What I Have Learned about Treating Popliteal Aneurysms

Since Peter Gloviscki and I Treated a Sitting US Vice President 10 years Ago

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Founder and Chief Medical Executive

Disclosures

- Advisory Boards:
  - Boston Scientific
  - WL Gore
  - Phillips Healthcare

September 25, 2005

'There are a number of ways to fix popliteal aneurysms, including standard surgical techniques. Mr. Cheney’s decision to undergo the minimally invasive procedure, a newer technique, surprised vascular surgeons.'

'One reason is that the Food and Drug Administration has not approved any stent graft for use in popliteal aneurysms.'

As a result, some independent experts said they would consider use of it experimental. Those sharing that view included Dr. R. Eugene Zierler, a vascular surgeon at the University of Washington; Dr. Peter G. Kalman, director of peripheral vascular surgery at Loyola University Medical Center in Maywood, Ill.; Dr. K. Craig Kent, chief of vascular surgery at New York Weill Cornell Medical Center; and Dr. Thomas R. Bernik, chief of endovascular surgery at St. Vincent’s Hospital Manhattan.'
Why is he using a cane?

Miami doctor helps fix Cheney’s knees
At the vice president’s annual physical in July, doctors detected bulges known as aneurysms in the arteries that run behind each knee.

by JACOB GOLDSTEIN
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A Miami doctor was part of the five-man team that recently fixed the arteries behind V.P. Cheney’s knees.

Published Studies with Viabahn

<table>
<thead>
<tr>
<th>Name</th>
<th>Limbs</th>
<th>1 year Primary Patency</th>
<th>2-6 year Primary Patency</th>
<th>Limb Salvage</th>
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<tr>
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<td>71.4% (6yr)</td>
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<tr>
<td>Tielliu</td>
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<td>80%</td>
<td>70% (5yr)</td>
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<tr>
<td>Rajasinghe</td>
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<td>93%</td>
<td>_</td>
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<tr>
<td>Curi</td>
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<td>100%</td>
<td>83% (2yr)</td>
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</tr>
<tr>
<td>Ghotbi</td>
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<td>_</td>
<td>85% (4yr)</td>
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</table>


Treatment Team

Popliteal aneurysm repair
ePTFE covered stent (Viabahn) adverse events

<table>
<thead>
<tr>
<th>Study</th>
<th>Limbs</th>
<th>Fracture</th>
<th>Occlusion</th>
<th>Migration</th>
<th>Endoleak</th>
<th>Embolization</th>
<th>Conversion</th>
<th>Amputation</th>
<th>Mortality</th>
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<td>14%</td>
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<tr>
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<td>25%</td>
<td>12%</td>
<td>8.2%</td>
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<tr>
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<td>6.7%</td>
<td>20%</td>
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<tr>
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<td>7.4%</td>
<td>0%</td>
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</table>


What I have Learned Since 2005?

• Endovascular Therapy for PAA is a complex procedure that requires intense pre-treatment planning, sizing, and patient selection
• Treating PAA is more complicated than treating PAD
• Data now supports use of EVT with the viabahn, despite the lack of FDA approval

Multicenter Experience: Italy (R Pulli, et al, EJVS 2013)

• Open Surgery: 178
• EVR: 134
• Populations were different: surgical group was more frequently symptomatic (64%), acute ischemia (23 v 6.5%), and runoff score <2 (39%-26%)
• Mean Followup: 30+ months
Multicenter Experience: Italy (R Pulli, et al, EJVS 2013)

- At 48 months
  - Primary patency OR: 63.5%, EVR 73.4%
  - Freedom from intervention: OR: 72%, EVR 75%
  - Limb preservation: OR: 89.7%, EVR 97%
- Conclusions: "...used in different patients with regard to clinical and anatomical characteristics. Both...are feasible and safe, providing satisfactory early and long term results..."

Evolving Treatment of Popliteal Artery Aneurysms
Stone, PA et al J Vasc Surgery 2013

- Retrospective Review, single Institution
- 88 PAA (72 Patients)
- EVR 24 patients
- OR 63 patients
- Amputation 1
- LOS: 3.9days(EVR vs 9.5 days)
  - (OR) P<.001
- Conclusion: Endovascular treatment of PAA provides similar short term patency to that of the...gold standard...surgical bypass, with shorter hospitalizations in both sx and asx patients...

Suitable Candidates for Endovascular Repair?

- Be a candidate for an interventional procedure
- At least 2 cm landing zone proximal and distal to the PAA
- Manageable differences in vessel diameter proximal and distal to the aneurysm
- Tolerate dual antiplatelet/anticoagulation treatment

Team Approach to Decision making

Conclusions

- Endovascular and Surgical Repair are effective methods of treatment of PAA
- Acute and mid term benefits of EVR=OR
- Long term durability may be slightly less with EVR
- Available Data supports endovascular first strategy in suitable candidates
What I have Learned Since 2005?

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- Treating PAA is more complicated than treating PAD.
- Data now supports use of EVT with the Viabahn, despite the lack of FDA approval.
- As always, therapy should be optimized on a per patient basis.

Miami Cardiac & Vascular Institute
BAPTIST HEALTH SOUTH FLORIDA