial Artery-IMax anastomosis



Robust flow through the IMax-RA-M2_{inf} Bypass



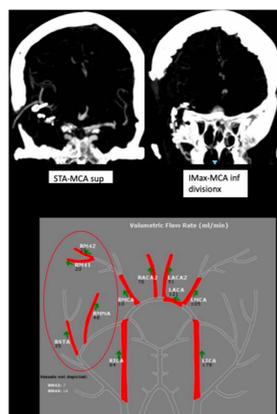
STA-M2_{sup} bypass to second division



Robust flow through the STA-M2_{sup} Bypass

Outcome

- Robust flow through both bypasses confirmed by Doppler and ICG
- Distal MCA perfusion preserved
- Near-complete aneurysm thrombosis on postoperative imaging
- No new neurological deficits



Take-Home Points

- Complex fusiform MCA aneurysms involving both M2 divisions often require revascularization
- Flow- and caliber-matched donor selection optimizes physiologic revascularization
- Combined IMax-radial artery and STA bypass enables durable distal perfusion
- Dual revascularization allows safe aneurysm exclusion when reconstruction is not feasible

Contact

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