Surgical Management of Complex Intracranial Aneurysms

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John R. Davis Chair Fund supports Henry Ford Neurovascular Database

Discuss continued role of microsurgery in management of aneurysms

Techniques used for treating complex aneurysms

Emphasize the role of team approach in the management of complex aneurysms

Disclosures

Objectives
Management of Intracranial Aneurysms

Aneurysms Not Amenable to Endovascular Treatment

- Young patient
- Large Neck – to – Dome Ratio
- Ruptured Aneurysms requiring Stents
- Parent or Branch vessel sacrifice unavoidable
- Multiple prior endovascular treatments
- Distal aneurysms
- Mass effect

Techniques for Complex Aneurysm Obliteration

- Clipping
  - Tandem
  - Reconstruction
  - Stacking
- Bypass & Trapping
Principles of Complex Aneurysm Obliteration

- Patient positioning and surgical approach
- Adequate visualization of anatomy
- Proximal and Distal control
- Addressing the neck of the aneurysm first
- Adequate visualization of the blades of the clip
- Using surgical adjuncts
  - Doppler flow probe
  - Indocyanine angiography
- Be prepared for possible bypass and trapping

Clipping of Carotid-Ophthalmic Aneurysm Causing Mass Effect

Clipping of SCA Aneurysm from Pterional Approach
Stage 1: Clipping of Carotid Terminus aneurysm & STA–MCA Bypass
Stage 2: Carotid Occlusion
Partial Coil Occlusion of Cavernous – Carotid Aneurysm. Ophthalmic Aneurysm being followed

Aneurysm Treated with STA–MCA Bypass & Occlusion

Mirror / Bilateral Aneurysms

Stage 1: Clipping of Carotid Terminus aneurysm & STA–MCA Bypass
Stage 2: Carotid Occlusion
Partial Coil Occlusion of Cavernous – Carotid Aneurysm. Ophthalmic Aneurysm being followed

Fusiform MCA Aneurysm
Microsurgical treatment is applicable to both simple and very complex aneurysms. Microsurgical and Endovascular treatments should be complimentary rather than competitive. Modern management of aneurysms requires a neurovascular team with expertise in both treatment modalities. Each patient needs individual evaluation and selection of therapy.
Acknowledgements

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- We thank our patients and their families for placing their lives and trust in our hands and for providing us the opportunity to feel pride in doing what we do everyday