

Aortic disease: *atherosclerosis, aneurysm, dissection, miscellaneous*

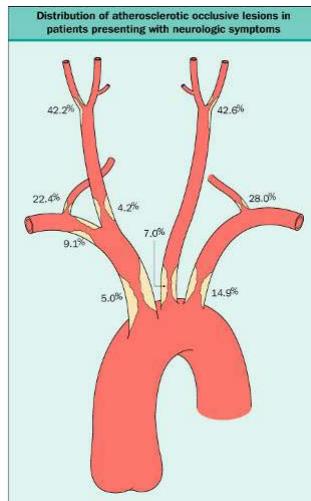
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Depts. Radiology and Surgery
Sahlgrenska Academy
Rigshospitalet Denmark

Aortic atherosclerosis

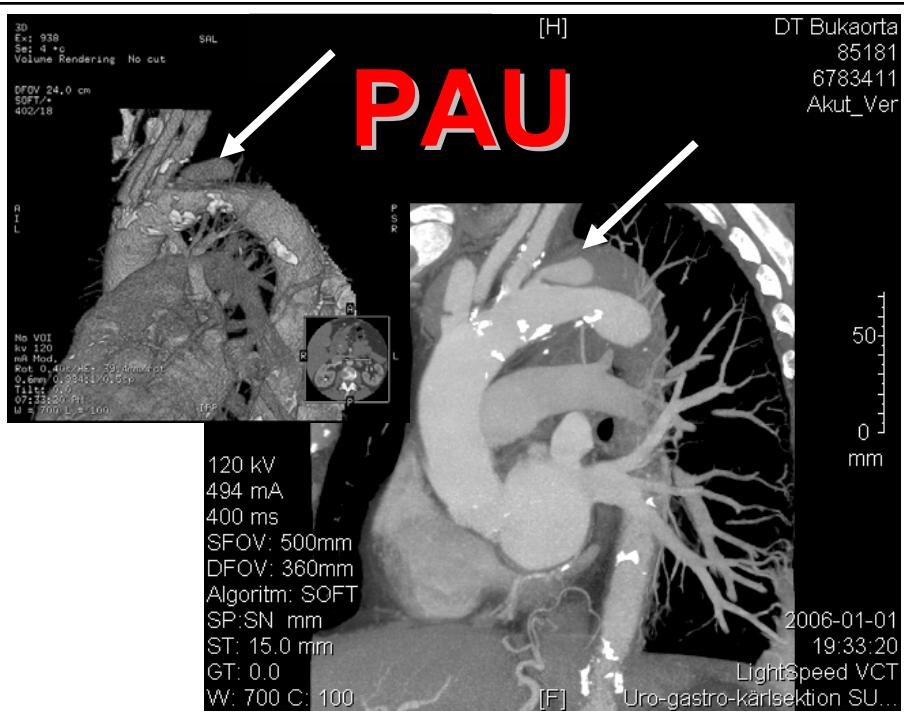
**Stenotic
Ulcerative
Expanding**

} **Abdomen**
} **Thorax**

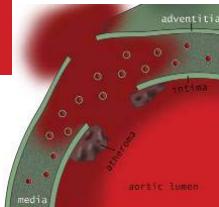
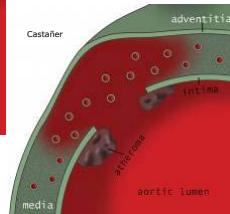
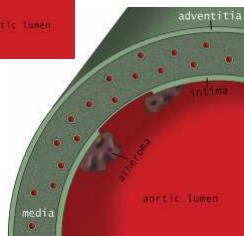
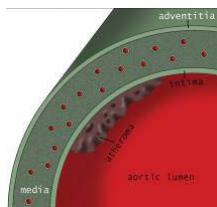
Branch stenosis



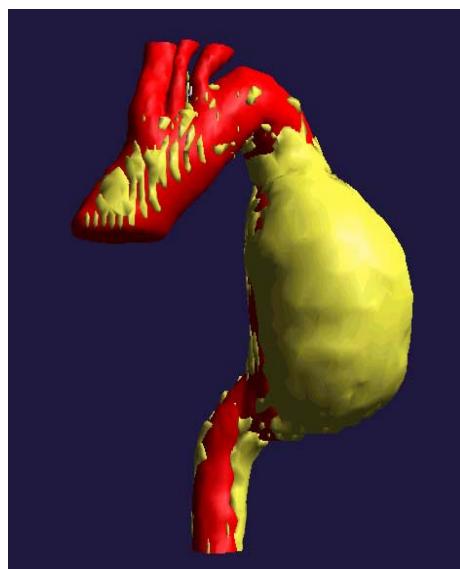
Hallett et al: Comprehensive Vascular and Endovascular Surgery © 2004 Elsevier Ltd.

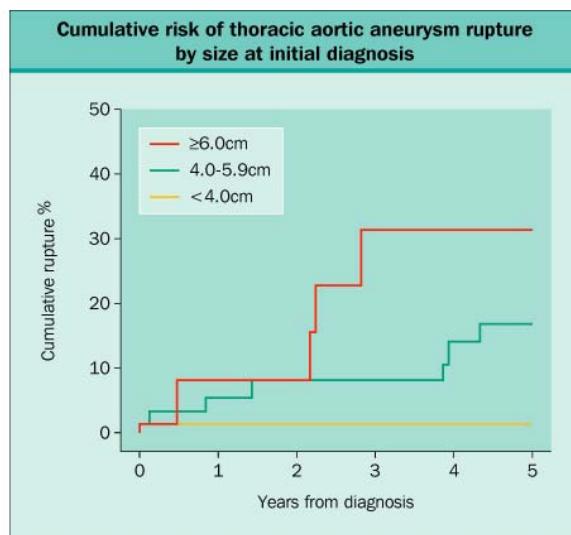


4 stages in formation of PAU



20 % of AA

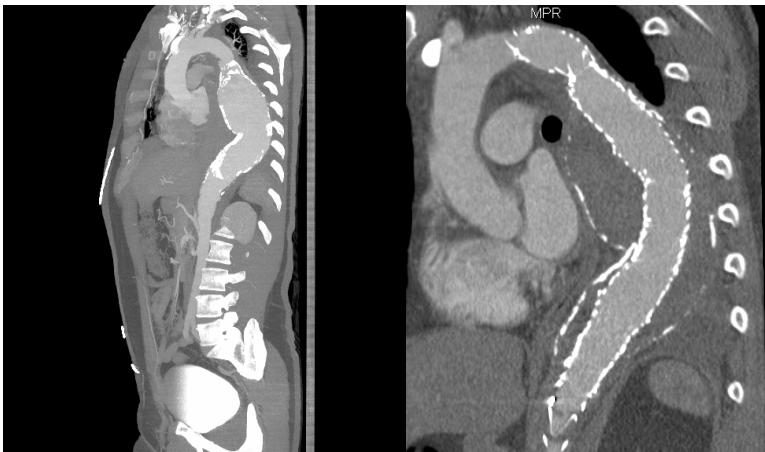




Hallett et al: Comprehensive Vascular and Endovascular Surgery © 2004 Elsevier Ltd.

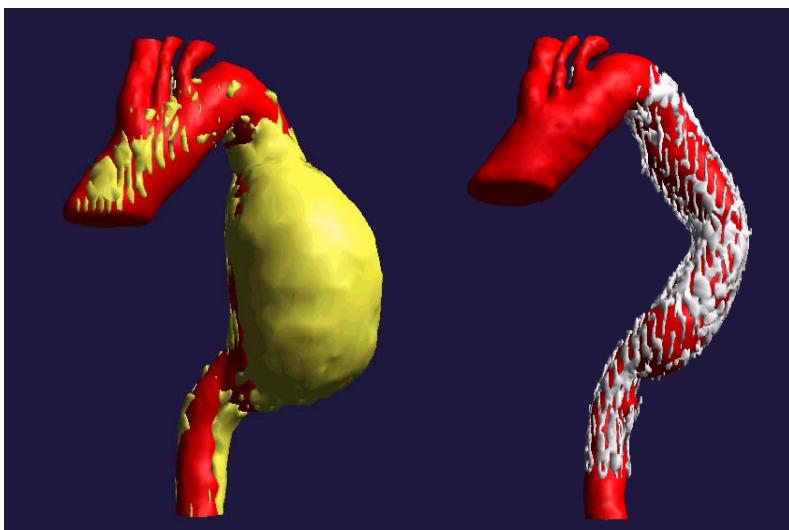


EVAR



The **endovascular revolution**

EVAR



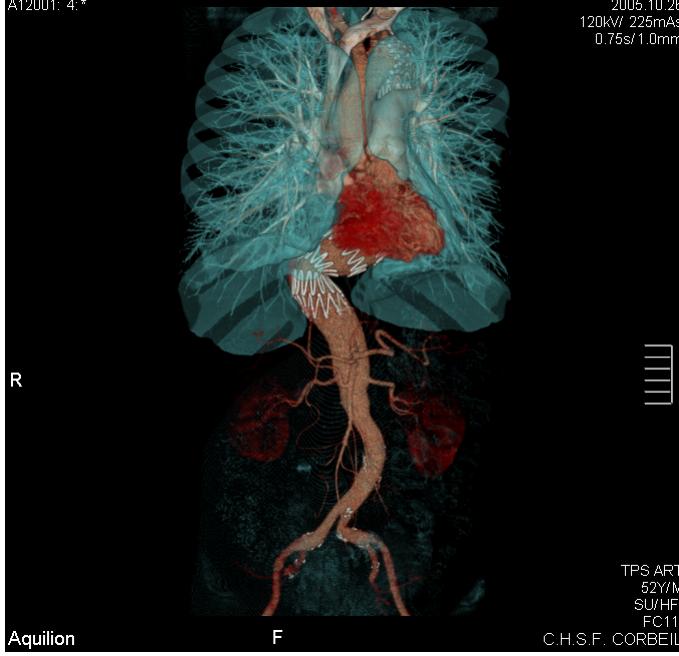
EM64-WH-005
A12001: 4:^{*}

Aorta Stent thor.abd.

2005.10.26

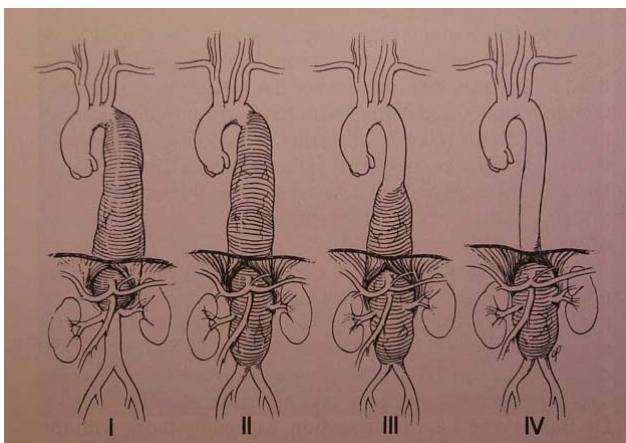
120kV/ 225mAs

0.75s/1.0mm



TAAA

15 - 20 % of AA



TAAA

*Death
Paraplegia
Stroke*

TAAA

Open

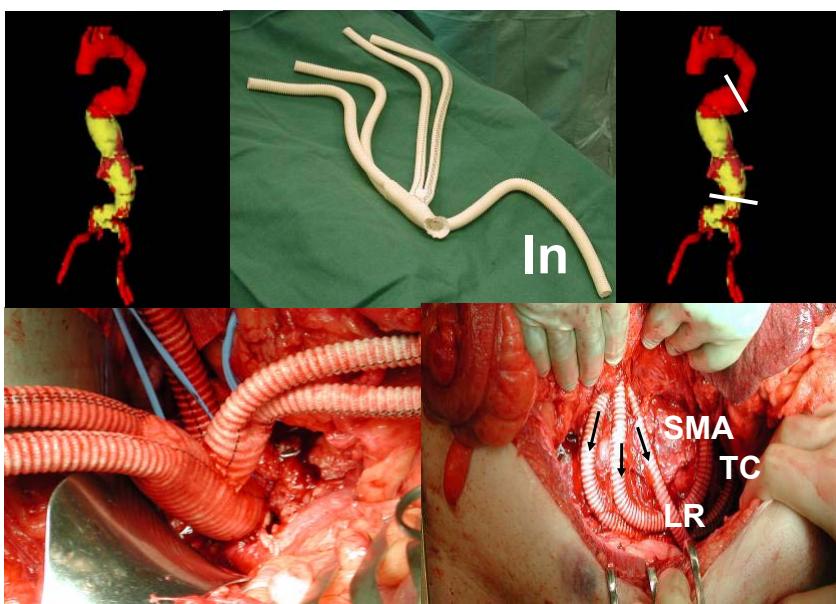
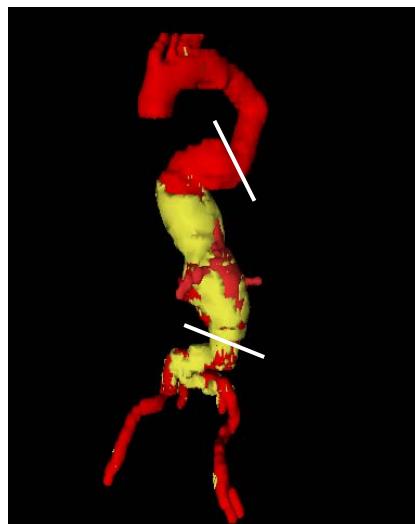


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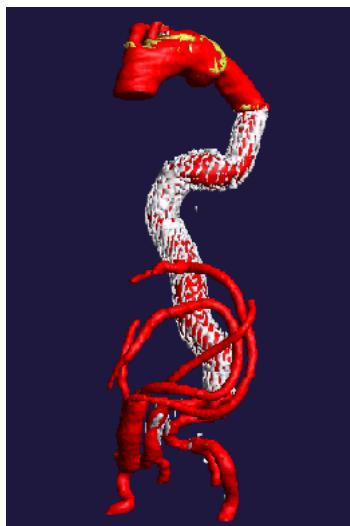
Hybrid



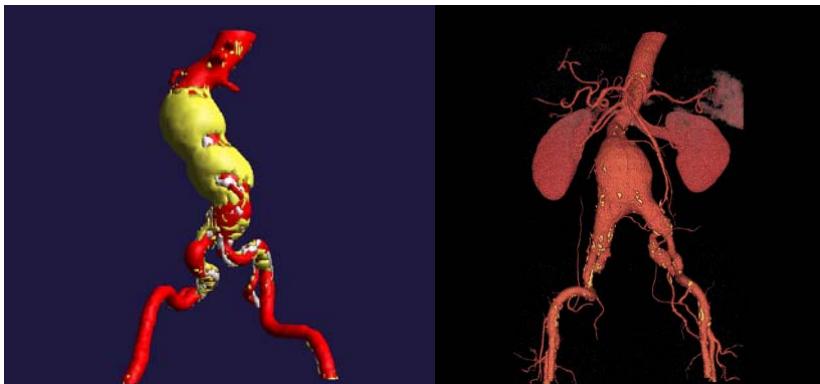
TAAA



TAAA



200 / million

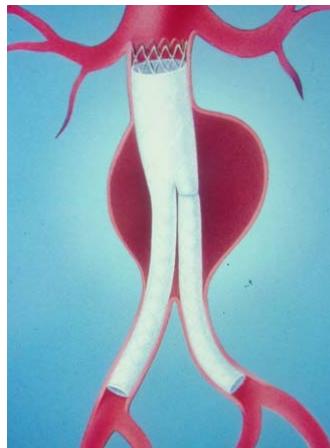


AAA

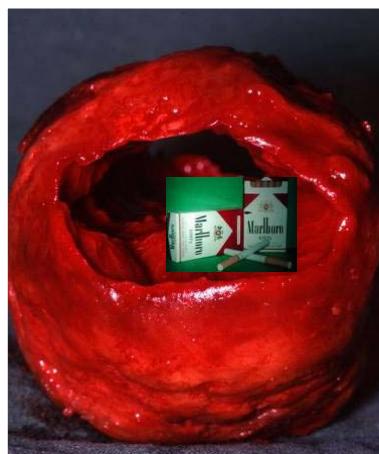
Open



EVAR



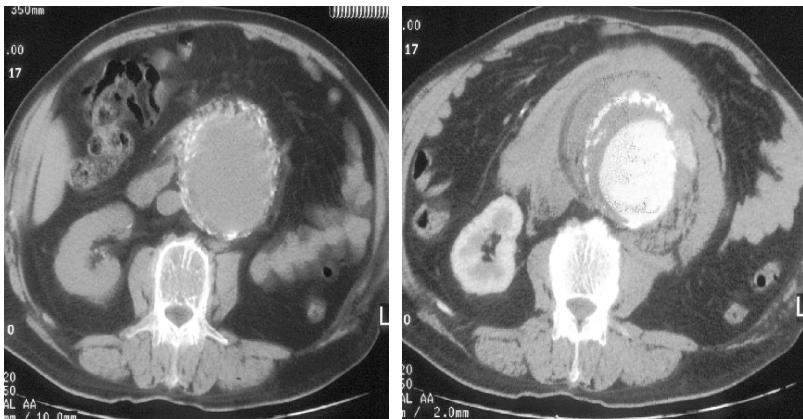
Welcome to ...



...country

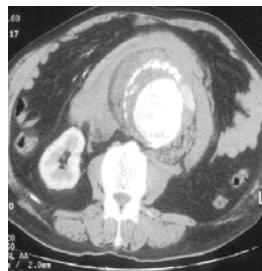
**Only 15 % of pts with AAA
die from rupture**

+ 7 min



Acute dissection

2 x



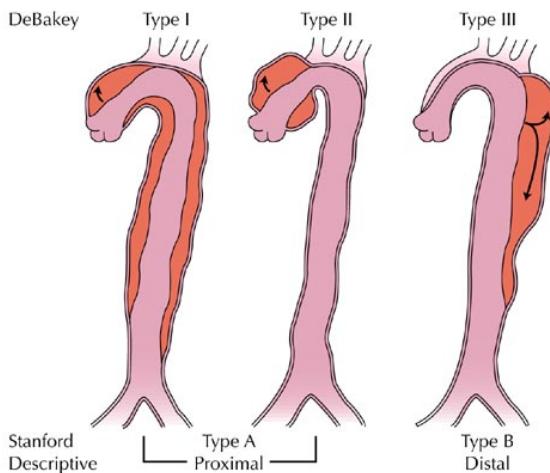
10 – 20 / million / year

Acute dissection

Degeneration

Atherosclerosis
Marfan
Ehlers-Danlos

Dissection



Acute dissection

Type A

**Pain
Tamponade
Valvular insuff.
Rupture**

Acute dissection

Type B

**Pain
Ischemia
medulla
viscera
extremities
Rupture**

Acute Type B Dissections

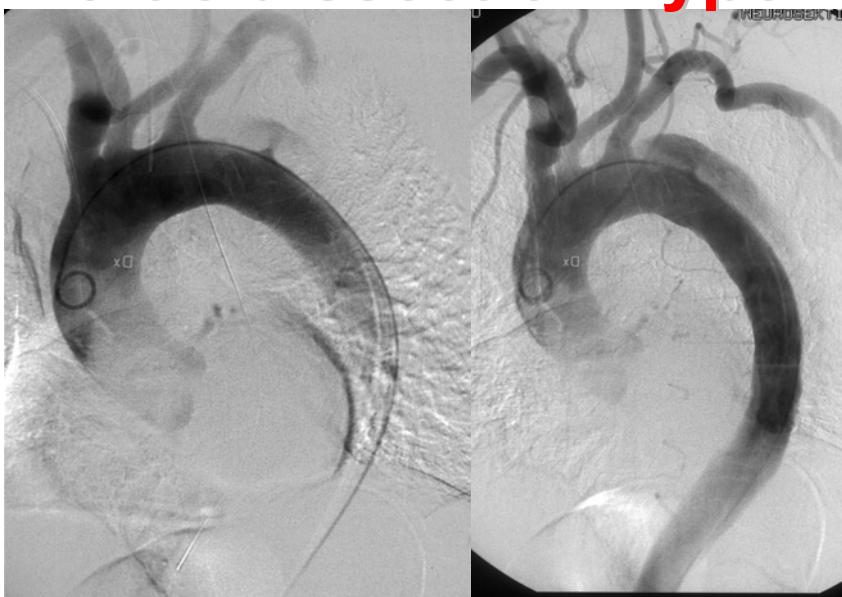
*Mortality
(untreated)*

24 h 33%

48 h 50%

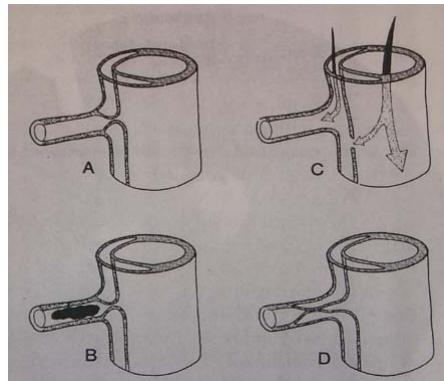
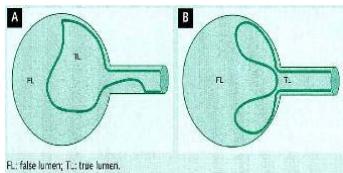


Aortic dissection Type B



Dissection

Obstruction Static Dynamic

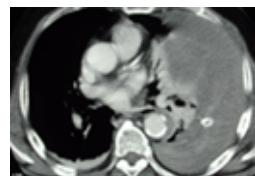
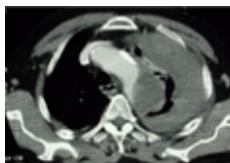


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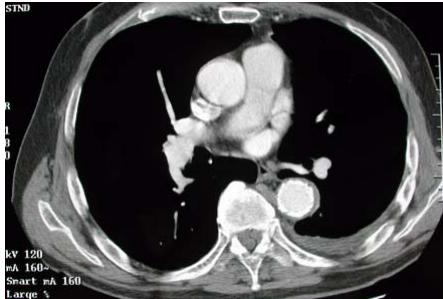




Dissection type B - rupture



Dissection type B - rupture



1 month

Chronic dissection Type B

Aneurysm formation

20 %

Chronic dissection

Type B

Rupture

Age
Hypertension
COLD
Pain
Aneurysm

Juvonen et al J Thorac Cardiovasc Surg 1999

Chronic dissection

Type B

Rupture

Last known diameter
54 mm

Juvonen et al J Thorac Cardiovasc Surg 1999

Chronic dissection

Type B

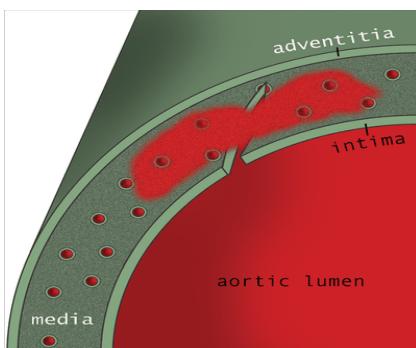
Aneurysm formation

Good BP control
Bad BP control

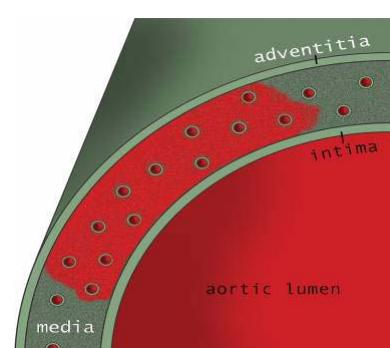
17 %
45 %

DeBakey et al Surgery 1982;92:1118-34

Dissection
- intimal rupture



Intramural hematoma
- no intimal rupture



Intramural hematoma



A

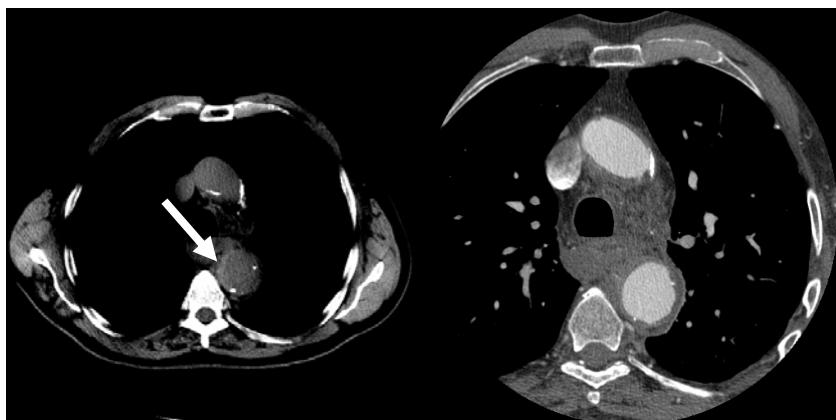


B

Ascending
aorta

Maraj et al. Am J Cardiol 2000;86:664-8

Intramural hematoma



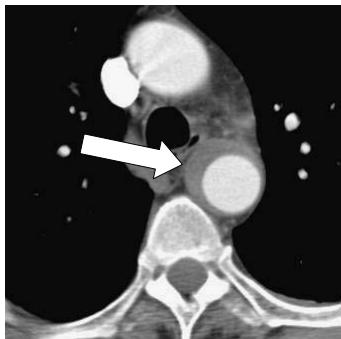
without
contrast

with

Intramural hematoma

Aorta descendens

Acute



Regression



Ehlers-Danlos

Type IV

Thin skin

Atrophic scars

Ecchymoses

Multiple aneurysms

Arterial rupture

Ehlers-Danlos

Type IV

**Arterial dissection
Bowel disrupture
Uterine rupture**

Ehlers-Danlos

Type IV

**Avoid arterial puncture^{*}
CT – MRA
Ligate – not reconstruct
Avoid clamps**

***17 % mortality**

Chronic dissection

Type B

*Rupture -
cause of death
in*

20 - 30 %

Ehlers-Danlos

Type IV

**Only 3 survivors
of spontaneous aortic
rupture**

Ehlers-Danlos

Type IV

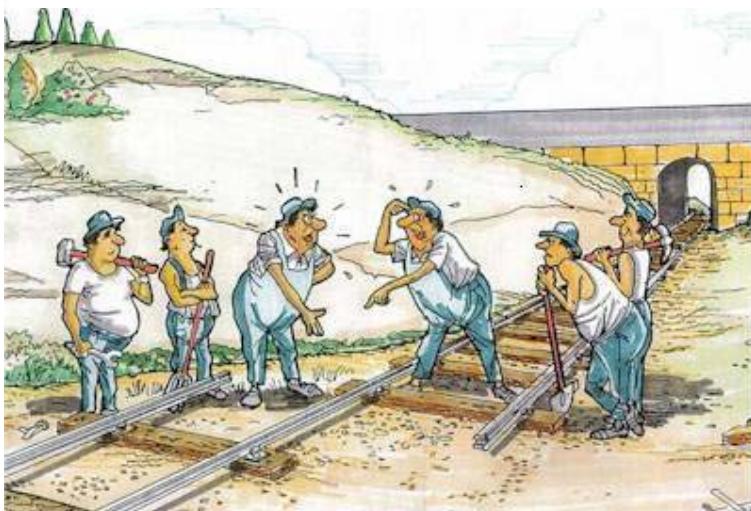
In pts surviving surgery
death is due to sec. vascular
and graft related
complications in > 90 %

Oderich et al J Vasc Surg 2005;42:98

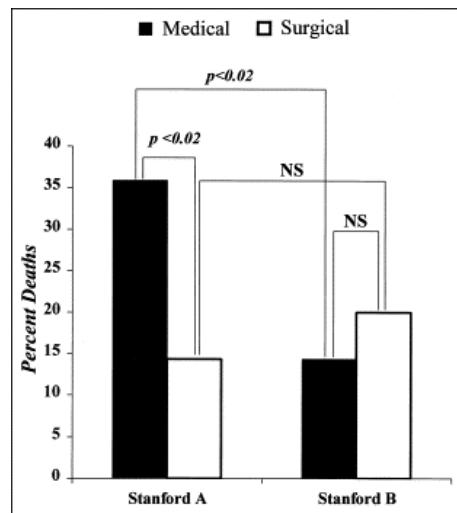
Marfan - EDS



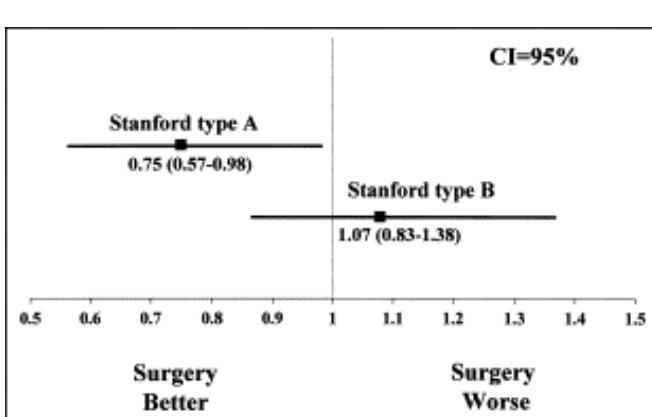
EVAR-team



The end

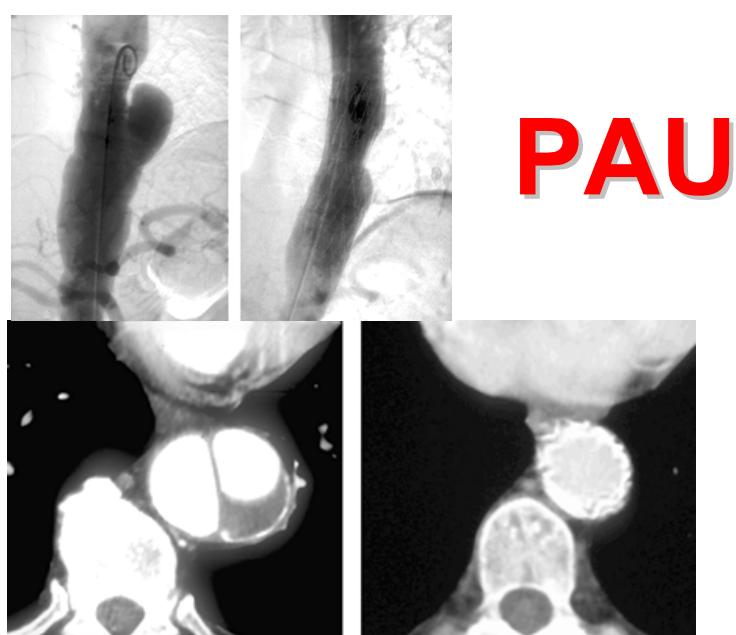
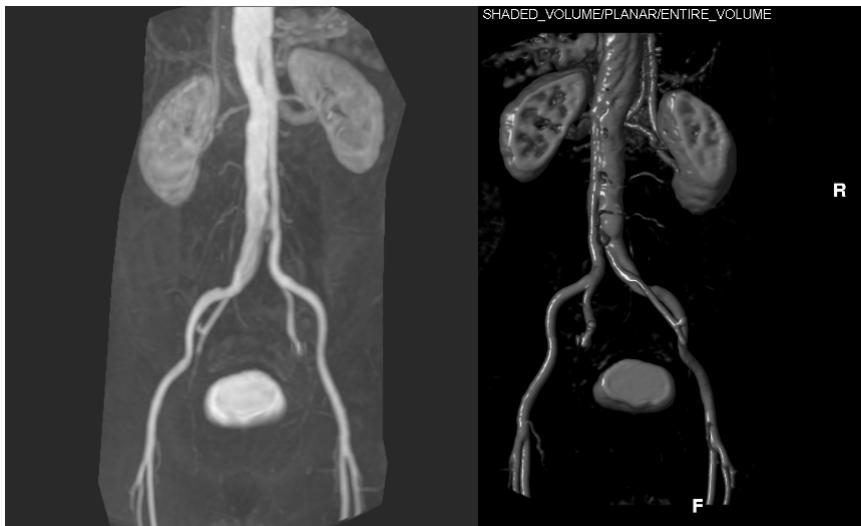


Maraj et al. Am J Cardiol 2000;86:664-8

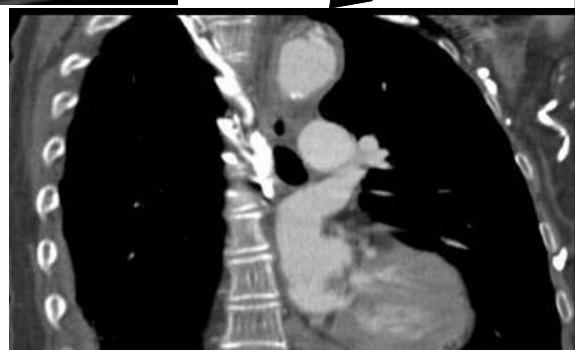


Maraj et al. Am J Cardiol 2000;86:664-8

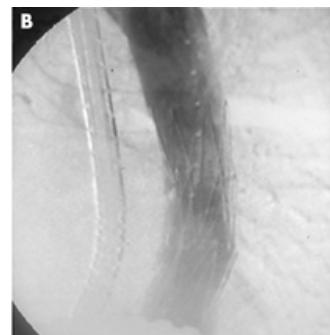
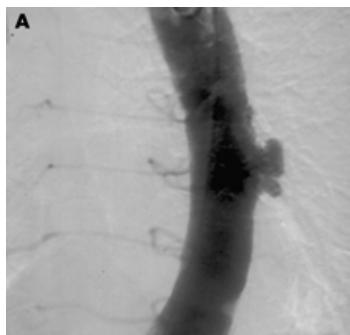
Dissection



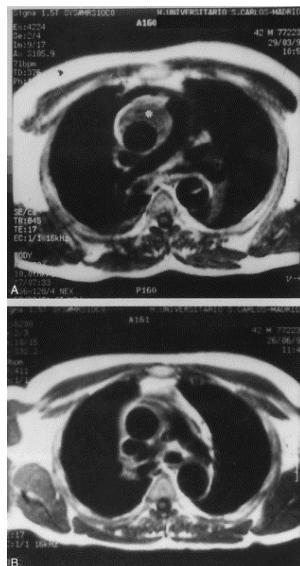
PAU



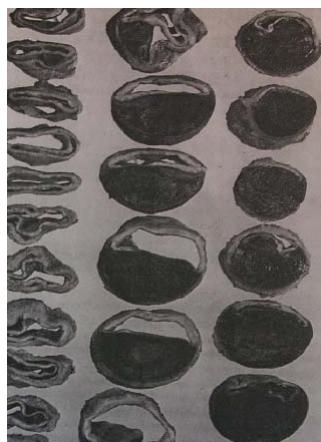
PAU



Intramural hematoma



Chronic dissection Type B



Dissection

