

Stenting in acute aortic dissection

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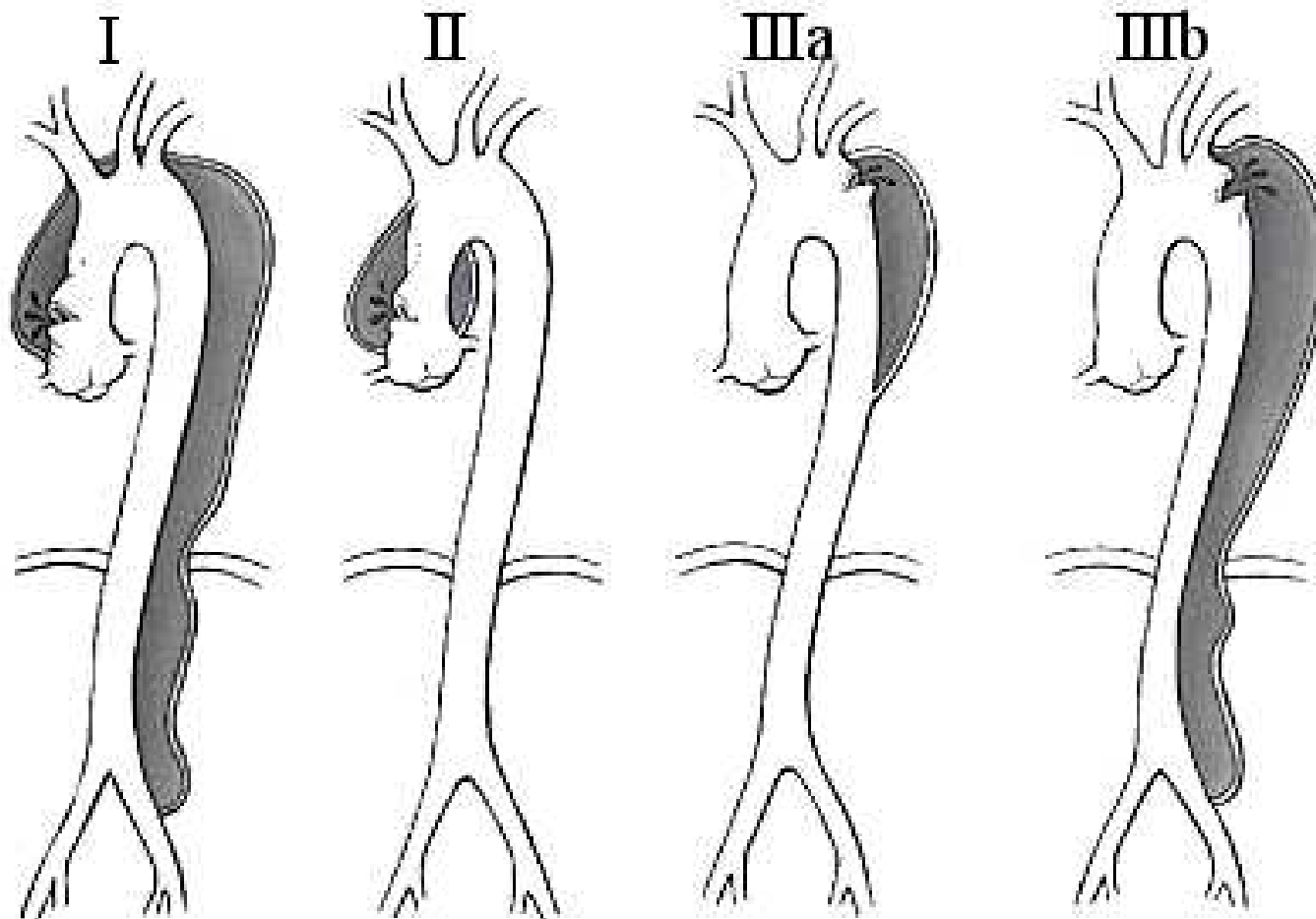
History

- First description published by Nicholls in 1760,
- in which he described the symptoms as well as the autopsy finding of King George II

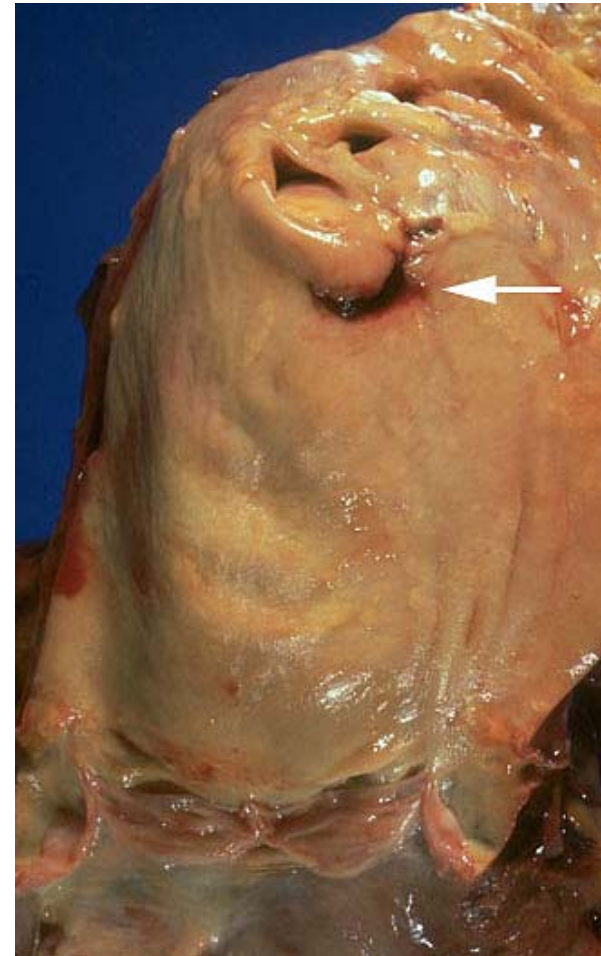
Incidence

- 0.5-3.5 cases per 100 000 inhabitants and year
- with regional differences
- Men are twice as often affected as women
- Median age
- Atherosclerotic 65 years
- Medial necrosis 45 years

DeBakey classification of acute dissection



Acute Dissection Definition: Onset of symptoms <14 days



Natural History

- In the late fifties:
- The 14 day mortality 75%
- the 3 month mortality 90% ,
- 40% within 30 days (without the modern effective antihypertensive medication).

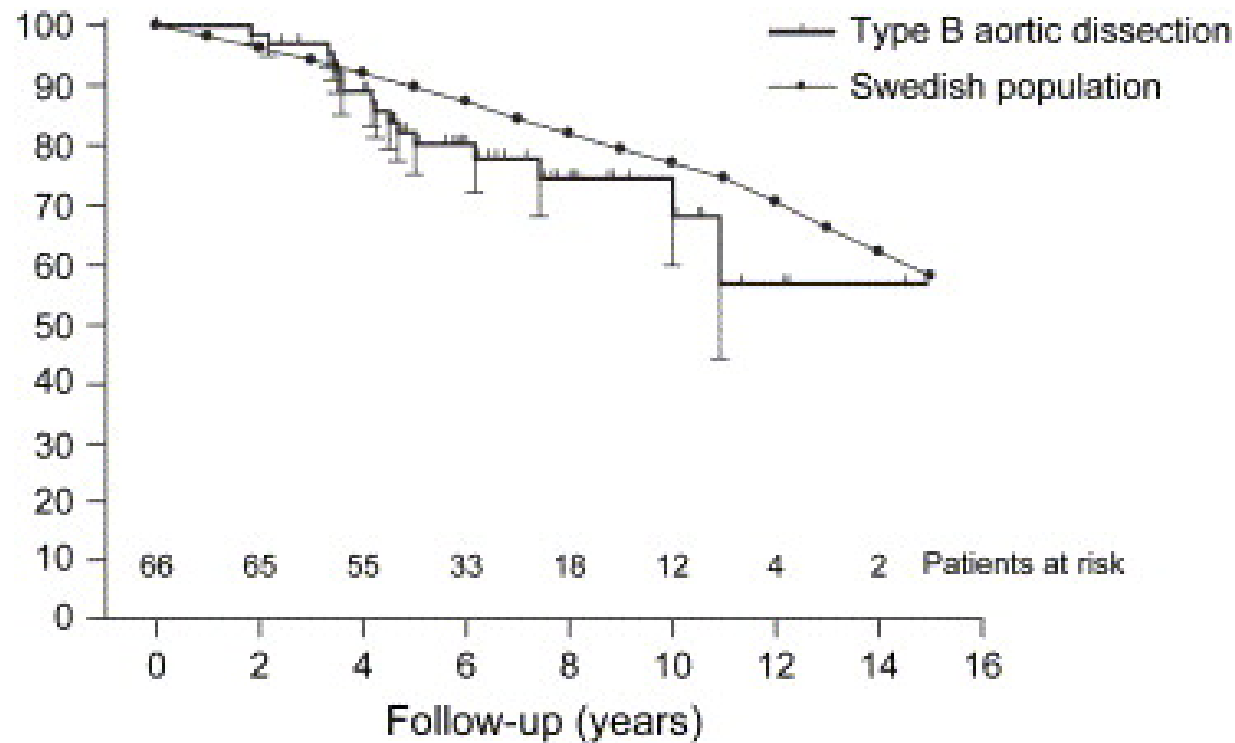
Risk factors for Mortality

Factor	Odd's Ratio	
Female gender	1.99	
Aortic aneurysm	2.17	
Renal failure	2.5	
Hypotension	12.5	

Medical treatment Mortality

Article	No	30 d	1 y	3y	5 y	10y
Fradet et al. 1990	36 (9+27)	30%				
Glower et al. 1990	56	18%	6%	?	13%	68%
Masuda et al 1991	61	8%	11%	?	24%	44%
Neya et al. 1992	37	8%	?	?	36%	?
Elefteriades et al 1992	49	20%	27%	37%	42%	75%
Schor et al. 1996	48	2%	10%	?	13%	?
Gysi et al. 1997	187	18%	?	?	24%	50%
Iguchi et al. 1998	43	0%	?	?	9	?
Elefteriades et al 2	100	9%	?	?	?	?
Genoni et al. 2002	78	9%	?	?	?	?
Umana et al. 2002	122	?	15%		29%	62%
Suzuki et al. 2003	384	13%	?	?	?	?
Hata et al. 2003	79	4%	?	?	?	7%
H.-Y. Yu et al. 2003	4641	10%	28%	42%	50%	54%
Onitsuka et al. 2004	76	17%	?	?	?	?
Mehta et al. 2004	279	16%	?	?	?	?
Estrera et al 2006	129	10.1%				
Total	6405	10.6%				

Survival of an outpatient cohort

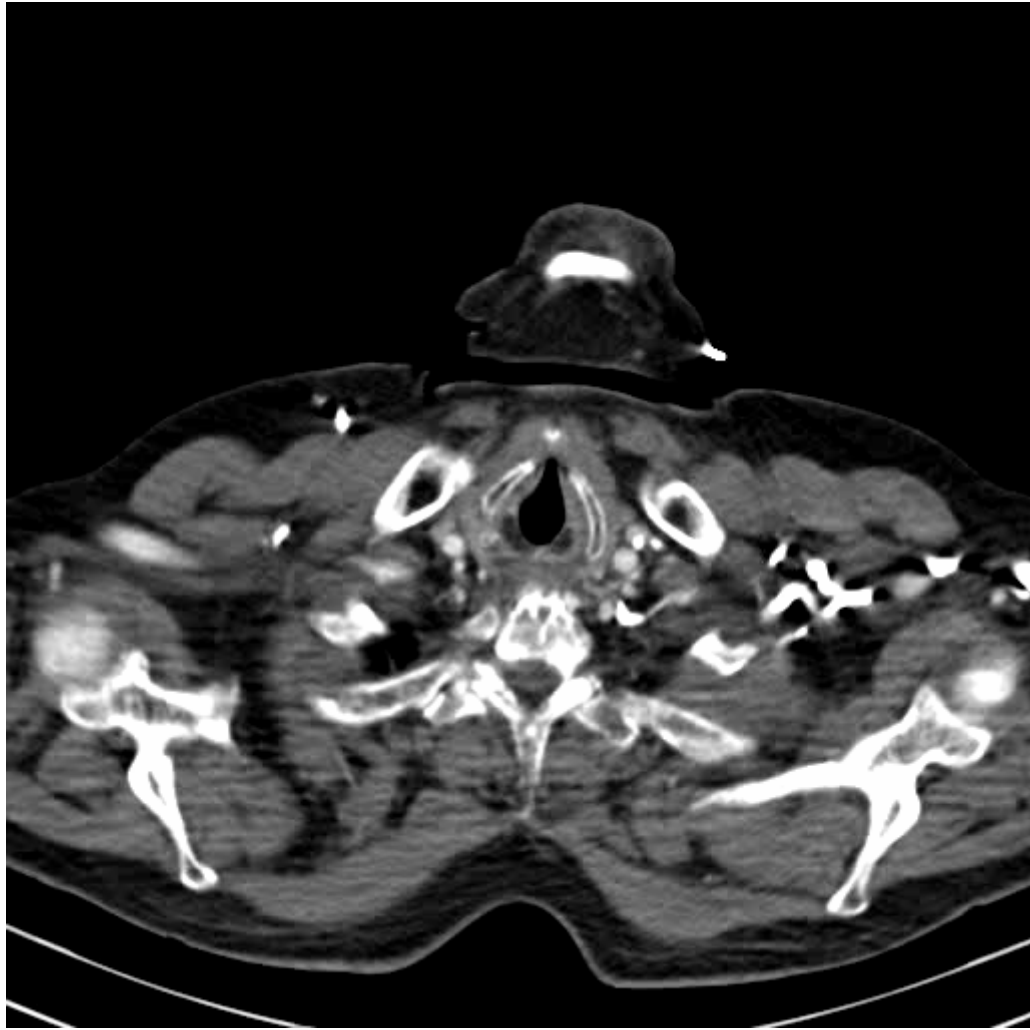


Complications to acute dissection

- Mortality 10-20%/30d
- Rupture 10%
- Organ Ischemia 5-10%
- Dilatation/Aneurysm 25%/4 years
- Refractory Hypertension 5-10%

Indication for interventional or open treatment

- Rupture
- Malperfusion
 - Visceral Ischemia
 - Leg Ischemia
 - Hypertension
- Aneurysm
- Intractable Pain



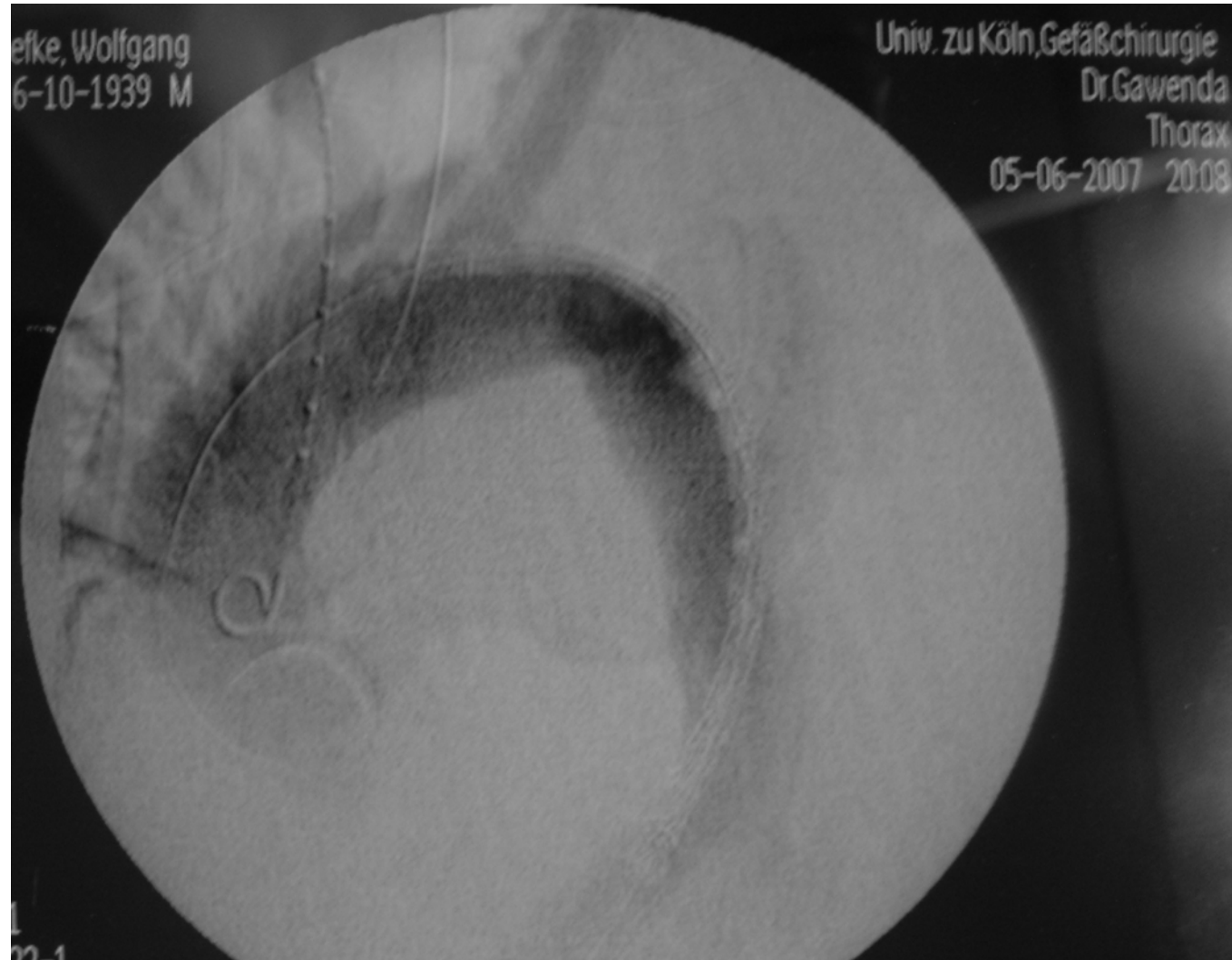
Angiogram preoperatively



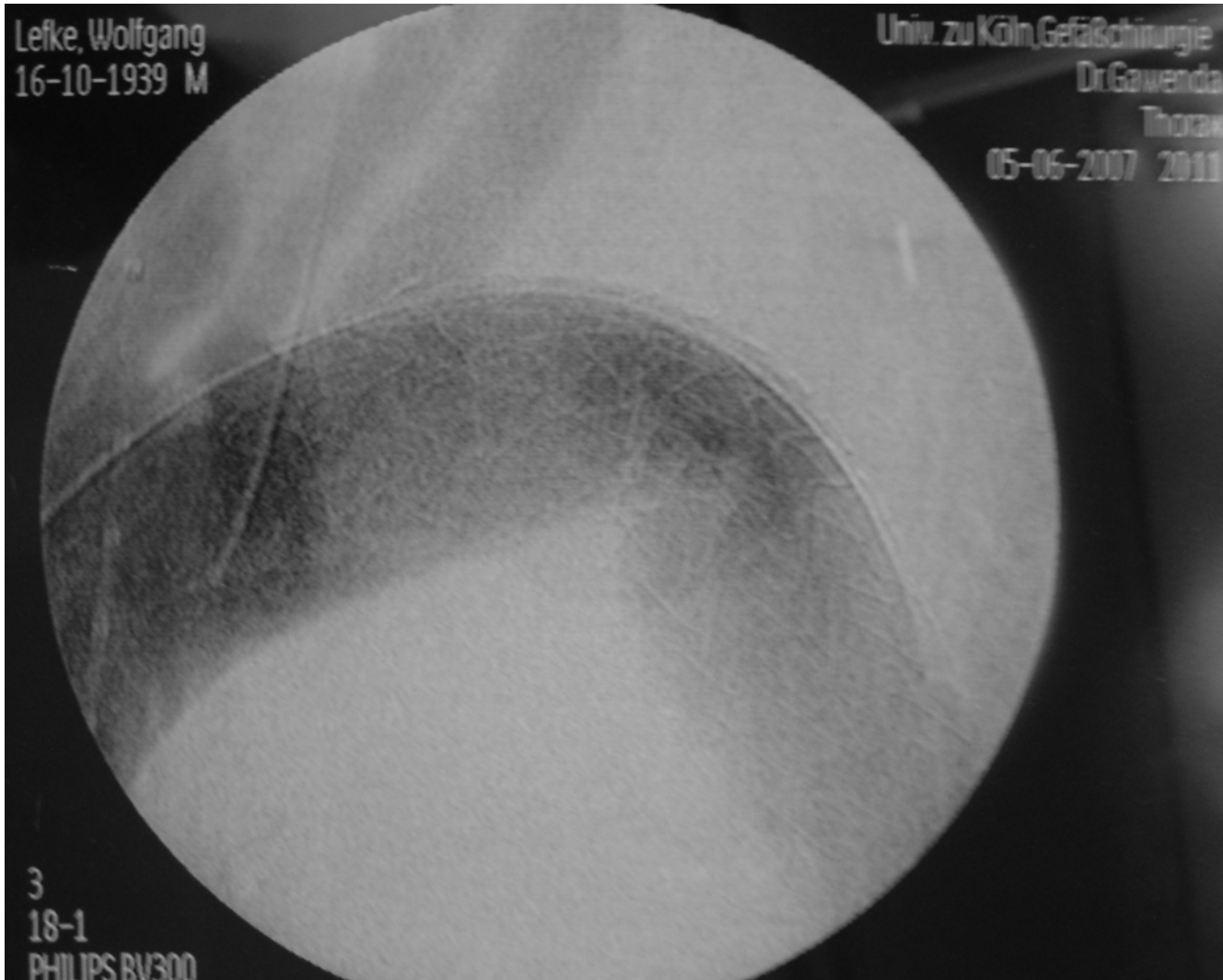
Angiogram preoperatively



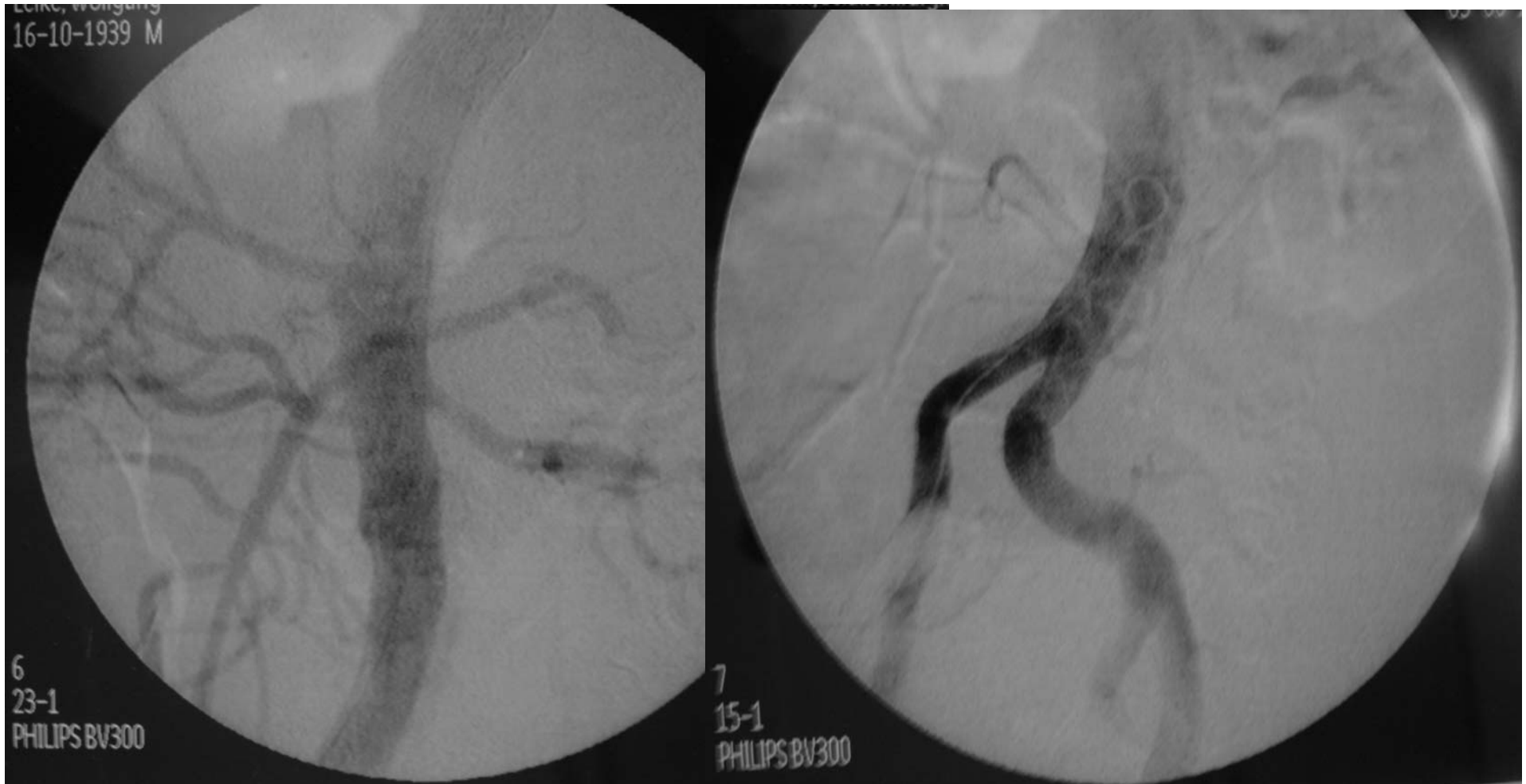
Angio intraoperatively pre TEVAR



Angio intraoperatively post TEVAR



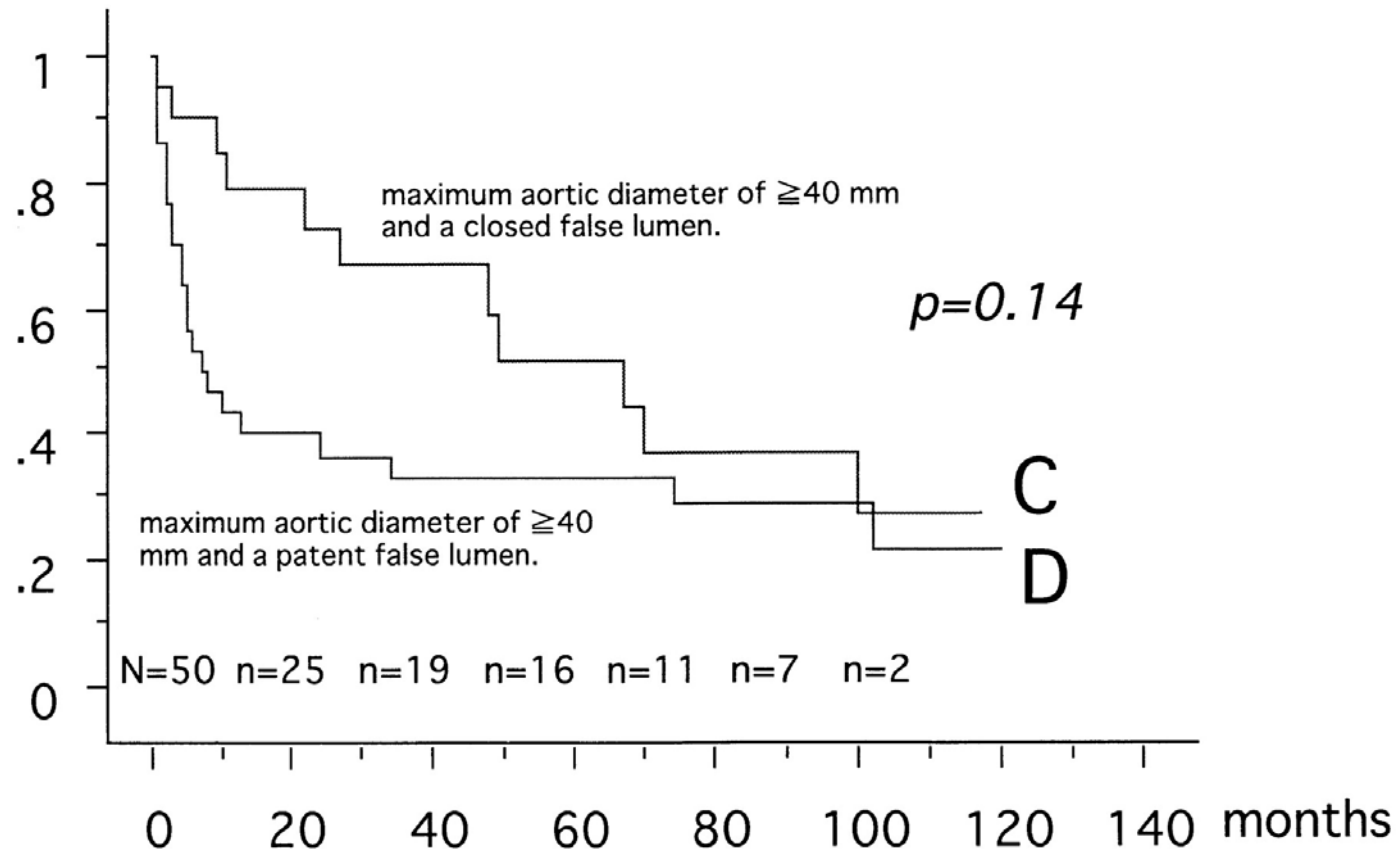
Angio intraoperatively post TEVAR



Postoperative after TEVAR

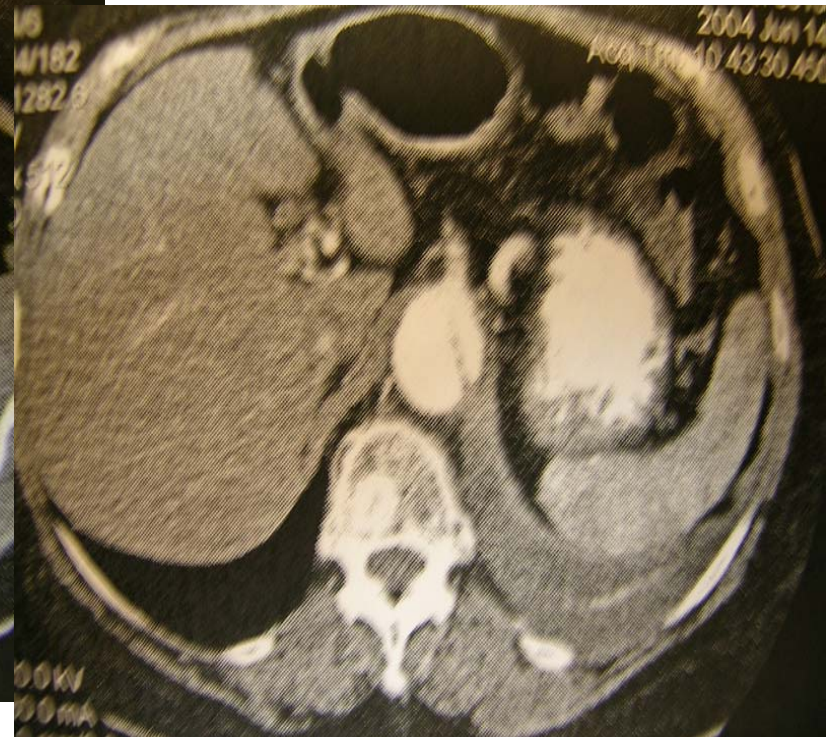


Event free survival



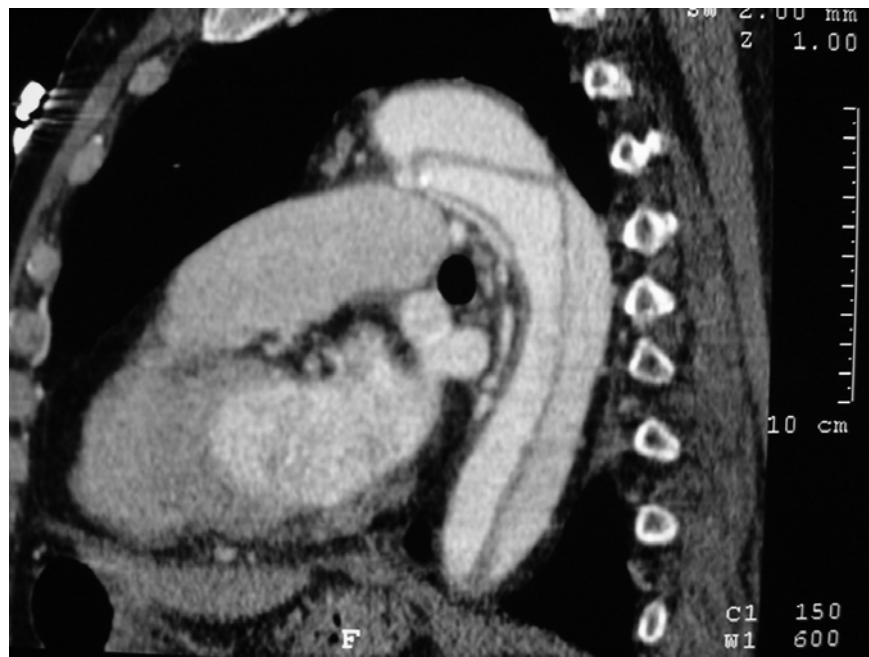
Marui, A. et al. *Circulation* 1999;100:II-275-II-280

Acute Dissection DeBakey IIIb





Acute dissection type DeBakey IIIb



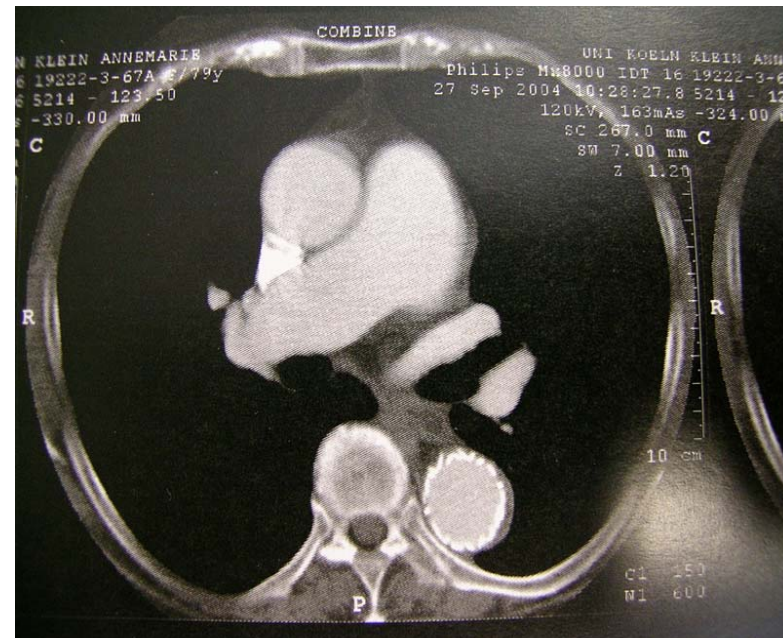


1 Week after TEVAR





Acute Dissection 3 Months after TEVAR





After TEVAR



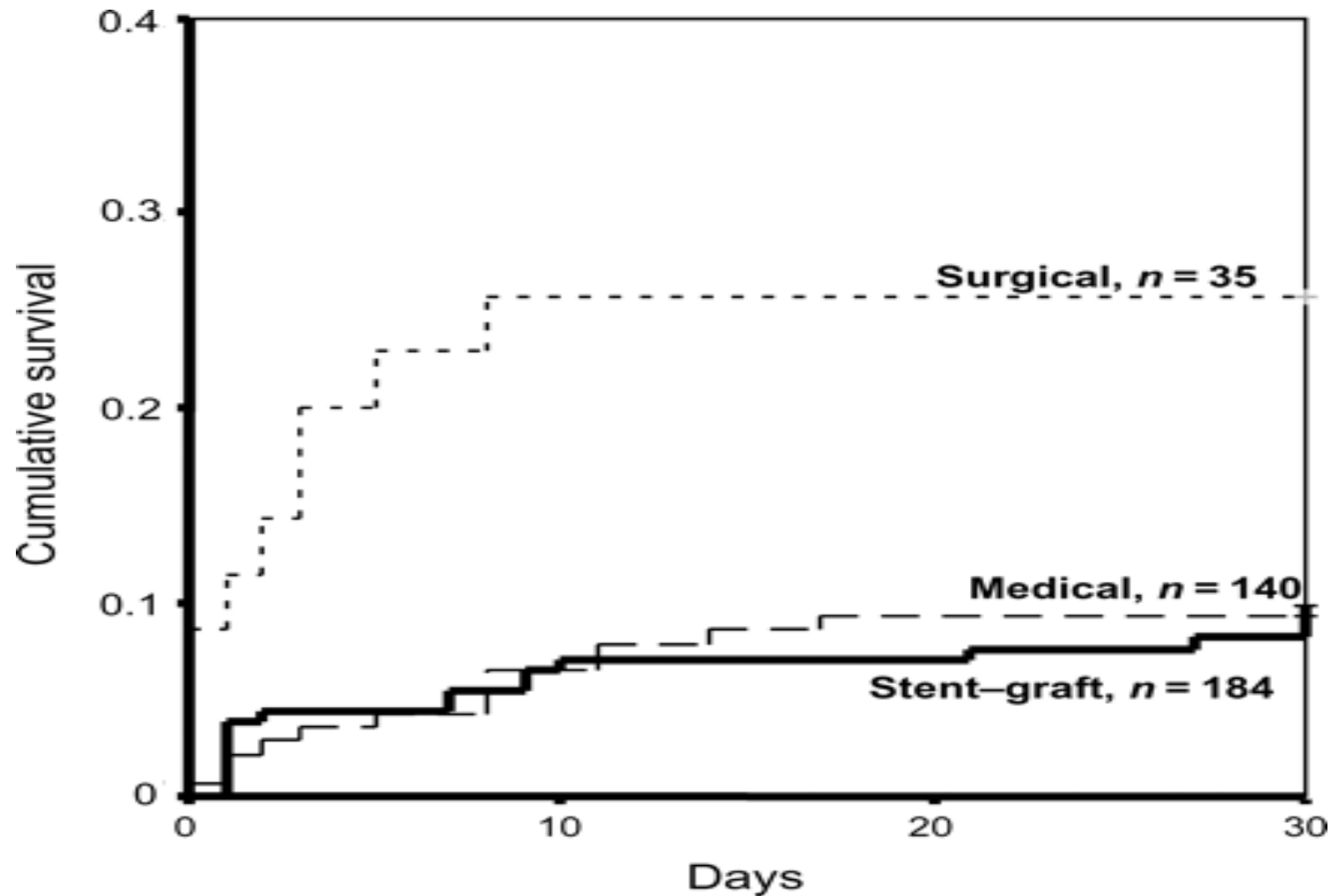


Thrombosis of false lumen (covering the proximal tear) Acute/Chronic

False channel outside stentgraft	70-90%
Below the stentgraft	50%
At the coeliac trunk	20-30%



Comparison of Open Rx v.s. Surgical v.s. Stentgraft





IRAD (International Registry Acute Dissection)

3-year survival

Medical (n189)	78%
Surgical (n26)	82%
TEVAR (n27)	76%



TEVAR vs. Medical Treatment

	TEVAR n28	Medical n28	P-value
30-day mortality	11%	0%	n.s.
18 month mortality	11%	14%	n.s.
Dilatation 18 month	4%	29%	<.02
Thrombosis false channel	75%	11%	<.001



Summary

Still, with modern Therapy, patients with an acute dissection DeBakey III (Stanford B) have a not ideal survival (90% within 30 days.)

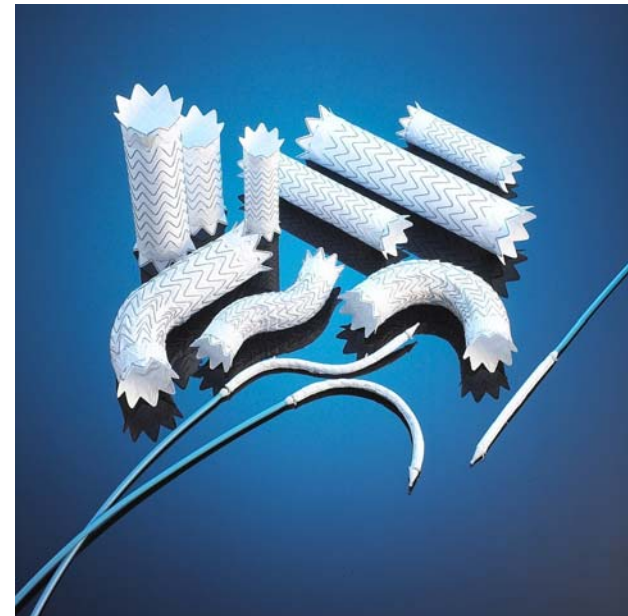
The risk of developing dilatation/aneurysm is 25% within 4-5 years.

Acute treatment may redirect the flow to the true channel and almost reach an “restitutio ad integrum”.



ADSORB

Prospective, Randomized, Multicentric,
European study in **A**cute Uncomplicated
Aortic **D**issection Type B Evaluating
Stent-Graft Placement **OR** **B**est Medical
Treatment (BMT) Alone





Definition of Acute Uncomplicated Type B Dissection

Onset of symptoms <14 days before enrolment

Primary aortic entry tear for dissection
identified distal to the left subclavian artery
(DeBakey III)

No symptoms of mesenteric arterial, renal
and/or upper and lower extremity branch
vessel ischemia



Endpoints

Primary Endpoints

- Incomplete/no false lumen thrombosis,
- aortic dilatation, or
- aortic rupture through the 1-year follow-up visit

Secondary Endpoints

- Dissection Related Mortality at one and three years
- All cause Mortality
- Intervention-free Survival



Study Overview

Products evaluated	TAG Thoracic Endoprosthesis
Comparator	Best Medical Treatment Alone
Type of Study	Prospective, Randomized, Multicentric and European
Number of Patients	~ 250 (125 stent-graft, 125 BMT)
Number of Sites	~ 30 centres, Europe
Total Study Duration	4 years <ul style="list-style-type: none">• 1 year recruitment• 3 year follow-up



Organization

Sponsor:

W. L. Gore & Associates

**Principal
Investigator:**

**Prof. Jan Brunkwall,
Vascular Surgery at University Hospital
Cologne**

**Principal
Consultant:**

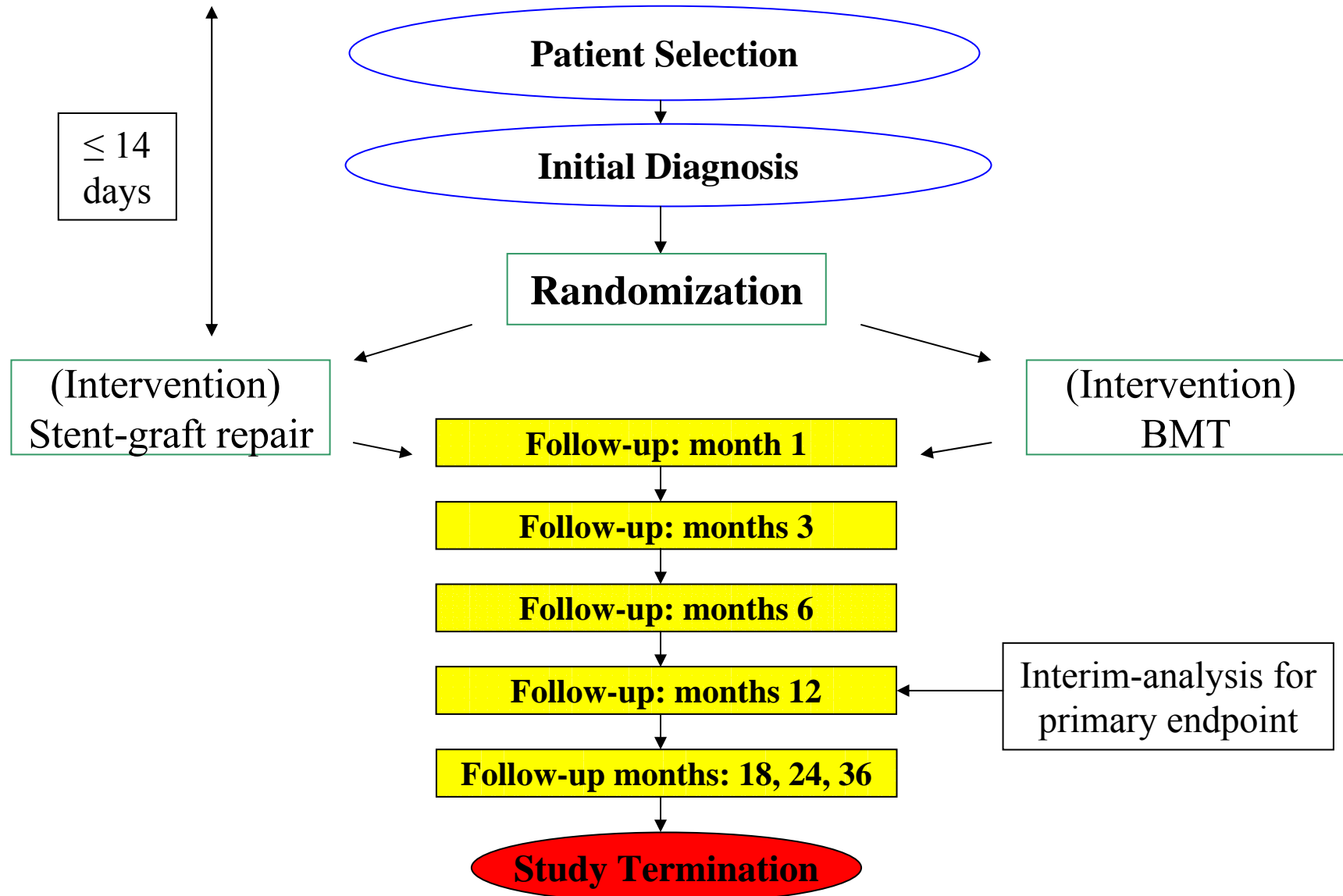
**Mr. Peter Taylor,
Vascular Surgery at Guys Hospital,
London**

Core Lab:

**Prof. H.-U. Kauczor,
Radiology at German Cancer Research
Centre in Heidelberg**



Study Diagram





Conclusions

Dissections Type DeBakey III:

A Randomised Controlled Trial
comparing TEVAR with BMT will give us
the answer of the role of TEVAR in
acute uncomplicated dissections



**Thank you
for your attention!**

