Value of Multiple Short Stents For Treating Fempop Long Lesions: Better Than a Full Metal Jacket? The Locomotive Trial

Faculty Disclosure

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For the 12 months preceding this presentation, I disclose the following types of financial relationships:

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12-month Restenosis vs. Lesion Length: Data from Randomized Trials

Endovascular Treatment of SFA-ISR

How to best treat?

- How to approach ISR?
  1. POBA
  2. Cutting balloon
  3. Atherectomy
    1. Laser
    2. Silverhawk
    3. Pathway
  4. DCB
  5. DES
  6. Endoprosthesis
  7. Bypass-Surgery

Every Aspect of Stent Design and Placement Has Some Association with Restenosis

- Mesh configuration
- Chronic outward force (stent oversizing)
- Stent material (nitinol>elgiloy>stainless steel)
- Strut thickness (coronaries)
- Stent length
- Stent overlap

Schillinger Euro-PCR 2008
Limitations of Stents

#### Stent Fracture

- **Type 1**
- **Type 2**
- **Type 3**
- **Type 4**

Latest Generation Devices for SFA Interventions

**Dedicated (Biometric?) Stents**

- GORE® TIGRIS Vascular Stent
- Dual Component Stent Design

**Supera Vascular Stent**

- Interwoven Nitinol Design

Unique BioMimics 3D design:
- SHORT + LONG connectors
- SPIRAL configuration
BioMimics
Proof of concept: Cadaver
Helical curvature of biomimetic stent accommodates femoropopliteal shortening in leg flexion

Biocompatible stent not approved for use in the US

VascuFlex® Multi-LOC
- Multiple Stent Delivery System (MDS)
- 6 individual stents on top of one delivery system:
  - Stent diameter: 5,6 mm
  - Stent length: 13 mm (6 / system)
  - Delivery system: 6F-system (0.035" guide wire)
  - Shaft lengths: 80 cm / 130 cm
- Indication:
  - SFA and popliteal artery (p1-p3 segment)

Angiographic Characterization of Dissections: NHLBI Modification
- GOAL:
  - Provide anatomic result of stent
  - Minimize injury – Minimize hyperplasia
  - Maintain physiologic vessel compliance
  - Operator control
    - Placement
    - Number of tacks
    - Timing
  - Maintain options for future reintervention

“Tacking” – A new modality
- Right SFA occlusion
- Predilatation 5/300mm PTA
- Right SFA after DCB
- 6 mm MultiLoc-stents
- Final result
Conclusion

- Long distant stent implantation is associated with
  - Reduced patency (Hong et al.)
  - Increased fracture rate
  - Impairment of vessel physiology and anatomy during leg motion
- Multiple short stents might overcome the limitations of a full metal jacket
- Prospective studies are on the way (LOCOMOTIVE, TOBA series)