First Choice Treatment of PAOD of the Common Femoral Artery

PRO SURGERY

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University Hospital Heidelberg, Germany
Disclosures

• Consultant
  – Endologix, Endomax, Gore, Medtronic

• Research Grant /research support
  – Gore, Maquet, Medtronic, Siemens

• Advisory Board
  – Endologix, Gore, Medtronic, Siemens

• Paid speaker
  – Endologix, Gore, Maquet, Medtronic, Siemens

• Major stakeholder
  – none

No disclosures related to the following presentation
Isolated CFA – PAOD is rare!
Endarterectomy of CFA – First Choice in 2020!
Here are 10 convincing reasons, why ...
Remember - You treat mostly claudicants!

**Treatment Goals:**
- Walking distance
- Individual life quality
- Long term durability
- Low / better no reinterventions
# 1 – Guidelines recommend Surgery

2017 ESC Guidelines on the Diagnosis and Treatment of Peripheral Arterial Diseases, in collaboration with the European Society for Vascular Surgery (ESVS)

Document covering atherosclerotic disease of extracranial carotid and vertebral, mesenteric, renal, upper and lower extremity arteries

Endorsed by: the European Stroke Organization (ESO)

The Task Force for the Diagnosis and Treatment of Peripheral Arterial Diseases of the European Society of Cardiology (ESC) and of the European Society for Vascular Surgery (ESVS)

Authors/Task Force Members: Victor Aboyans* (ESC Chairperson) (France), Jean-Baptiste Ricco* (Co-Chairperson) (France), Marie-Louise E. L. Bartelink (The Netherlands), Martin Björck† (Sweden), Marianne Brodmann (Austria), Tina Cohnert† (Austria), Jean-Philippe Collet (France), Martin Czerny (Germany),
# 2 – CFA is hostile for Stenting

Arterial motion is dynamic and varying continuously causing local biomechanical forces > fracture & occlusion
# 2 – Local Biomechanical Forces in the CFA

How much time do people spend on sitting each day?

- Less than 2 hours: 0%
- 2-4 hours: 10%
- 4-6 hours: 30%
- 6-8 hours: 40%
- More than 8 hours: 20%

89% sit for more than 6 hours a day.
Further Limitations of primary CFA Stenting

- Restosis
- Reintervention
- Transbrachial access > 10%
- Stroke
- Access complications due to closure devices up to 33%
# 3 – Endo - not standardized at all

**Acute and Medium-Term Outcomes of Endovascular Therapy of Obstructive Disease of Diverse Etiology of the Common Femoral Artery**

Philip B. Dattilo, MD, Thomas T. Tsai, MD, MSc, R. Kevin Rogers, MD, MSc, and Ivan P. Casserly, MB, BCh

*Catheterization and Cardiovascular Interventions* 81:1013–1022 (2013)

<table>
<thead>
<tr>
<th>Revascularization strategies</th>
<th>Count (Percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PTA</td>
<td>27 (87)</td>
</tr>
<tr>
<td>Stand-alone PTA</td>
<td>3 (10)</td>
</tr>
<tr>
<td>Debulking</td>
<td>22 (71)</td>
</tr>
<tr>
<td>Silverhawk (ev3)</td>
<td>16 (52)</td>
</tr>
<tr>
<td>Diamondback (CSI)</td>
<td>5 (16)</td>
</tr>
<tr>
<td>Jetstream (Pathway)</td>
<td>3 (10)</td>
</tr>
<tr>
<td>Laser (Spectranetics)</td>
<td>4 (13)</td>
</tr>
<tr>
<td>Stent</td>
<td>1 (3)</td>
</tr>
</tbody>
</table>

**Adjunctive tools**

- Frontrunner catheter: 3 (10)
- Embolic protection device: 9 (29)

- Contrast used (ml) (mean ± SD): 261 ± 114
- Fluoroscopy time (min) (mean ± SD): 42 ± 27
- Mean number procedures per patient (range): 1.03 (1–2)
# 4 Literature for Endovascular TX is misinterpreted TECCO Trial

- RCT n = 117 pat.
- Mean Follow up 24 mths.
- Primary outcome: combined 30 day – mortality and morbidity

CONCLUSIONS In patients with de novo atherosclerotic lesions of the CFA, the perioperative morbidity and mortality rate was significantly lower among patients who underwent endovascular therapy by stenting compared with surgery, whereas clinical, morphological, and hemodynamic outcomes were comparable at mid-term. (Traitement des Lésions
Limitations of TECCO Trial

- Wrong primary endpoint: combined 30 d morbidity & mortality
- Hospitalization as an endpoint
- Low pat. numbers
- 33 % hybrid procedures in surgical arm
- Exclusion criteria: restenois, occlusion (no problem for surgery)
- Reinterventions were not monitored
**RCT (TECCO Trial)**

### Table 3: Primary Outcome and Components of the Primary Endpoint, According to Treatment Group

<table>
<thead>
<tr>
<th></th>
<th>Intent-to-Treat Analysis</th>
<th>Per Protocol Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Surgery (n = 61)</td>
<td>Stenting (n = 56)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General complications</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Death</td>
<td>0 (0)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Stroke</td>
<td>0 (0)</td>
<td>1 (1.8)</td>
</tr>
<tr>
<td>Myocardial infarction</td>
<td>0 (0)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Major amputation</td>
<td>0 (0)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Local complications</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hematoma</td>
<td>3 (5)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Thrombosis</td>
<td>0 (0)</td>
<td>1 (1.8)</td>
</tr>
<tr>
<td>Lymphorrhrea</td>
<td>2 (3.2)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Delayed wound healing</td>
<td>10 (16.4)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>False aneurysm</td>
<td>0 (0)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Arteriovenous fistula</td>
<td>0 (0)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Paresthesia</td>
<td>4 (6.5)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Local infection</td>
<td>3 (5)</td>
<td>1 (1.8)</td>
</tr>
<tr>
<td>Vascular perforation</td>
<td>0 (0)</td>
<td>1 (1.8)</td>
</tr>
<tr>
<td>Primary endpoint</td>
<td>16 (26)</td>
<td>7 (12.5)†</td>
</tr>
</tbody>
</table>

**Stenting group:**

- Random but not treated 16%
- Primary conversion 5%
- General anaesthesia 16%

The difference in primary outcome events between the 2 groups was driven by a trend toward an increase in local complications in the surgery group, especially delayed wound healing. The mean length of hospital stays was 3.2 ± 2.9 days for patients in the...
# 5 No Longterm Results for Endovascular Therapy

<table>
<thead>
<tr>
<th>Author</th>
<th>Journal Year</th>
<th>Pat (n)</th>
<th>Mean FU (mths.)</th>
<th>Freedom from restenosis %</th>
<th>Improv. walking distance</th>
<th>Mortality at 2yrs (%)</th>
<th>Amputation In %</th>
<th>Reintervention In %</th>
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<tbody>
<tr>
<td>Baumann</td>
<td>JVS 2011</td>
<td>98</td>
<td>19</td>
<td>73</td>
<td>81%</td>
<td>34</td>
<td>6</td>
<td>NA</td>
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<td>Azema</td>
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<td>24</td>
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<td>4</td>
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<td>Mean</td>
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<td>22</td>
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<td>83%</td>
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<td>3.2</td>
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# No Longterm Results for Endovascular Therapy but Surgery

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<tr>
<td>Wieker</td>
<td>JVS 2016</td>
<td>713</td>
<td>59</td>
<td>78 %</td>
<td>83 %</td>
<td>17</td>
<td>7.3</td>
<td>11</td>
</tr>
</tbody>
</table>
# 6 Existing excellent longterm results for surgery

Results of common femoral artery thromboendarterectomy evaluation of a traditional surgical management in the endovascular era

Carola Marie Wicker, MD, \(^a\) Eva Schöenefeld, MD, \(^b, c\) Nani Osada, DRM, \(^b, c\) Christina Lührs, MD, \(^b, c\) Roland Beneking, MD, \(^b, c\) Giovanni Torsello, MD, \(^b, c\) and Dittmar Böckler, MD, \(^a\) *Heidelberg and Münster, Germany*  

- Retrospective 2 center study
- \(n = 713\) vessels in 655 pat.
- Including teaching procedures
- 221 CLI, 434 claudicants
- 7 year Follow up
7 years results for CFA Surgery

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Primary Patency

Secondary Patency

CLI vs. Claudicant

79.5% at 7 yrs.

89.1% at 7 yrs.

(76.3% vs 79.4%; \( P = .20 \))
Endovascular Repair of Common Femoral Artery and Concomitant Arterial Lesions


Common Femoral Artery Stenting

Figure 1  Concomitant femoral artery occlusive disease classification. 1A: Type I lesion, 1B: Type II lesion; 1C: Type I; 1D: Type II
# 7 – CFA-Eligibility for **Surgical** Therapy

*Endovascular Repair of Common Femoral Artery and Concomitant Arterial Lesions*


**Common Femoral Artery Stenting**

**Figure 1** Common femoral artery occlusive disease classification. 1A: Type I lesion, 1B: Type II lesion; 1C: Type III lesion, 1D: Type IV lesion.
# 8 – CFA = Important Access Vessel

Never close your door, you don't know when you'll return
Early Surgical Outcome After Failed Primary Stenting for Lower Limb Occlusive Disease

Dittmar Böckler, MD; Peter Blaurock, MD; Ulrich Mannsman, MD, PhD; Matthias Schwarzbach, MD, PhD; Robert Seelos, MD, PhD; Hardy Schumacher, MD, PhD; and Jens-Rainer Allenberg, MD, PhD

Departments of 1Vascular Surgery and 2Biometry and Informatics, Ruprecht-Karls University Heidelberg, Germany. 3Department of General, Thoracic, and Vascular Surgery, Klinikum Darmstadt, Germany.

TABLE
Outcome of Primary Bypass Surgery in Critical Limb Ischemia Compared to Bypass Grafting After Failed Stenting for CLI

<table>
<thead>
<tr>
<th></th>
<th>Bypass Surgery After Failed Stenting (n=18*)</th>
<th>Primary Bypass Surgery (n=63)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean follow-up, mo</td>
<td>~8</td>
<td>~20</td>
</tr>
<tr>
<td>Primary patency rates, %, 30-d/6-mo/12-mo</td>
<td>47/44/33</td>
<td>98/96/88</td>
</tr>
<tr>
<td>Complication rate, %</td>
<td>40</td>
<td>29</td>
</tr>
<tr>
<td>Bypass failure rate, %</td>
<td>50</td>
<td>17</td>
</tr>
<tr>
<td>Amputation rate, %</td>
<td>44</td>
<td>6</td>
</tr>
<tr>
<td>Mortality at 30 days, %  (procedure-related)</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

* Two patients lost to follow-up.
# 10 Endo may also cause complications

Perforation and false aneurysm after arterectomy
Summary

My arguments pro surgery are:

• Surgery shows excellent longterm outcome
• Evidence for endovascular Tx is still low
• CFA is not ideal for “endo”, at least not for stenting
• Endo is not eligible to all anatomical conditions, surgery is!
• Endo is complementary for selected patients (PTA post surgery
• Future RCT should choose the right longterm study endpoints
• Surgery is still first choice for CFA PAOD in 2020
First Choice Treatment of PAOD of the Common Femoral Artery—PRO SURGERY

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