MLFM Bare Stents Are An Effective Treatment For Some Aortic Dissections: They Preserve Branch Flow And Promote Aortic Remodeling: What Is The Evidence

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Conflict of Interest
Prof. Karmeli Research Grant Cardiatis

The Challenge
Dissection - A Spiral with Multiple Reentries

Bernoulli's Principle

The Swiss Physicist Daniel Bernoulli was interested in how the velocity changes as the fluid moves through a pipe of different areas. He especially wanted to incorporate pressure changes into the idea and his principle states: "If the velocity of a fluid increases, the pressure decreases and vice versa."
The Concept
Aneurysm w/o branches in vivo (PI study)

Endothelial cells stop at the edge of branches

Animal study (Dr Bonneau, INRA & NAMSA, France)

MFM promotes Reendotheliazation?

Seeding with Endothelial Progenitor Cells

Guidelines

False Lumen AA after Type B Dissection

Contraindication:
Branchecarising from False Lumen:
- 55 % Pressure drop in visceral arteries when supplied by false lumen

Lumbar and Intercostal Perfusion preserved avoiding Paraplegia.
Contra indication - Type A Dissection ??

Type A Dissection Clamp related after CABG

When there is no time for Chimneys

78 year old female Patient Acute Ischemia left leg
True Lumen Compression

80% True Lumen Reduction

Re Expansion True Lumen

Ball Out

Acute Type B Dissection: Persistent Symptoms after 1 week. 74 year old female patient
Placement of Lunderquist Wire and Angiography

Retrograde Type A Dissection - False Lumen
True Lumen: Occlusion of all Suprarenal Vessels

Transbrachial Approach: Salvage with MFM Stents as a Bridging Procedure for Aortic arch Replacement

Cardiac Surgery University Essen
Pretreatment of Stenosis

Stability in the Arch

Penetrating ulcer

Follow-Up at 7 Months

Intercostal Patency – 3D Reconstruction

Follow-Up at 7 Months

Intercostal/Lumbar Patency – 3D Reconstruction

Follow-Up at 3 Days

Intercostal/Lumbar Patency – 3D Reconstruction
Conclusion: The effects of Flow Modulation
in Acute Dissections

- Aortic Remodeling
- False Lumen Reduction
- Preservation of Branches
- Avoiding Paraplegia