Reconstructive surgery for aortic disease

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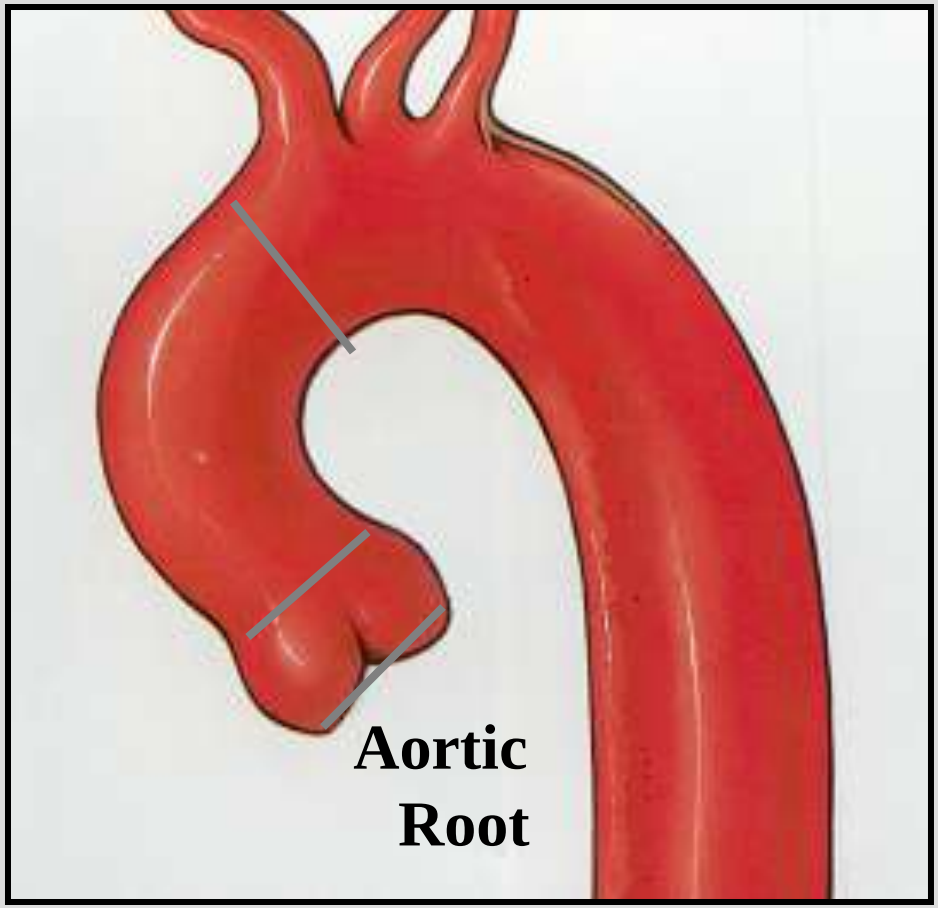
Reconstructive surgery of the aortic root

"Aortic valve repair: still a dream?" -*1997 M. Antunes*

Ascending Aorta



Reconstructive surgery of the aortic root

Aortic regurgitation -

Asymptomatic

Normal LV function (good prognosis)

- 75% 5 years survival

- Sudden death 0,2%

Abnormal LV function

- 50% - 5 year survival

- Sudden death 2%

Symptomatic (bad prognosis)

- 15% - 5 year survival

- Sudden death> 10%

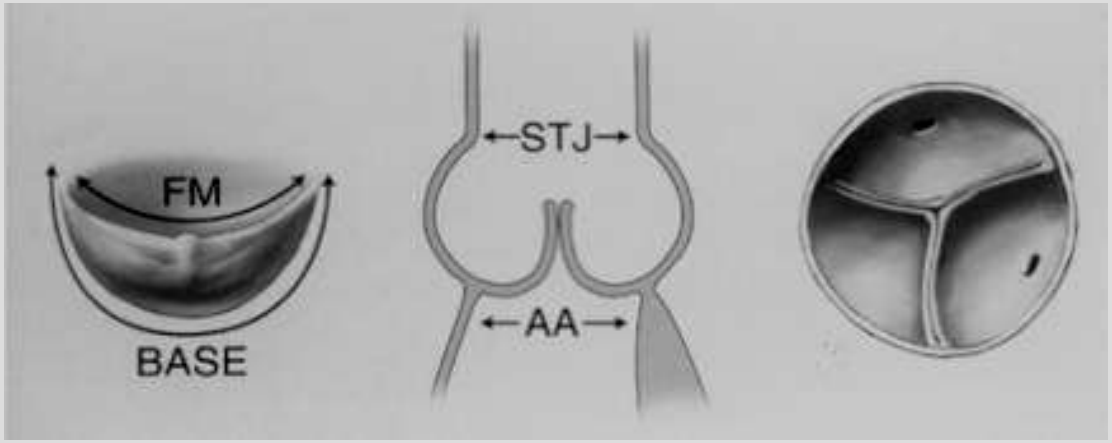
www.escardio.org

Reconstructive surgery of the aortic root

Aortic insuficiency

Different techniques depending on the assessment mode of the functional aortic annulus.

Functional aortic annulus (aortic root) FAA = internal part (aortic ventricular junction) + external part (sinotubular junction)



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Types of aortic regurgitation according to the pathoanatomical changes of the functional aortic annulus FAA

Type I. Normal cusps with FAA dilatation

Ia: Distal ascending aorta dilation (sino-tubular junction) – aterosclerotic etiology

Ib: Proximal (Valsalva sinuses) and sino-tubular junction dilation- Marfan Sy, sinus Valsalva ectasia…

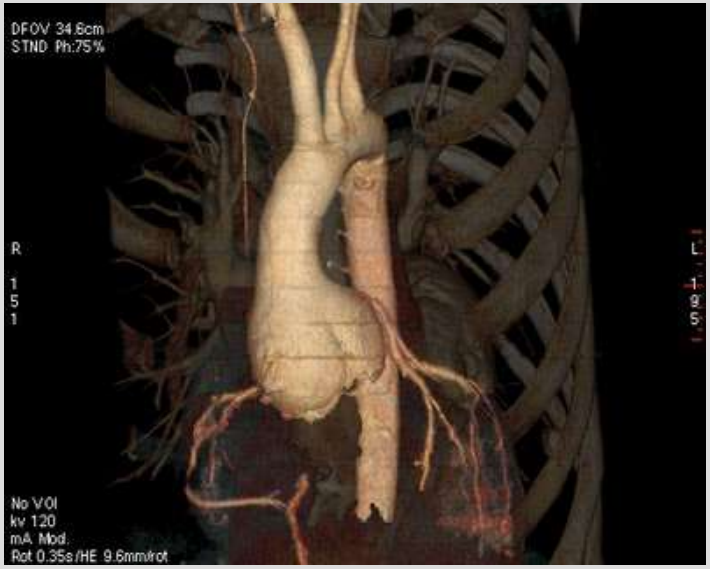
Ic: Isolated FAA dilation --- aortic ectasia

Id: Cusp perforation and FAA dilation

Type II. Cusp prolapsed: excess of cuspal tissue or commissural disruption / dissection

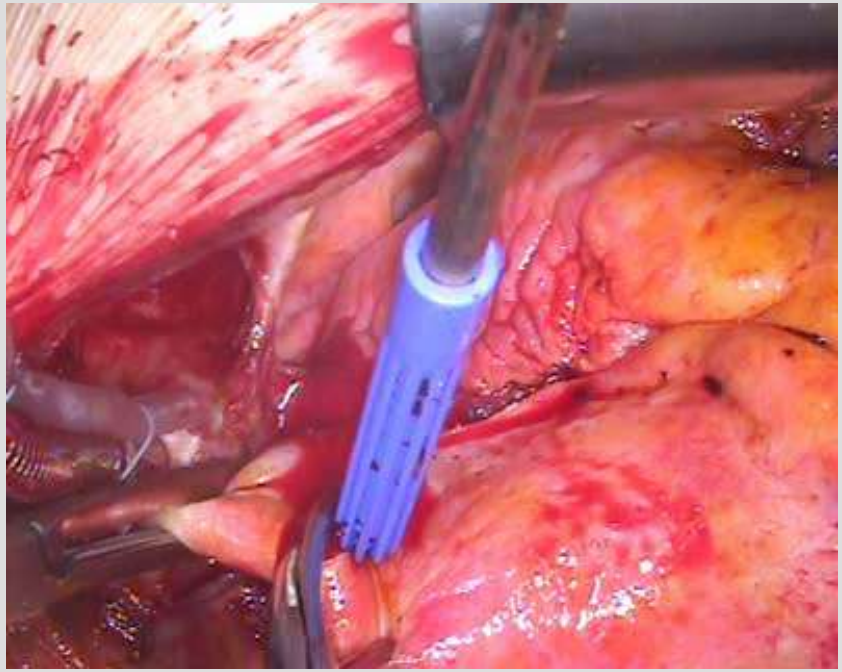
Type III. Cusp retraction, thickening and calcification.

Reconstructive surgery of the aortic root



Pre-operative

Post-operative

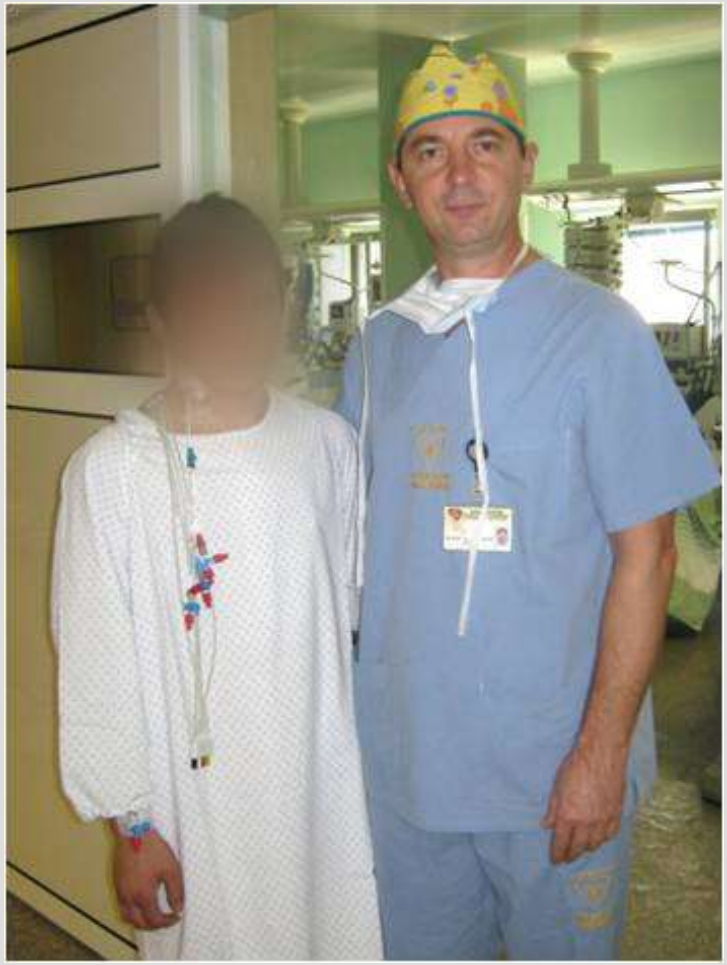


<u>Surgical treatment include</u>

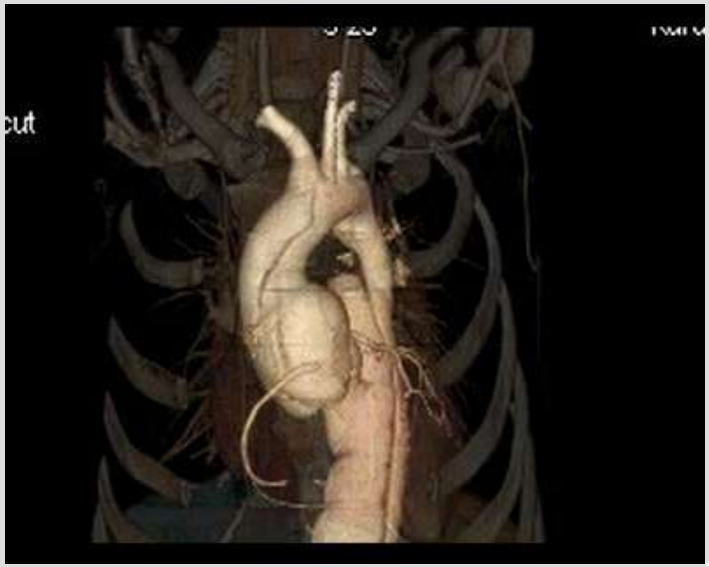
- **correction of dilated aortic anulus ,**
- **restavration of cusp coaptation,**
- **reposition of coronary ostia**
- **correction of sinotubular and ascending aorta dilatation**

Filip Vtori

Spearing-hybrid procedure



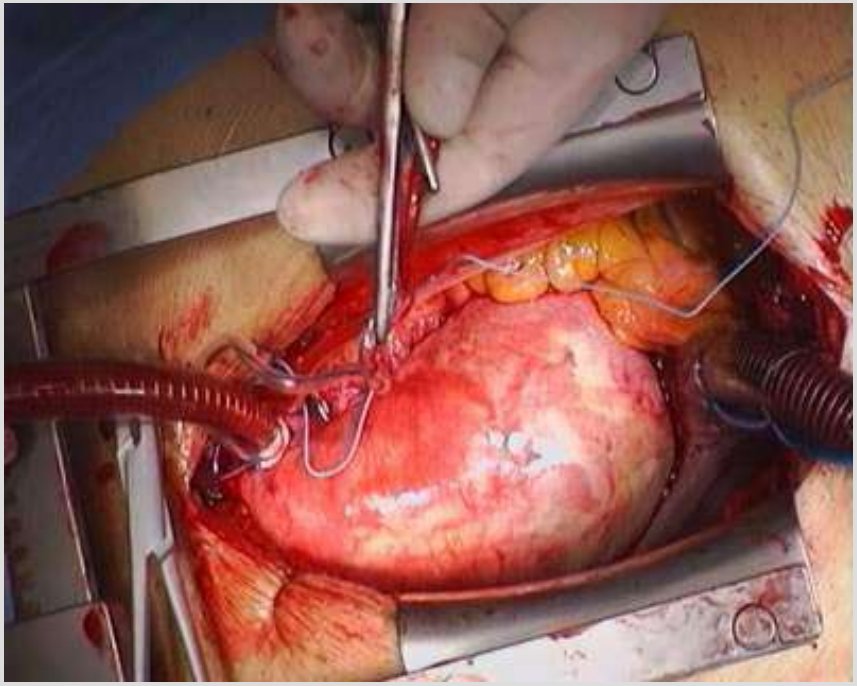
Surgery in aortic dissection n = 314 pts.



Type of surgery	Normal root	Aortic dissection	Aortic aneurysm
Tyrone David		72	64
Suspension and plication of aortic commissuraes		94	29
Reinforcement of the free margine of the semilunar leaflet	60	20	18

CBP time(min) 98 ±23.5
Xclamp time (min) 56.5 ±6.2
Antegrade perfusion (min) 23 ±9
Deepest rectal temperature 30.9 ±2.4ºC
Mortality rate - 4.3% (17 pts)

Surgery of aortic aneurysm n = 111 pts



Preop.

79 pts with root and aorta ascendens

CBP time (min) 122 ±23.5
Xclamp time (min) 67.5 ±6.2
Antegrad perfusion (min) 23 ± 9
Deepest rectal temperature 29.9 ±2.4ºC

Post.op

Mortality rate - 6 (5,76%)

Results N=425pts

Complications	Dissections (314pts)	Aneurysm (111pts)
Multiple organ failure	10(3,3%)	11(10,5%)
Cardiac complications	4 (1.3%)	6(5,7%)
Pulmonary complications	13 (4,3%)	6(5,7%)
Stroke	12 (3,9%)	5(4,8%)
Hemorrhage	15 (4,9%)	10(9,6%)
Acute renal insuff. with CVVHD treatment	15(4,9%)	7(6,7%)
Mortality	17(5,5%)	8 (7,2%)

Conclusion:

- **Aortic root reconstructive surgery can be done in emergencies or in elective patients**

- **Aortic valve reconstructive operations are an excellent option for patients with an aortic root aneurysm and normal /minimally morphologically changed aortic cusps.**