The Value of Hybrid Procedures through the Common Femoral Artery Open Access

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Disclosure

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I do not have any potential conflict of interest
Multilevel peripheral arterial disease involving the CFA

- debilitating condition for patients causing CLI
- challenging for management
- gold standard: open surgical reconstruction with bypass
  - Pros: excellent durability
  - Cons:
    - require a laparotomy/flank incision/aortic cross-clamping
    - associated with increased morbidity
    - need of extensive venous graft material
Hybrid Revascularization

- alternative treatment
- combines:
  - femoral endarterectomy and patch arterioplasty for occlusive disease of the CFA
    - Standard of practice for more than 50 years
  - endovascular treatment of the inflow/outflow lesions
    - Rapid evolution of the techniques and materials allow the treatment of more extensive and severe iliac lesions
    - The first line treatment for TASC C and D lesions with good clinical success and long-term patency
Hybrid Revascularization
Patient Selection

• Excellent pre-operative planning
  • Patient's factors (Stage of disease)
  • Disease patterns (multilevel PAOD, CFA)
  • Stratification of the cardio-vascular risk

• Pre-procedural investigations:
  • Duplex scanning
  • CTA/MRA
Hybrid Revascularization-Technique

- Dedicated hybrid operating theater with a fixed imaging system
- General anesthesia, Aspirin, Antibiotics, UFH (ACT 200-300 sec)
- Surgical exposure of vessels
- CFA Endarterectomy (CFE) and Patch angioplasty
- Antegrade/retrograde access to the inflow/outflow lesion
Hybrid Revascularization
Common Procedures

170 Pts. 01/2009 – 08/2014

- 87 Pts (52%)
- 58 Pts (33%)
- 25 Pts (15%)

- inflow+CFE
- outflow+CFE
- inflow+CFE +outflow

Bar chart showing the number of patients from 2009 to 2014.
Hybrid Revascularization Indication for Treatment

- 29% PAOD IV
- 14% PAOD III
- 57% PAOD IIB

- 14% TASC A/B
- 86% TASC C/D

- 36% AFC Stenosis
- 64% AFC occlusion
Inflow Angioplasty + CFE

- 59 y/o male Pt.
- CLI on the left side (non-healing calf ulcer), PAOD Rutherford 3 on the right side
- Multiple cardio-vascular risk factors

- Flush aortic occlusion
- Occlusion of both CIA, EIA CFA and SFA
Inflow Angioplasty + CFE

Antegrade brachial access (0.035”Terumo Stiff wire/multipurpose catheter)

Retrograde approach via CFA and crossing the occlusion (double Balloon Technique)

Stenting of the aorta and iliac arteries with 4 covered stents (Advanta™ V12 9/59mm)
Inflow Angioplasty + CFE

Final Result
CFE + Outflow Angioplasty

- 53 y/o male Pt.
- PAOD Rutherford 4 on the right side
- Multiple cardio-vascular risk factors

High Grade Stenosis of the CFA and Chronic SFA Occlusion
CFE + Outflow Angioplasty

Puncture of the patch in the CFA after CFA-TEA and antegrade recanalization to the right SFA

Final Result
Inflow Angioplasty + CFE + Outflow Angioplasty

- 62 y/o male Pt.
- PAOD Rutherford 4 on the right side
- Occlusion of the ilio-popliteal Bypass on the right side

Chronic Occlusion of right EIA, CFA, SFA
Inflow Angioplasty+
CFE + Outflow Angioplasty

Cross-over access to the right
EIA(0.035”Terumo Stiff wire/ multipurpose
catheter) after CFE and pre-dilation

Final Result
Hybrid Revascularization Results – Procedural Data

- General An: 95%
- Local An: 5%

- PTA alone: 4%
- AIE Stent: 41%
- AIC Stent: 9%
- AIE+AIC Stent: 46%
Hybrid Revascularization – Results

- Technical success: 100%
- ABI improved from 0.36 to 0.79
- ICU Stay less than 24 hours: 80%
- 30-Days Mortality: 6.25%
- Medical complications: 4.6%
- Limb Ischemia/Thrombosis: 2.8%
- Early Re-Interventions: 2.8%
- Lymph Leak no Operation: 5.17%
Hybrid Revascularization

- Minimal Invasive
- Allows prompt limb revascularization which is essential when treating a CLI Patient
- Reduce length of ICU and hospital stay
- Morbidity and mortality data equal or better than open bypass procedure
- Careful patient selection and detailed preoperative planning are essential to achieve excellent results
Thank you!

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