

Rationnal for aortic annuloplasty during standardized Aortic valve repair

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Disclosure information

Consultant for Coroneo, Inc

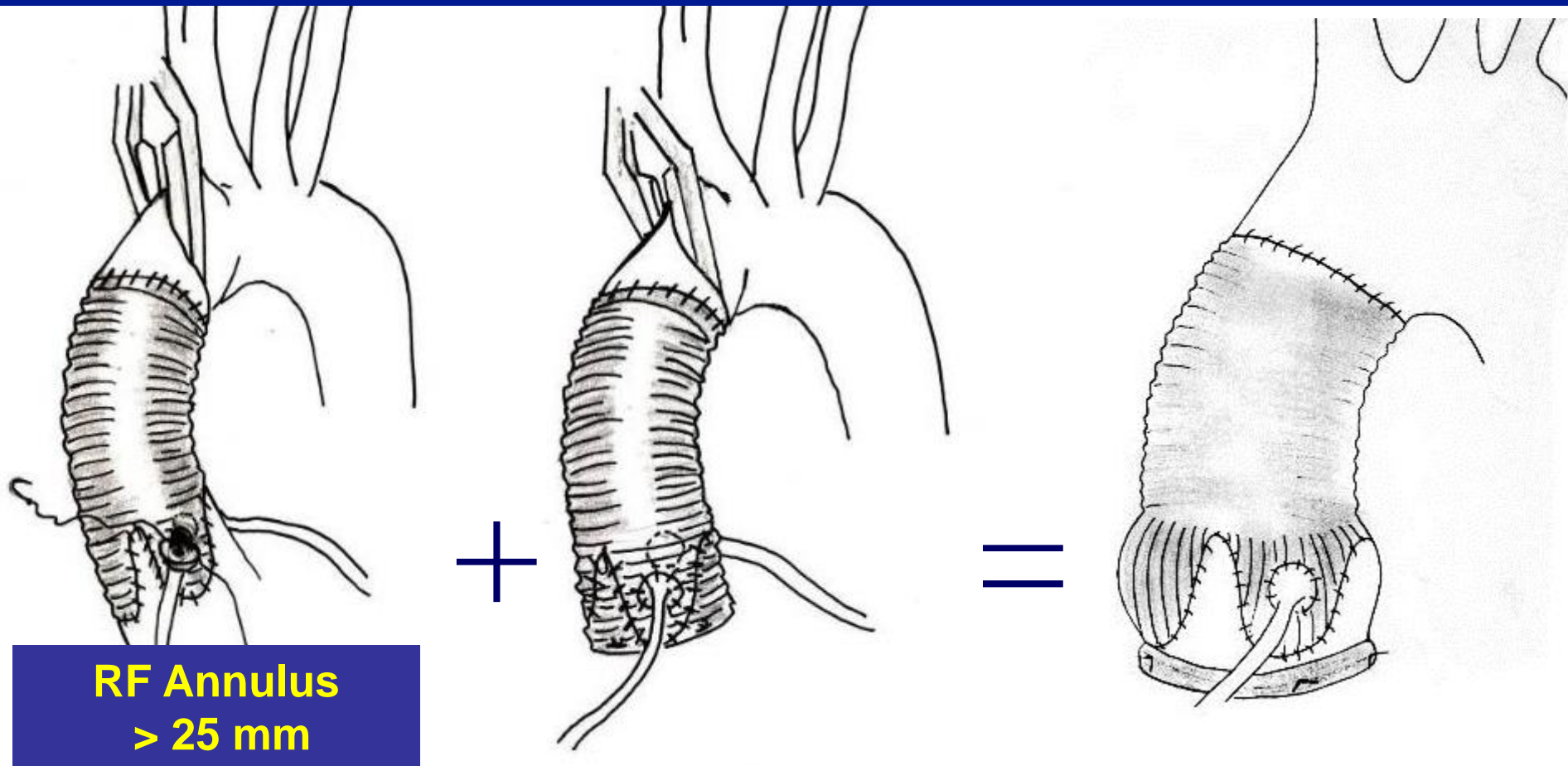
2014 ESC Guidelines on the diagnosis And treatment of aortic diseases

Aortic valve repair, using the re-implantation technique or remodelling with aortic annuloplasty, is recommended in young patients with aortic root dilation and tricuspid aortic valves.

I

C

Physiological and standardized approach to Valve Sparing Root Replacement



**RF Annulus
> 25 mm**

**Remodeling
1983 Yacoub**

**Reimplantation
1992 David**

**Remodeling +
Aortic annuloplasty
2003**

Reasons for valve sparing failures

Cusp prolapse

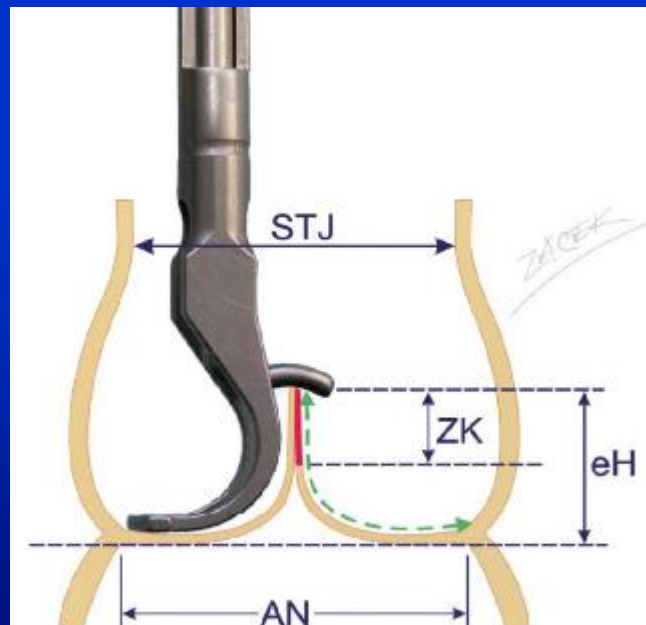
Remodeling /
Reimplantation

Reduction
of the STJ

Symmetrical
prolapse

↓ eH : - 3 to - 4 mm

Schäfers et al., JTCVS 2006



No eH assessment
(Eye balling repair)

Risk factor for
AI recurrence
Reoperation

Lansac JTCVS 2010

Soncini. MEP 2009

Bierbach E JTCVS 2010

Jeanmart ATS 2007

De Paulis 2010

Oka ATS 2011

Kunihara JTCVS 2011

Cusp eH assessment

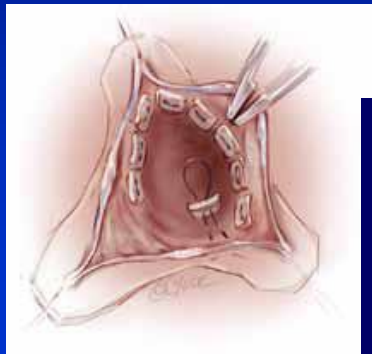
Marom JTCVS 2012

Zacek with permission

Remodeling + annuloplasty: advantages over Reimplantation?

Reimplantation

Remodeling + Ring



Highly Selected cases

6% of high risk patients
20 % of low risk patients

Caceres EJTCVS 2014

15% rate of VSRR Stable
Stamou JTCVS 2015

80 % of bentall for
dystrophic AR
Gaudino JTCVS 2015

How high do I place the annuloplasty ring?
How do I place the commissures?

Eye Balling
valve repair

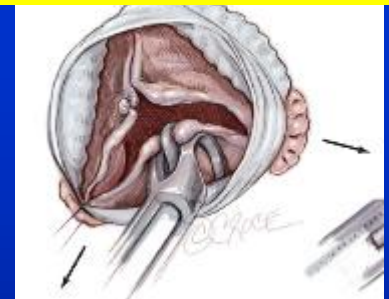
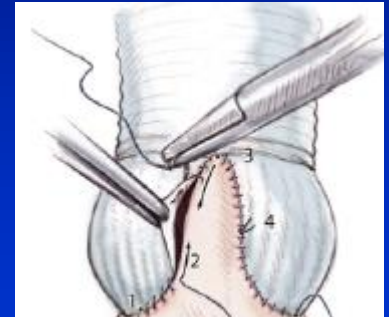
1) Leaflet length

2) Root

3 commissures at the same level
And symmetrical circumferentially

3) Leaflets eH

4) Annuloplasty



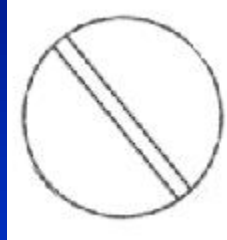
Standardize Valve repair
With a physiological root reconstruction

Aortic valve Tricuspid

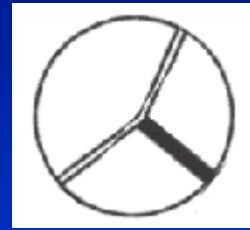


Bicuspid valve

Type 0
0 raphe

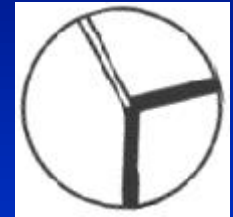


Type 1
1 raphe

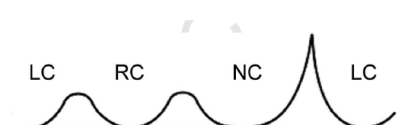
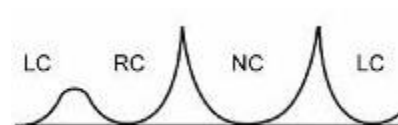
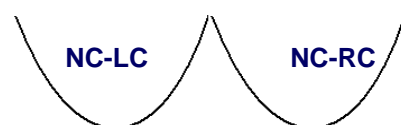
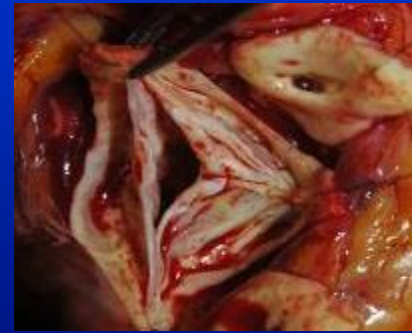
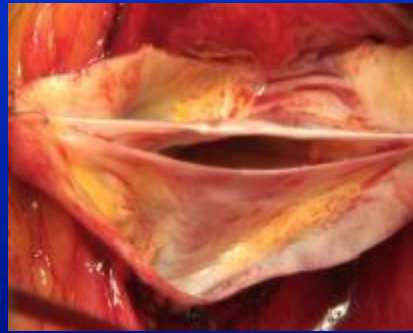
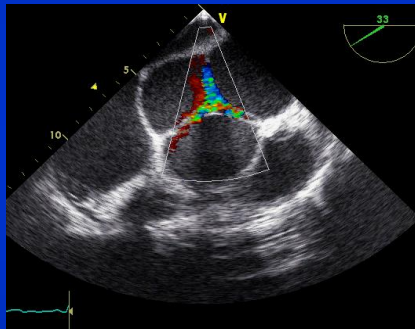


Unicuspid valve

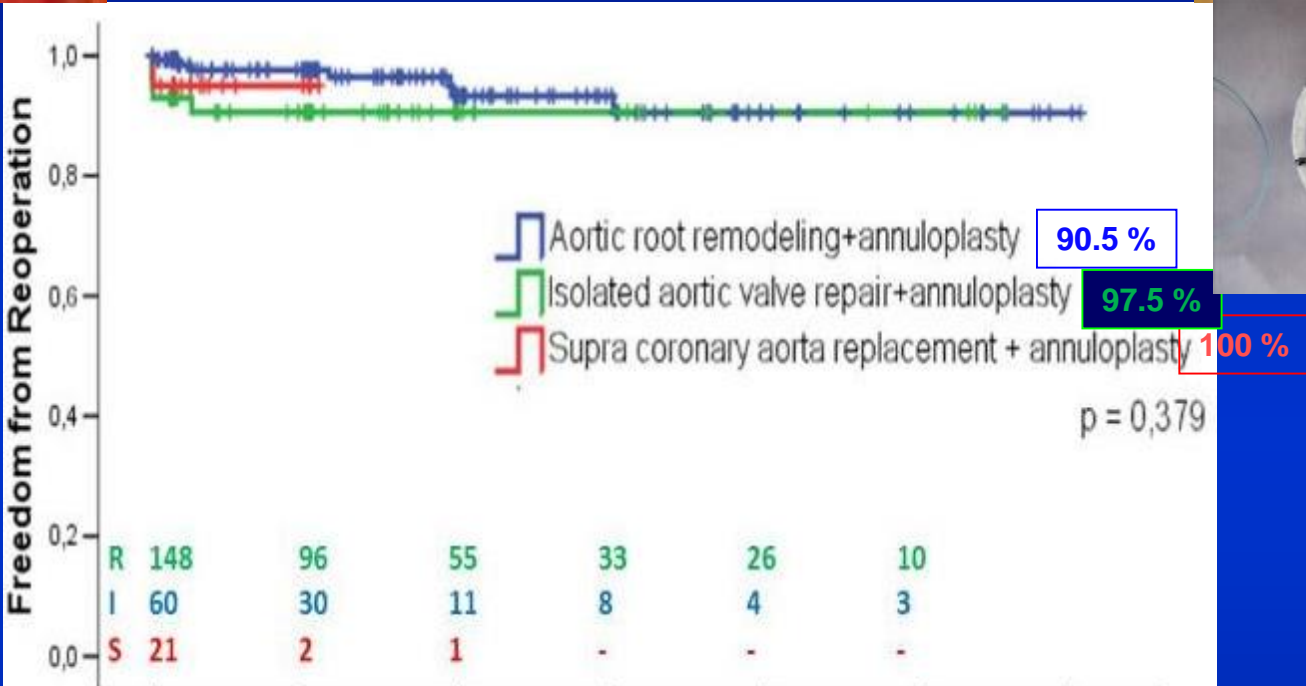
~~Type 2~~
2 raphes



Good candidates for repair



External annuloplasty ring 232 patients (2003 -2015)



92% Freedom from reoperation at 7 years similar among each phenotype with no difference between bicuspid and tricuspid valve

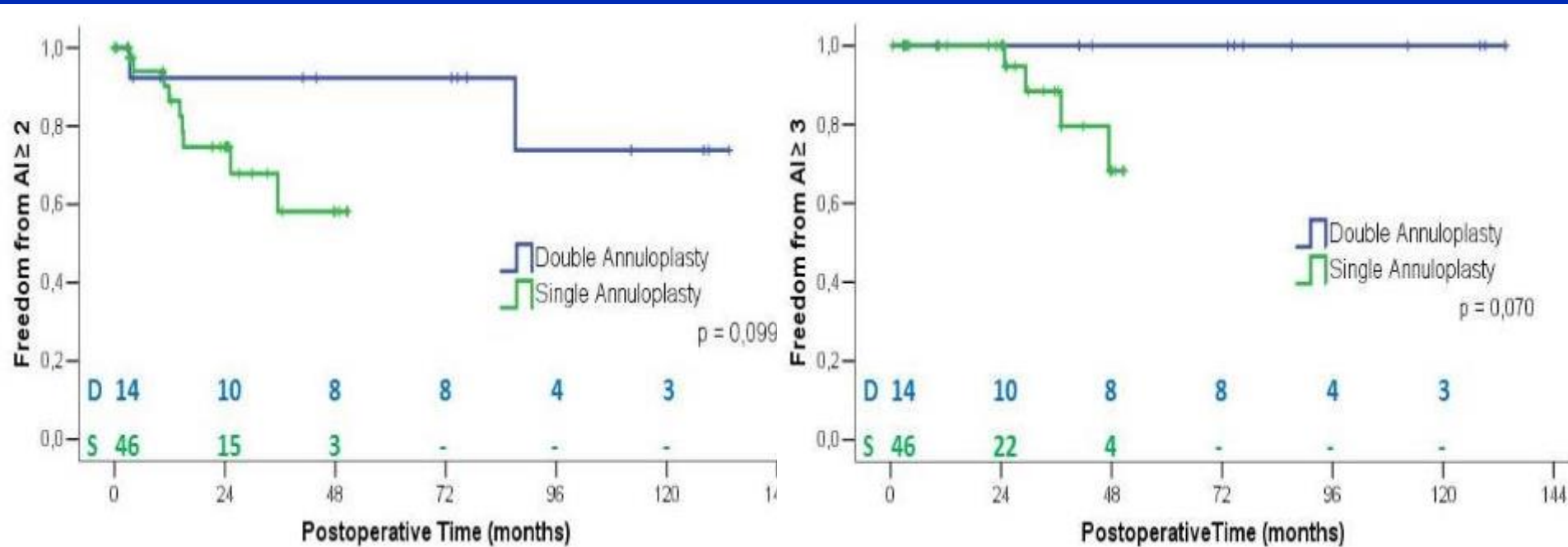
Since 2007, calibrated annuloplasty and systematic cusp effective height assessment improve freedom from reoperation up to 98.9%



Isolated AI repair+open aortic ring Single or double annuloplasty?

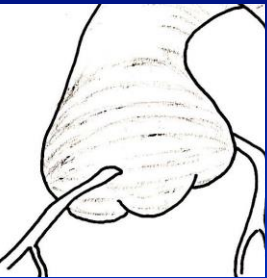


97.4 % Freedom from reoperation at 7 years



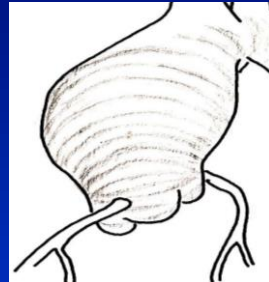
**Additional ring at STJ level (double sub and supra-valvular annuloplasty)
tend to reduce recurrent of AI
when compared to single subvalvular annuloplasty**

Pliable bicuspid and tricuspid valves



Aortic root aneurysm

Valsalva ≥ 45 mm



Supra-coronary aneurysm

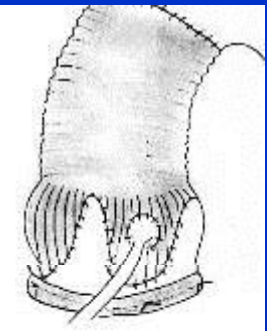
Valsalva < 40 mm



Isolated AI

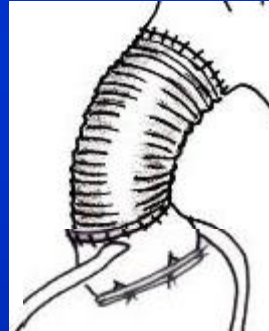
all $\emptyset < 40$ mm

Standardized approach according to phenotypes



Remodeling

+ subvalvular annuloplasty



Supra-coronary graft

+ subvalvular annuloplasty
(annulus > 25 mm)



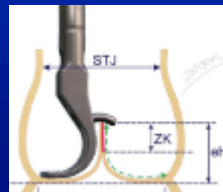
Supra-valvular annuloplasty
(STJ > 35 mm)

Subvalvular annuloplasty
(annulus > 25 mm)

Cusp repair



Alignment of the cusp free edges



Resuspension of cusp effective height

+



Subvalvular external aortic annuloplasty





Open Prospective International Multicenter Registry

**Isolated AI and/or ascending aorta aneurysm
Candidates for Aortic valve repair / sparing**

Surgical indication

No

Yes

Medical Registry
(In process)

Surgical Registry
Aortic valve Repair / sparing and Replacement

Evaluation of the Guidelines

Evaluation of the results