



# Aorto-iliakale Verschlusskrankheit

## Pro- Endovaskuläre Intervention

Norddeutsche Gefäßtage 12.6. – 13.6.2015

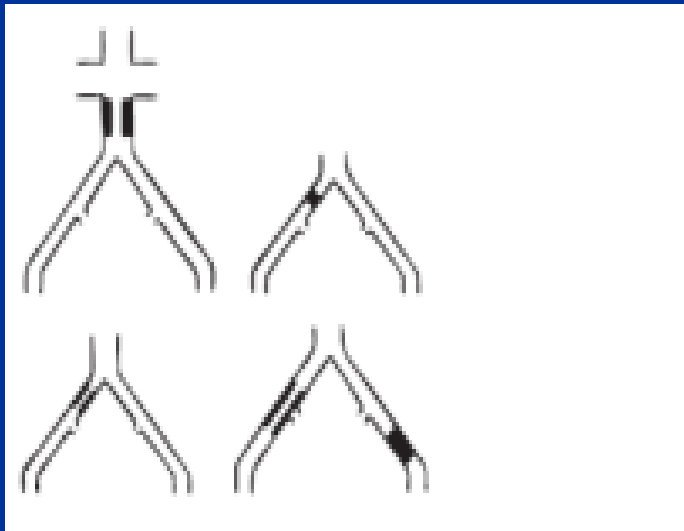
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Center for Interventional Angiology

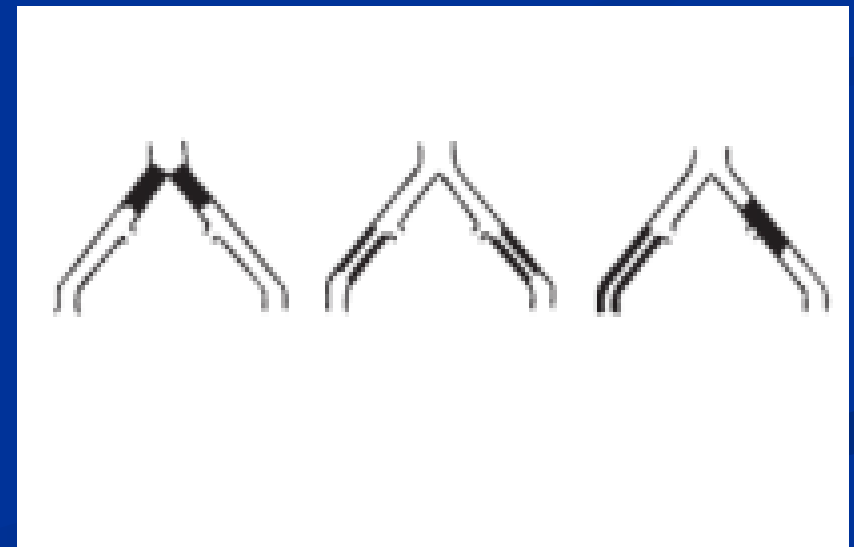
Medical Care Center Prof. Mathey, Prof. Schofer, Germany

# Endovascular Treatment (ET) for aorto-iliac artery Occlusion

- The TransAtlantic Inter-Society Consensus (TASC) II (2007) focus primarily on lesion morphology, defining longer aorto-iliac occlusions as TASC C or higher lesions **and** emphasize open surgery as the gold-standard!



TASC II C



TASC II D



# Endovascular Treatment (ET) for aorto-iliac artery Occlusion

- Open repair for aortoiliac disease has excellent patency rates of as high as 90% at 10 years for aortobifemoral grafting.

Outcomes of aortobifemoral / iliac bypass surgery

	<b>Patients #</b>	<b>Mortality peri-op</b>	<b>Primary patency 5y</b>	<b>Primary patency 10 y</b>
De Vries (1997)	1429	4,4%	88-91%	82-87%
Hertzer (2007)	224	1,2%	88%	81%
Chiesa (2009)	822	0,1%	97%	90%
Chiu (2010)	5738	4,1%	86%	-



# Endovascular Treatment (ET) for aorto-iliac artery Occlusion

- Cohorts underscored the high risk profile...
  - > 90% of these patients have a smoking history
  - > 65-87% have arterial hypertension
  
- High rates of co-morbidities in this patients
  - > coronary artery disease (30-60%)
  - > chronic obstructive pulmonary disease (13-20%)
  - > and chronic renal insufficiency (4-13%)

# Case

51 y, ♂

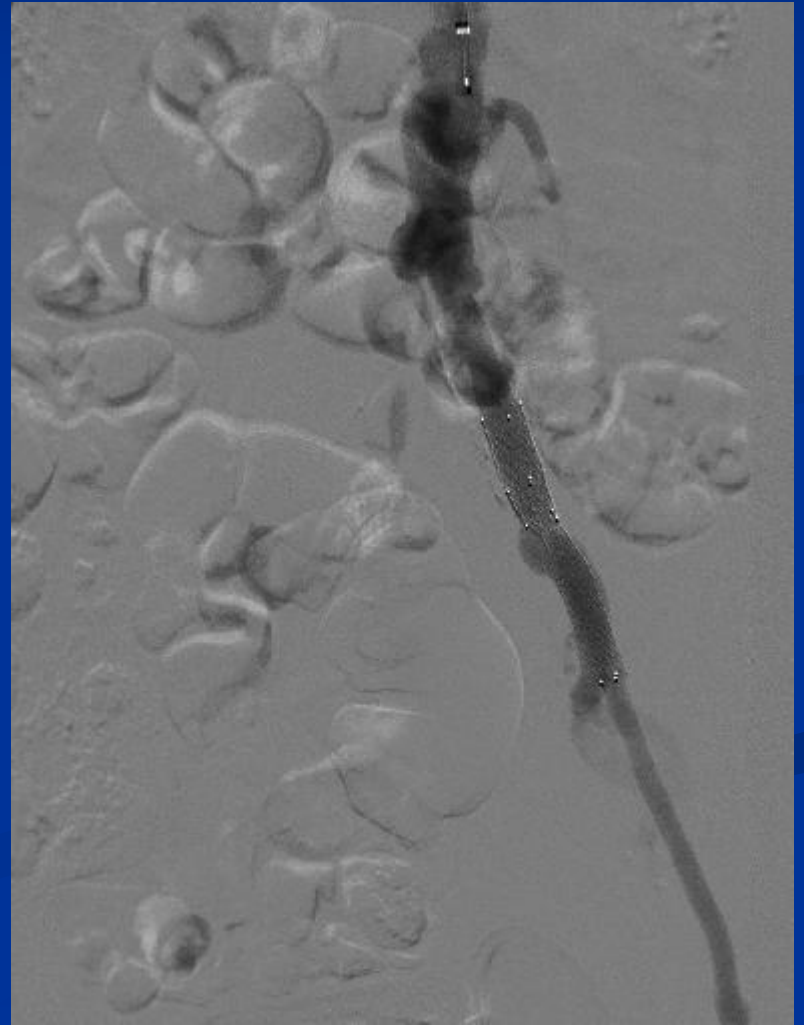
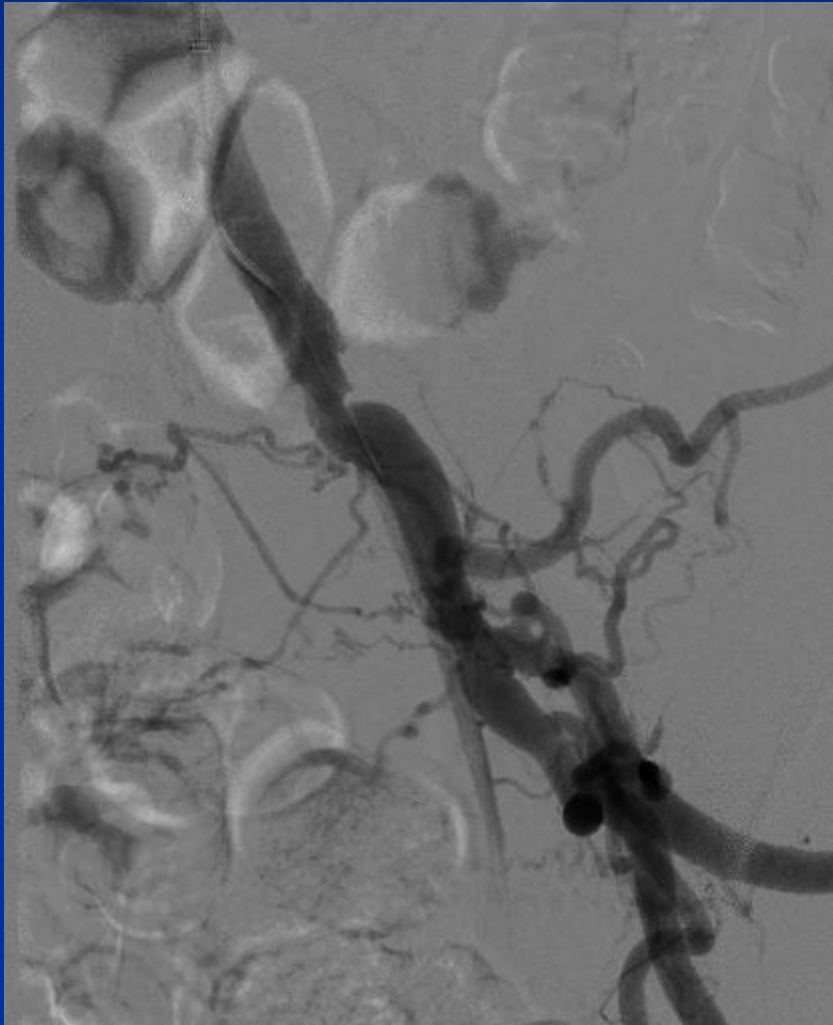
Current smoker, ca. 30 py  
Arterial hypertension

Claudicatio

-200 m right > left calves  
-ABI re 0,8 und li 0,75



Case  
48 y, ♂



Case  
51 y, ♂



# Time for a Change!

A





# Endovascular Treatment (ET) for aorto-iliac artery Occlusion



- The National Inpatient Sample report from 1996 to 2000 noted an **850% increase** in angioplasty and stenting for aortoiliac occlusive disease, with a parallel **15.5% decrease** in aortobifemoral grafting!

A

From the Society for Vascular Surgery

## The management of severe aortoiliac occlusive disease: Endovascular therapy rivals open reconstruction

Vikram S. Kashyap, MD,<sup>a</sup> Mircea L. Pavkov, MD,<sup>a</sup> James F. Bena, MS,<sup>b</sup> Timur P. Sarac, MD,<sup>a</sup> Patrick J. O'Hara, MD,<sup>a</sup> Sean P. Lyden, MD,<sup>a</sup> and Daniel G. Clair, MD,<sup>a</sup> (J Vasc Surg 2008;48:1451-57).

*Conclusion:* R/PTAS is a suitable, less invasive alternative to ABE for the treatment of severe AIOD.

# Endovascular Treatment (ET) for aorto-iliac artery Occlusion

- Nearly all aorto-iliac occlusions can be treated successfully with an endovascular treatment (ET) ...given appropriate tools and expertise
- .....approach often include a combination of brachial and femoral arterial access

# Endovascular Treatment (ET) for aorto-iliac artery Occlusion



- *Perioperative mortality...*
  - for ET is low, with **0%** in most reports, though there is an older analysis with mortality as high as 4%
  - for open repair is higher, ranging from **0- 7%**, with more contemporary rates closer to 1%

# Endovascular Treatment (ET) for aorto-iliac artery Occlusion



- Comparison surgery *versus* ET in the Nationwide Inpatient Sample...
  - > ET has a decrease mortality and ...
  - > significantly ..decreased rates of complications (16% vs 25%)
  - ..length of stay (2.5 vs 5.8 days)
  - ..hospital cost (\$13.7k vs \$17.2k)



# Endovascular Treatment (ET) for aorto-iliac artery Occlusion

- ET has high technical success rates of **82-98%**, even TASC II D lesions
- Technical failures are associated with failure to cross the lesion, followed by early thrombosis and iliac artery injuries

# Endovascular Treatment (ET) for aorto-iliac artery Occlusion

- Early complications of open aortobifemoral grafting...
  - > Injury to ureters can occur
  - > Spinal cord ischemia is an infrequent that can occur if hypogastric artery perfusion is impaired
- Late complications of open aortobifemoral grafting...
  - > *graft thrombosis* can occur in **up to 30%** @ 10 years
  - > *Groin complications* affecting **up to 25%** of patients due to lymphoceles, local infection, or dehiscence
  - > *Late infections* of aortofemoral grafts range from **1.3 to 6%**
  - > The large and often *multi-stage operations* are associated with very high operative **mortality of 11-22%**

# Endovascular Treatment (ET) for aorto-iliac artery Occlusion

- *Angioplasty (PTA) and stenting*
  - Stenting has a higher patency and technical success vs PTA
  - Near at the origin of the common iliac artery is best treated with “kissing stents,” with or without aortic stenting.
  
- *Thrombolysis and Mechanical Thrombectomy*  
... can be used as an adjunct to angioplasty and stenting

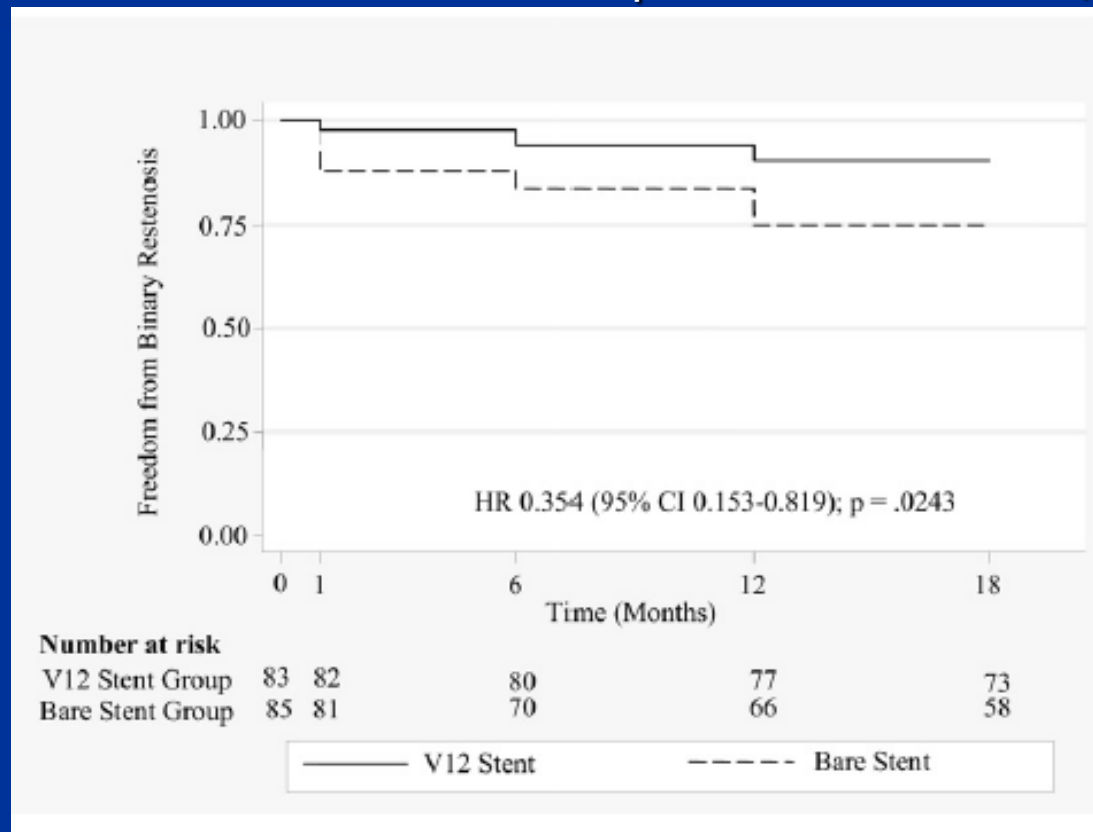


# Endovascular Treatment (ET) for aorto-iliac artery Occlusion

## ■ Covered Stents

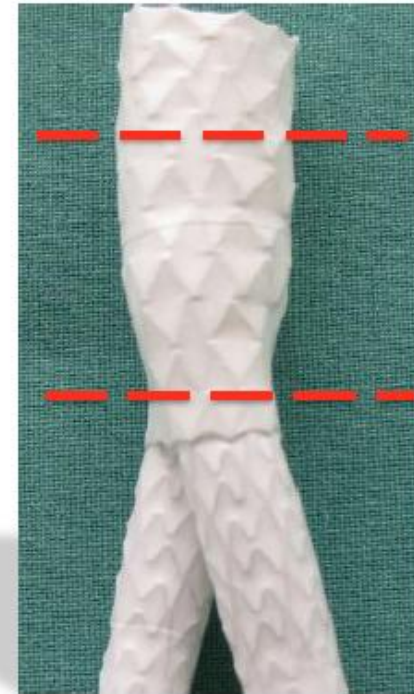
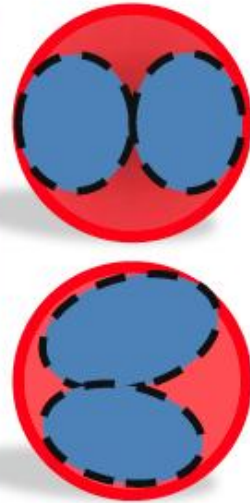
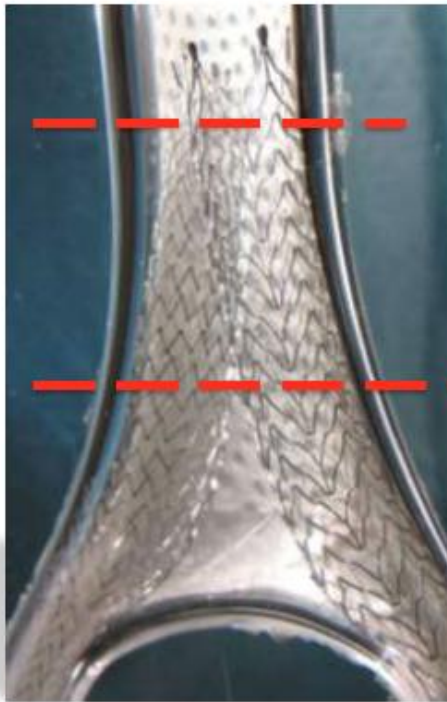
- There is some evidence to support the use of stent grafts

-> *COBEST*: “Covered vs Balloon Expandable Stent Trail”, n=128



# Kissing Stent vs. Covered Stent

## Covered Endovascular Reconstruction of the Aortic Bifurcation (CERAB)



# Endovascular Treatment (ET) for aorto-iliac artery Occlusion

## RESULTS CERAB-Study in TASC II C + D Aorta-iliacal

	6 months	12 months	18 months	24 months
<b>Primary patency</b>	<b>90.0%</b>	<b>84.4%</b>	<b>84.4%</b>	<b>84.4%</b>
<b>Secondary patency</b>	<b>93.5%</b>	<b>93.5%</b>	<b>93.5%</b>	<b>93.5%</b>
<b>Freedom from TLR</b>	<b>92.2%</b>	<b>86.5%</b>	<b>86.5%</b>	<b>86.5%</b>

# Endovascular Treatment (ET) for aorto-iliac artery Occlusion



- Postoperative ABI are not significantly different between surgery and ET:  
-> increase from 0.48 to 0.84 (surgery) vs. 0.36 to 0.82 (ET)

# Endovascular Treatment (ET) for aorto-iliac artery Occlusion

- ET for severe aorto-iliac disease is associated with ..
  - 5 years primary patency of **60-86%** and
  - secondary patency of **80-98%**
- ET for aortic occlusion, have similar patency rates .....
- @1 year of **85-88%** and @ 3 years of **66-98%**
- @ 1 year secondary patency of **96-100%**, and @ 3 years of **90-92%**

# Endovascular Treatment (ET) for aorto-iliac artery Occlusion



- .... But you still might argue ...multiple studies have shown surgery gives..
  - > higher primary patency rates @ 5 years (85%-90%) and @ 10 years of (75-85%)



# Endovascular Treatment (ET) for aorto-iliac artery Occlusion

- Patients being treated for extensive aorto-iliac disease have a **poor overall prognosis** independent of surgery type

->..... 10 year survival as low as 30%!

-> fact that prevents them from realizing the benefit of improved long-term patency!

# Summary

- Treatment of severe aortoiliac disease has dramatically evolved from dependence on open surgery to endovascular therapy (ET) only approaches
- Open surgery has been the gold-standard with excellent patency rates, .....however with increased costs and length of stay and also major complications!
- ET can successfully treat almost any lesion with mainly decreased risk compared to open surgery with comparabel outcome.
- ET should definitely be considered as first-line treatment option for all patients with aorto-iliac disease!





Vielen Dank für Ihre Aufmerksamkeit