



Reconstruction of the Aortic Valve and Root A practical approach

How to start an aortic valve repair program?

Carlos Porras

Hospital Universitario Virgen de la Victoria. Málaga, Spain

Hospital Vithas Xánit Internacional. Málaga, Spain



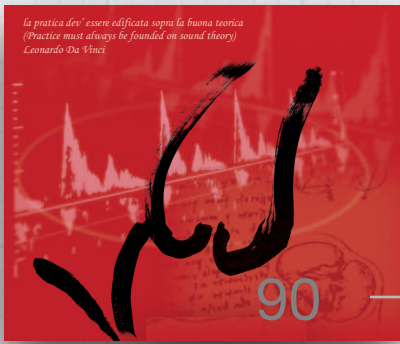
Reconstruction of the Aortic Valve and Root A practical approach

November 2008

176 pts

Sep 2015





Reconstruction of the Aortic Valve and Root A practical approach



Combined surgery (25/176 - 14,2%)

BAVs 45 UAVs 6 ADA 7 Marfan 16



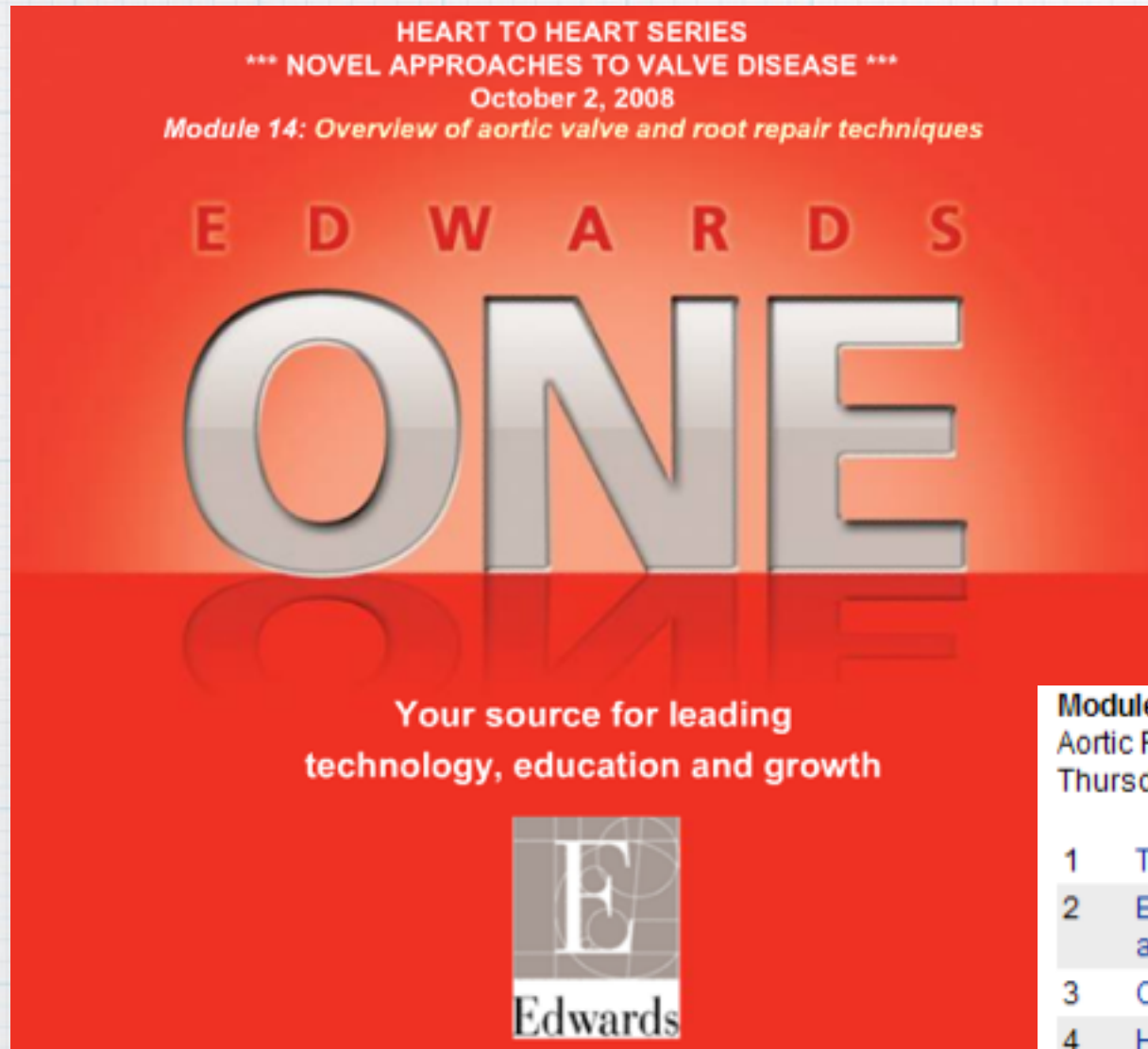
Reconstruction of the Aortic Valve and Root A practical approach



**THE KEY TO SUCCESS IS TO BE AT THE
RIGHT PLACE AT THE RIGHT TIME, AND
READY**
And frequently is fortuitous



Reconstruction of the Aortic Valve and Root A practical approach



Module 14
Aortic Regurgitation: Guidelines, Timing, Repair
Thursday, October 2nd, 2008

1	Timing of surgery in asymptomatic AR	Raphael Rosenhek
2	Echo assessment of feasibility of aortic valve repair: the functional approach	Alain Berrebi
3	Overview of aortic valve and root repair techniques	H.-J. Shafers
4	How to sessions prolapse, bicuspid, endocarditis	G. El Khoury
5	Surgical techniques and results in aortic conduit surgery	Roberto Di Bartolomeo
6	Ross, Homografts: indications and results	Alain Serraf



Reconstruction of the Aortic Valve and Root A practical approach





Recon
A prac

Reconstruction of the Aortic Valve and Root: A Practical Approach

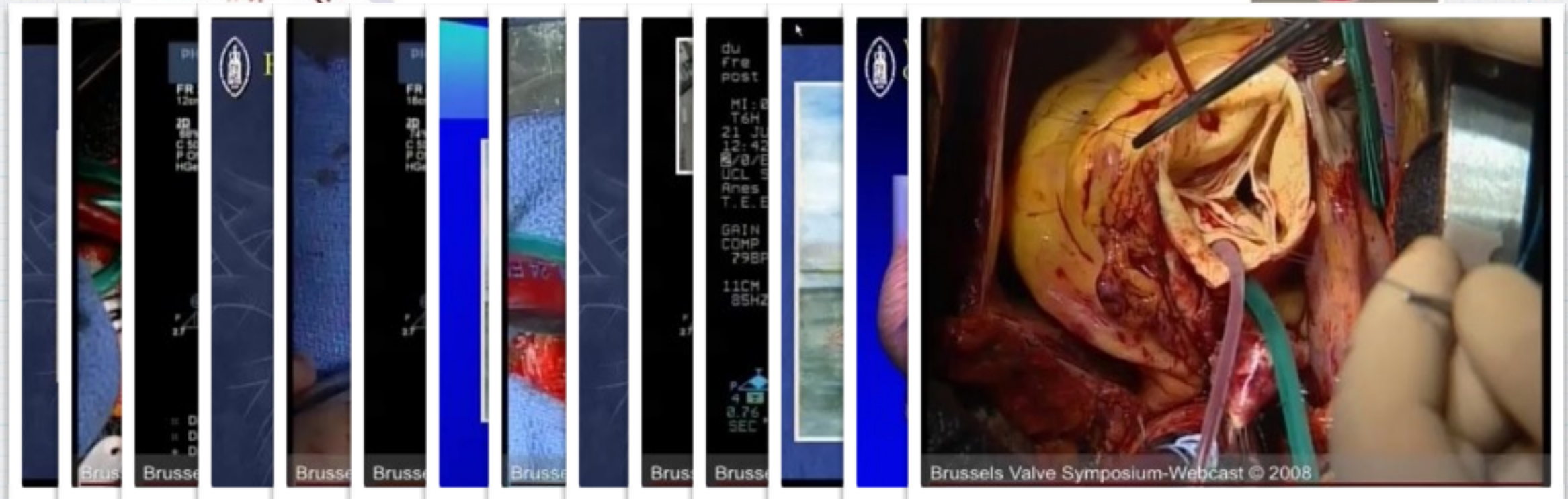
Module 2:

Aortic Root Repair (2 Days)
November 6th / 7th, 2008





Reconstruction of the Aortic Valve and Root A practical approach





valve symposium 9th Symposium on Aortic and Mitral Reconstructive Surgery
May 29 - 30, 2009 / Brussels - Belgium
Surgical Techniques


INVITATION April 7-8, 2011
AORTIC VALVE REPAIR :
A STEP BY STEP APPROACH



Dear Colleagues,
 We are pleased to invite you to this two day session. Program will focus on interactive lectures from international faculty, enriched with live and video cases. Aim of the session is to propose a standardized management of dystrophic aortic roots, from echo analysis to a physiological approach, in aortic valve repair. We look forward to seeing you.

Recon
A prac

**Reconstruction of the Aortic Valve and Root:
 A Practical Approach**



Module 2: Aortic Root Repair
 University Hospital of Saarland
 Homburg/Saar, Germany
 September 9th/10th, 2010



**Reconstruction of the Aortic Valve and Root
 A practical approach**

Wednesday, June 8th to Friday, June 10th, 2011
 Location
 University Hospital of Saarland, Homburg/Saar, Germany
 Chairman
 Prof. Hans-Joachim Schäfers





June 25 - 26, 2010
 Live surgery transmission / Video presentation
 Case discussions

May 2010

@docporras
docporras@gmail.com

“How to start an aortic valve repair program”



What do you need?

Reconstruction of the Aortic Valve and Root
A practical approach

Commitment

Trust

Sweat

Study

Team work

Learn from the experts

Luck

Look for a Proctor!!!



Reconstruction of the Aortic Valve and Root A practical approach

Team Play

Clinical cardiologists

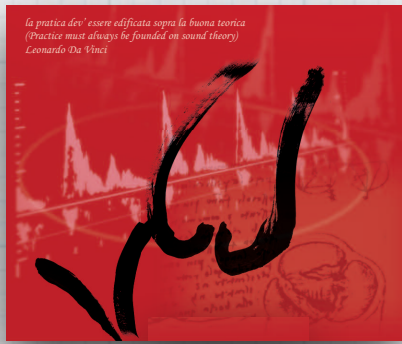
Image Cardiologists

BAV clinic

Marfan clinic

Surgeons

Anesthesiologists



Important issues

Reconstruction of the Aortic Valve and Root
A practical approach

Should the patient be repaired?

Can the valve be repaired?



Important issues

Reconstruction of the Aortic Valve and Root
A practical approach

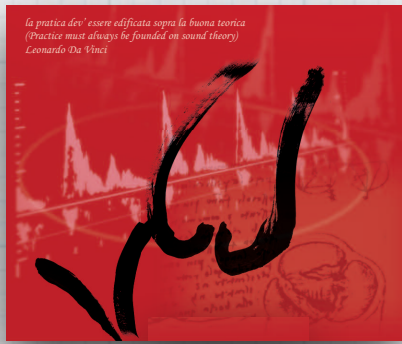
Should the Patient be repaired?

Good LV

Young

No serious comorbidities

Isolated procedures



Important issues

Reconstruction of the Aortic Valve and Root
A practical approach

Can the Valve be repaired?

Tissue quality

Calcium

Rheumatic disease



Important issues

Reconstruction of the Aortic Valve and Root
A practical approach

Can the Valve be repaired?



BAV
Aneurysm
Leaflet prolapse
Acute dissection
Autograft failure
Endocarditis



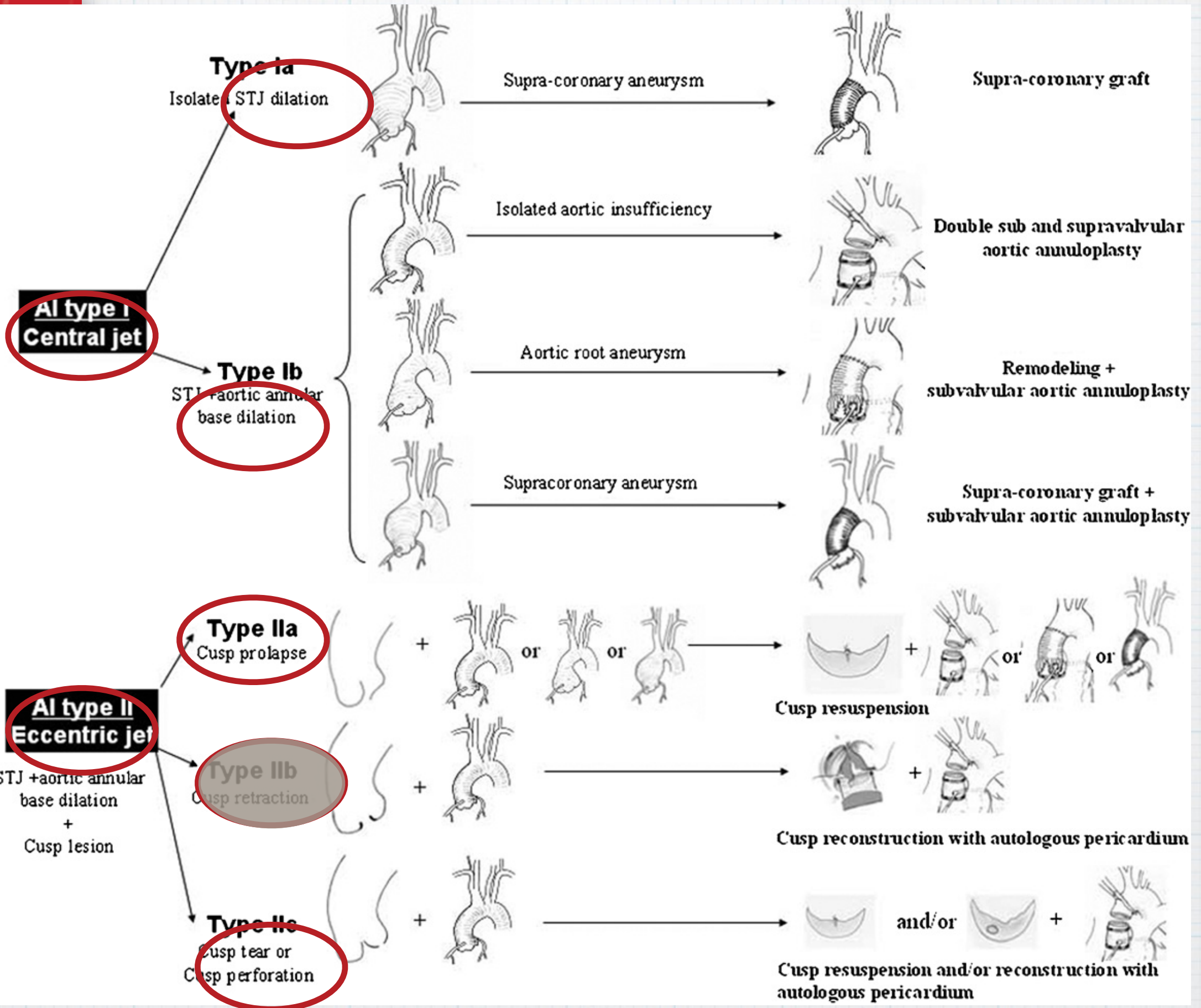
Important issues

Reconstruction of the Aortic Valve and Root
A practical approach

Can the Valve be repaired?

AI Class	Type I Normal cusp motion with F/A dilatation or cusp perforation				Type II Cusp Prolapse	Type III Cusp Restriction
	Ia	Ib	Ic	Id		
Mechanism						
Repair Techniques (Primary)	STJ remodeling <i>Ascending aortic graft</i>	Aortic Valve sparing: <i>Reimplantation or Remodeling with SCA</i>	SCA	Patch Repair <i>Autologous or bovine pericardium</i>	Prolapse Repair <i>Plication Triangular resection Free margin Resuspension Patch</i>	Leaflet Repair <i>Shaving Decalcification Patch</i>
(Secondary)	SCA		STJ Annuloplasty	SCA	SCA	SCA

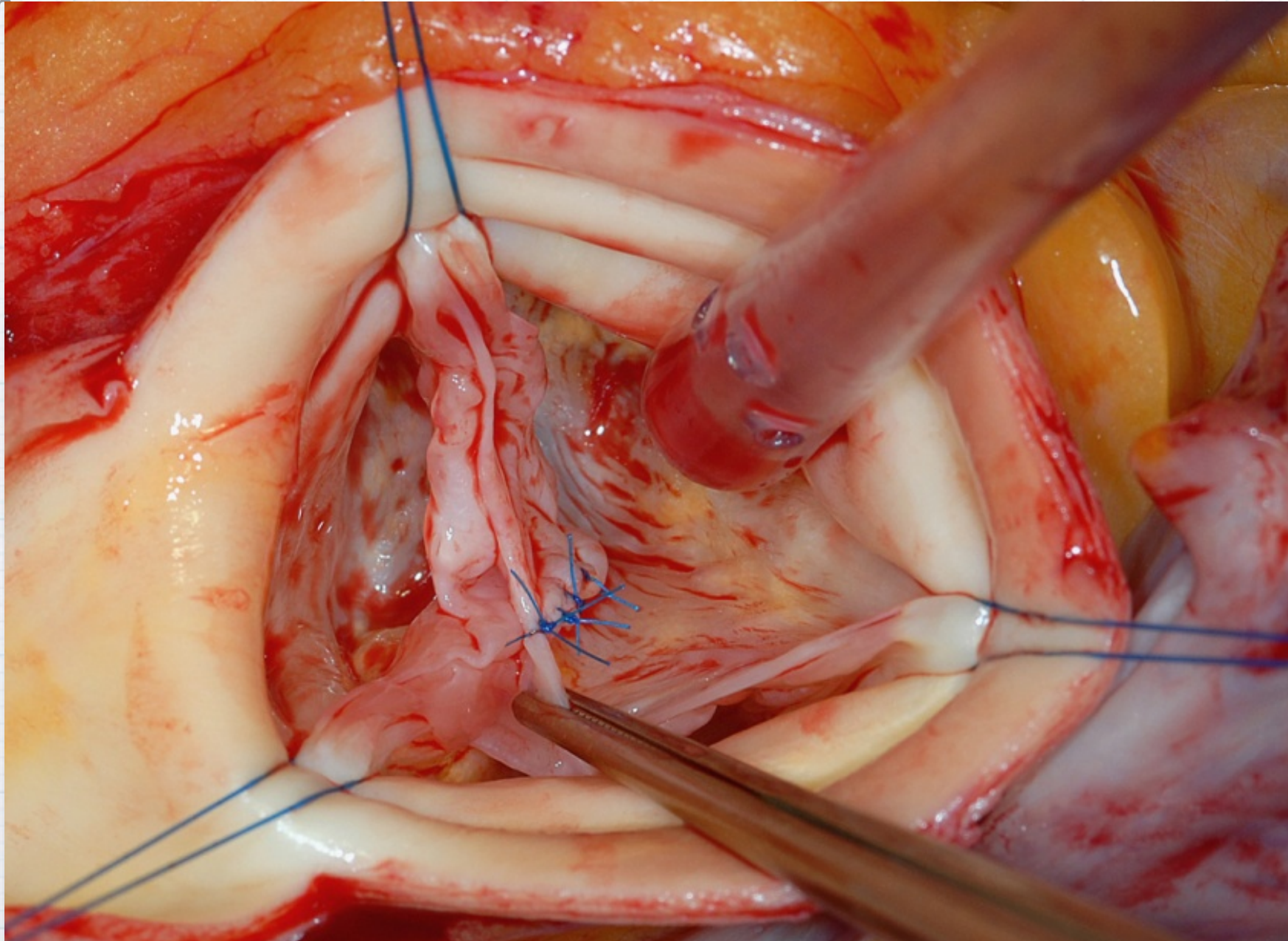
Reconstruct
A practical a





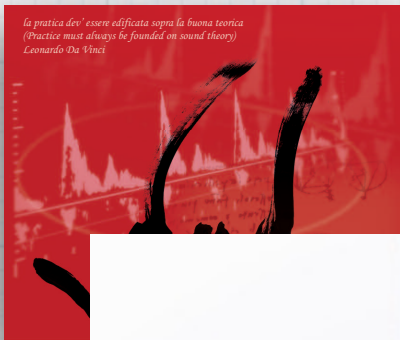
Technical Pitfalls for Beginners

Reconstruction of the Aortic Valve and Root
A practical approach

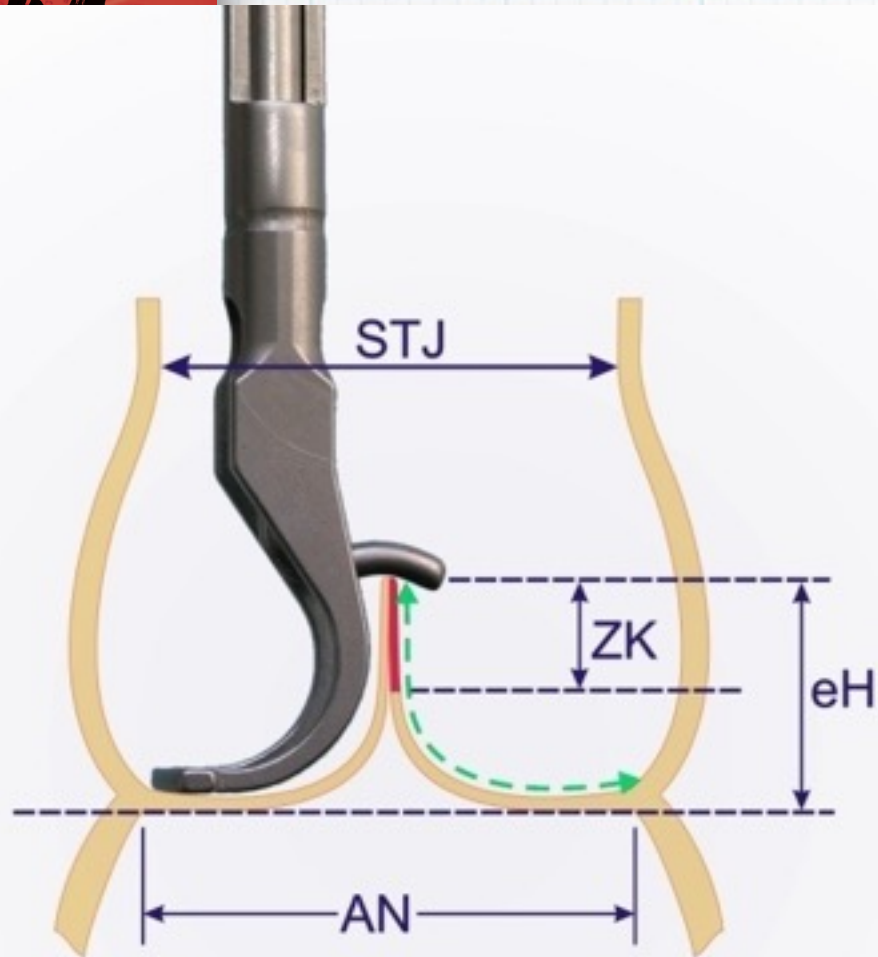


@docporras
docporras@gmail.com

“How to start an aortic valve repair program”

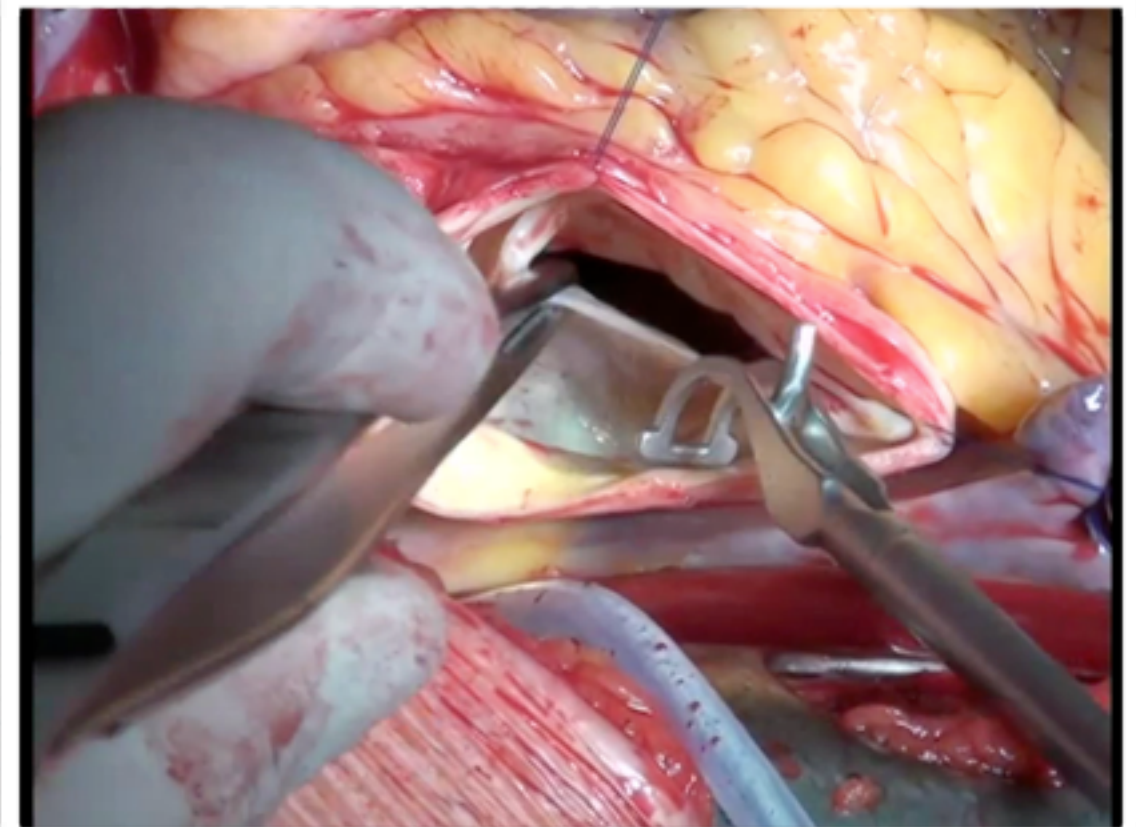


Recon
A prac



Control group.

	Adults, n = 100
Age (years)	33.8 ± 14 (19–76)
Body height (m)	1.75 ± 0.09 (1.5–2)
Body weight (kg)	71.9 ± 12.6 (42–105)
Body surface area (m ²)	1.87 ± 0.2 (1.35–2.4)
Effective height (mm)	9.5 ± 1.4 (7–12)
Aortoventricular diameter (mm)	21 ± 2.8 (13.5–30.6)
Sinus Valsalva diameter (mm)	28.5 ± 3.5 (21.1–40)
Sinotubular junction (mm)	25 ± 3.7 (16–36.6)
Sinus height (mm)	22.4 ± 4.2 (33.9)



Bierbach et al. / Eur J Cardiothorac Surg 38 (2010) 400-406



Reconstruction of the Aortic Valve and Root A practical approach

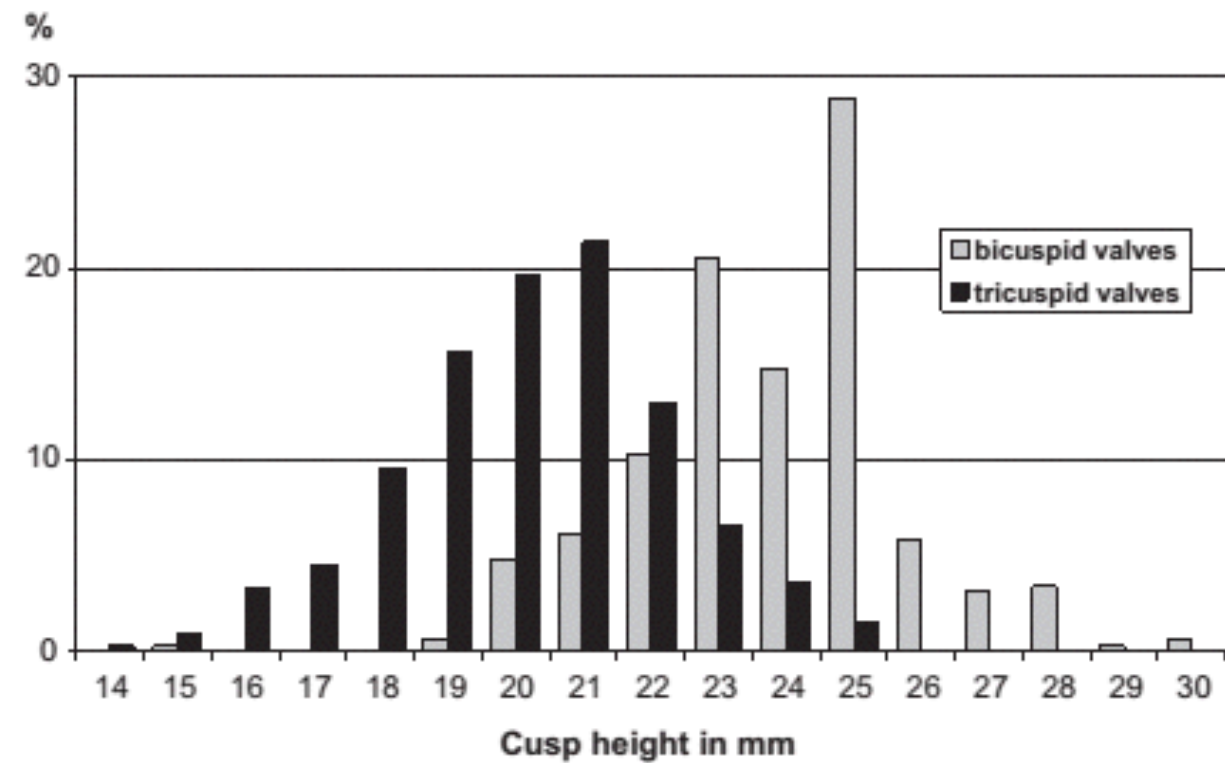
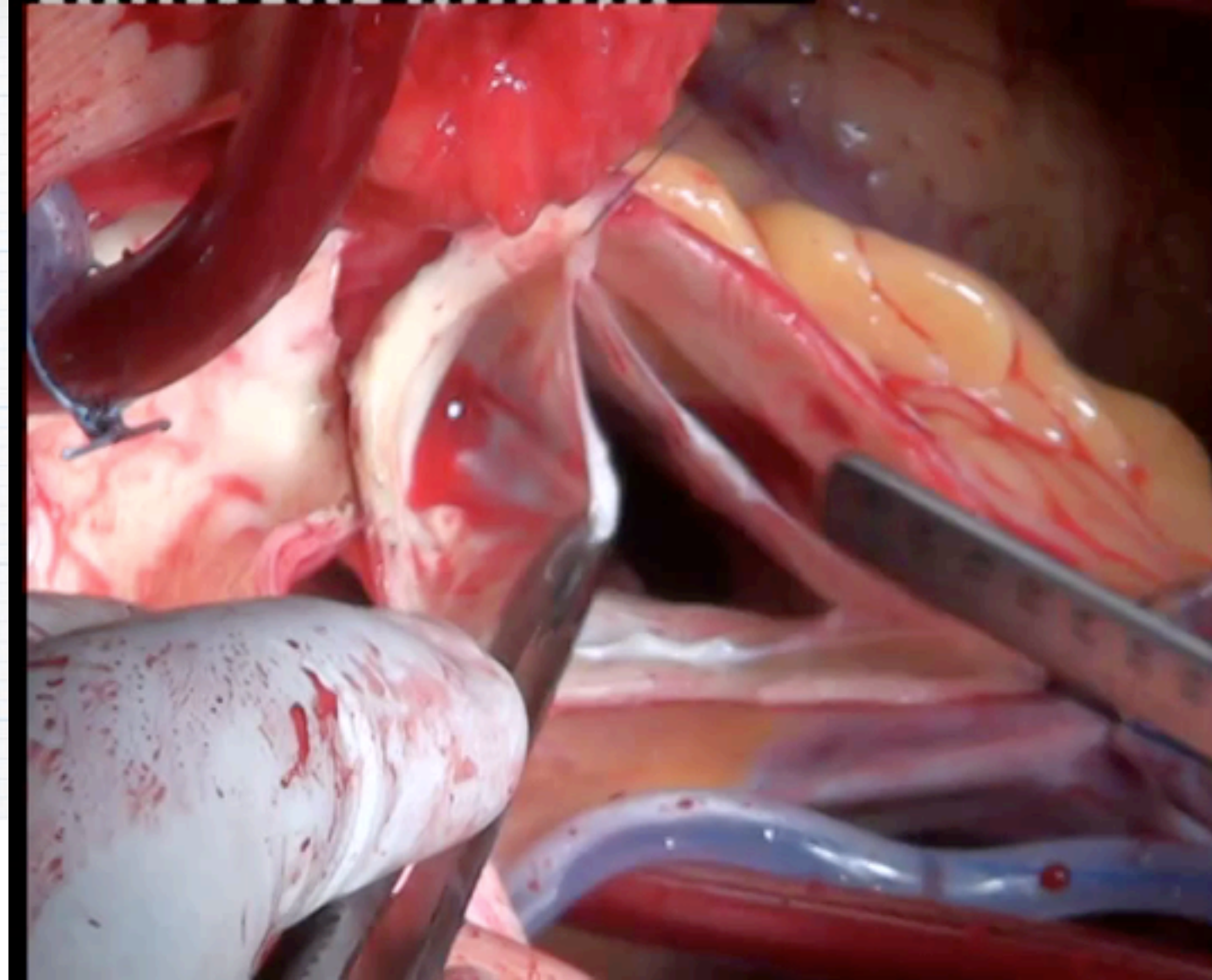


FIGURE 3. Distribution of geometric height in bicuspid (n = 289; nonfused cusps) and tricuspid (n = 332; mean of all 3 cusps) aortic valves.

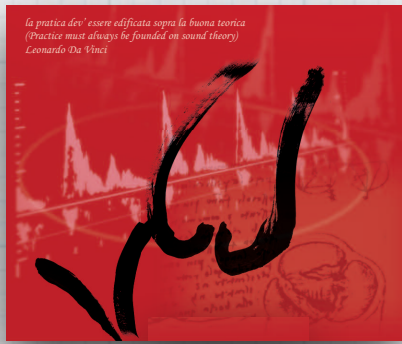
@docporras

docporras@gmail.com

“From the results of our measurements, we have arbitrarily defined retraction in the adult as a cusp height of **16 mm** or less in TAVs and **19 mm** or less in the BAVs”

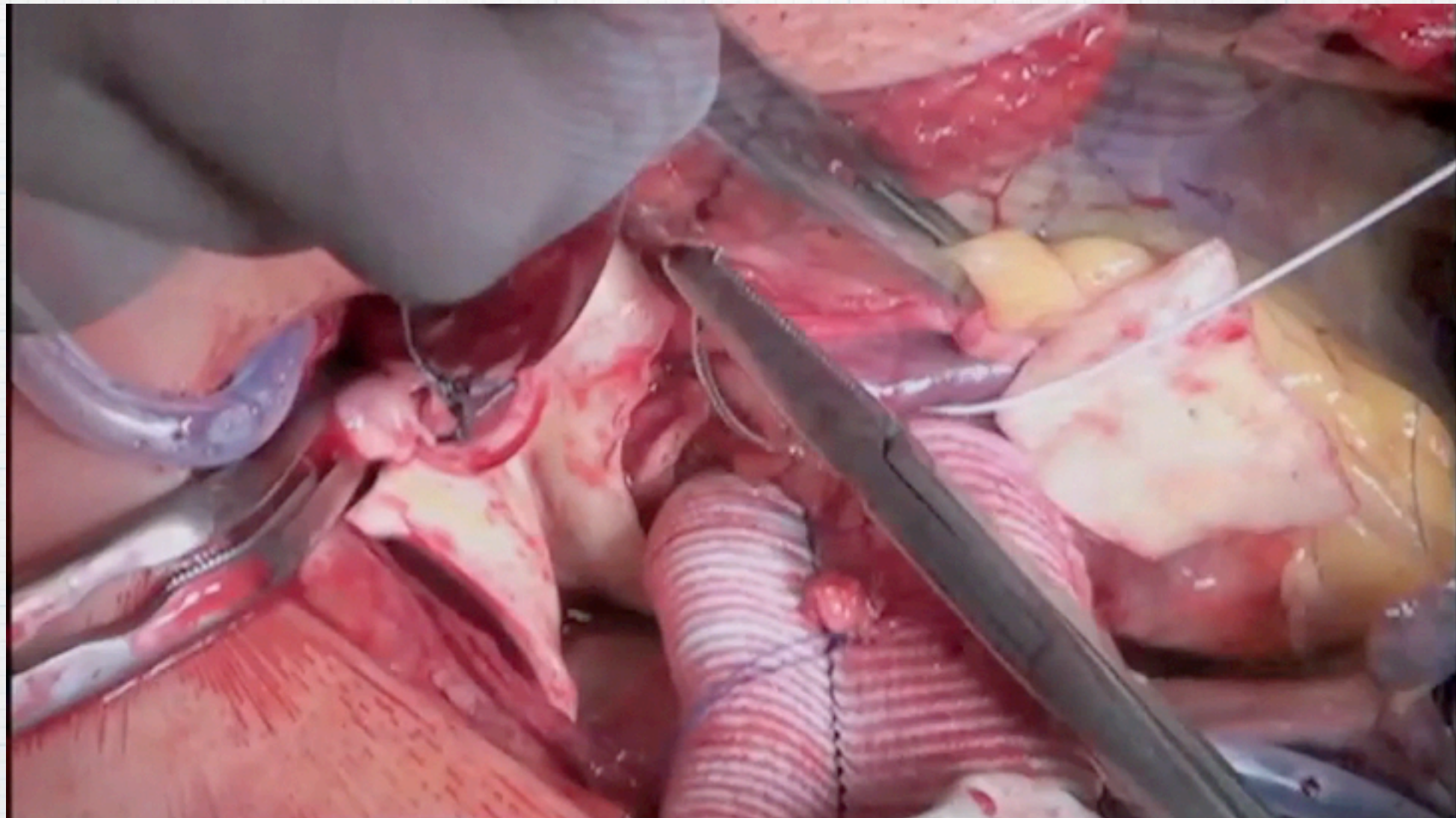
Schäfers et al. / J Thorac Cardiovasc Surg 146 (2013) 269-274

“How to start an aortic valve repair program”



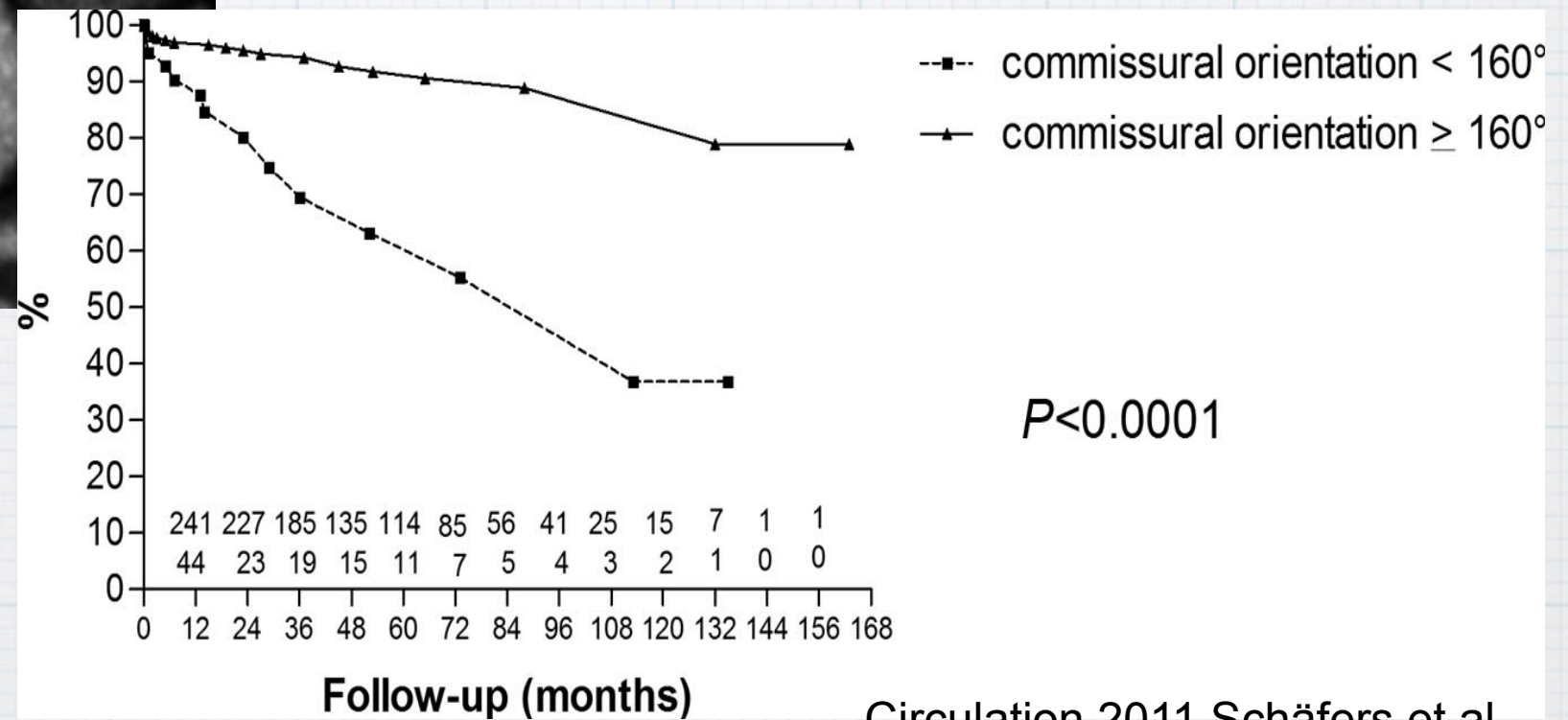
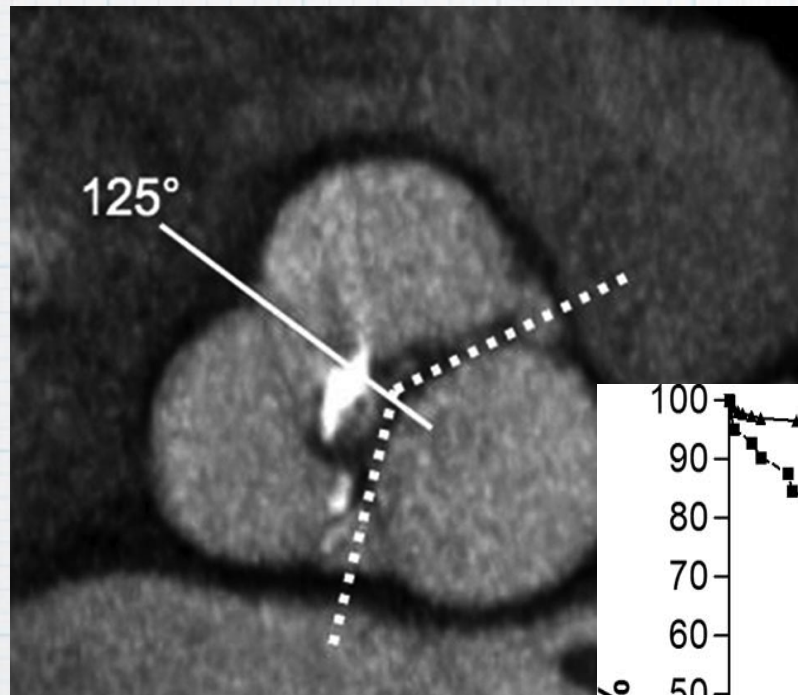
Don't forget the Annulus!!!

Reconstruction of the Aortic Valve and Root
A practical approach

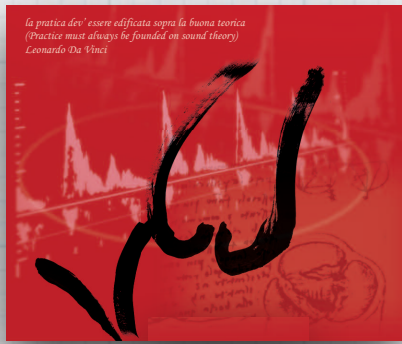




Reconstruction of the Aortic Valve and Root A practical approach

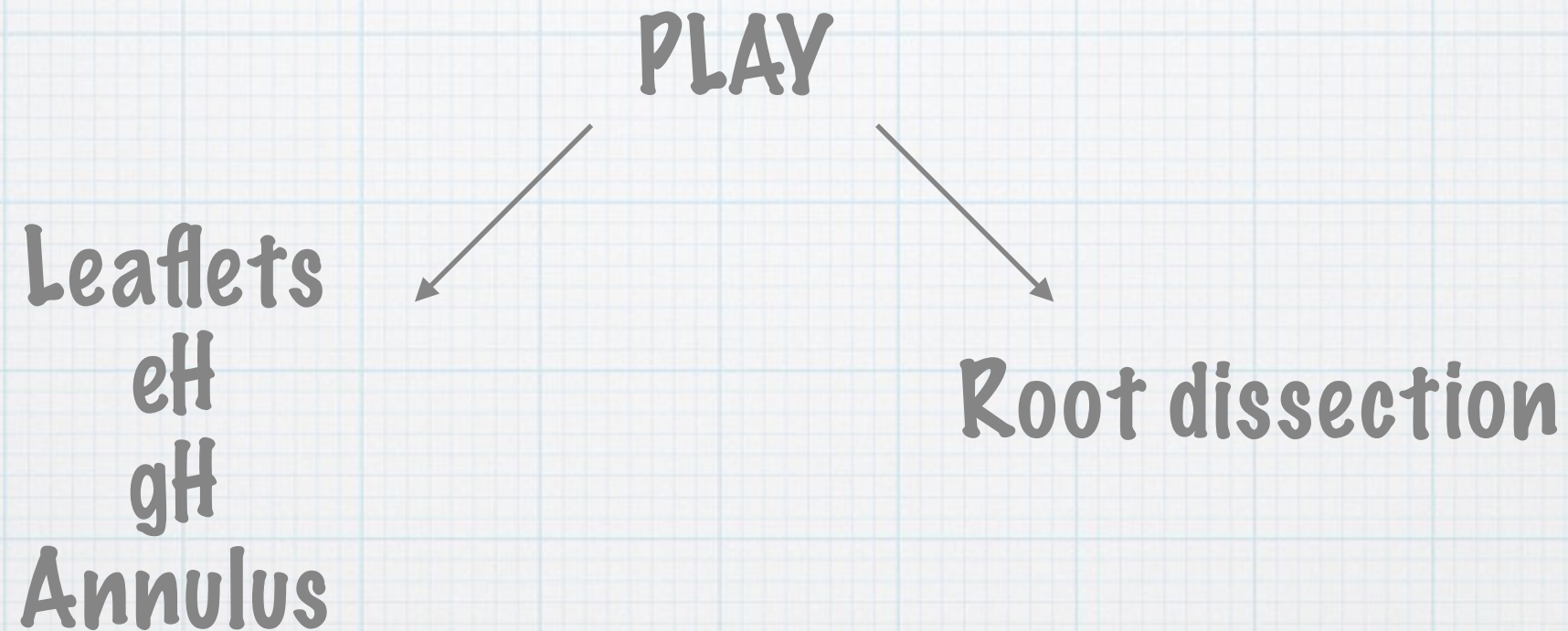


Circulation 2011 Schäfers et al

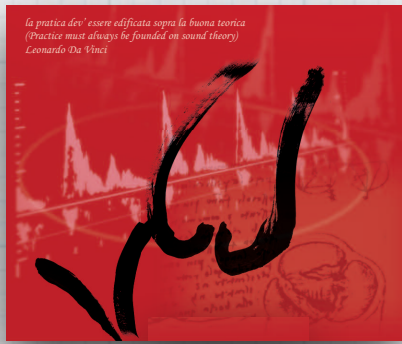


What to do first?

Reconstruction of the Aortic Valve and Root
A practical approach



Look at the valve & the root



Which valves first?

Reconstruction of the Aortic Valve and Root
A practical approach

Bicuspid valves

Isolated

+ supra replacement

Remodelling



And after the BAVs?

Reconstruction of the Aortic Valve and Root
A practical approach

+ supra replacement

Tricuspid valves

Remodelling

Isolated



And what else?

Reconstruction of the Aortic Valve and Root
A practical approach

Unicuspid valves

Isolated

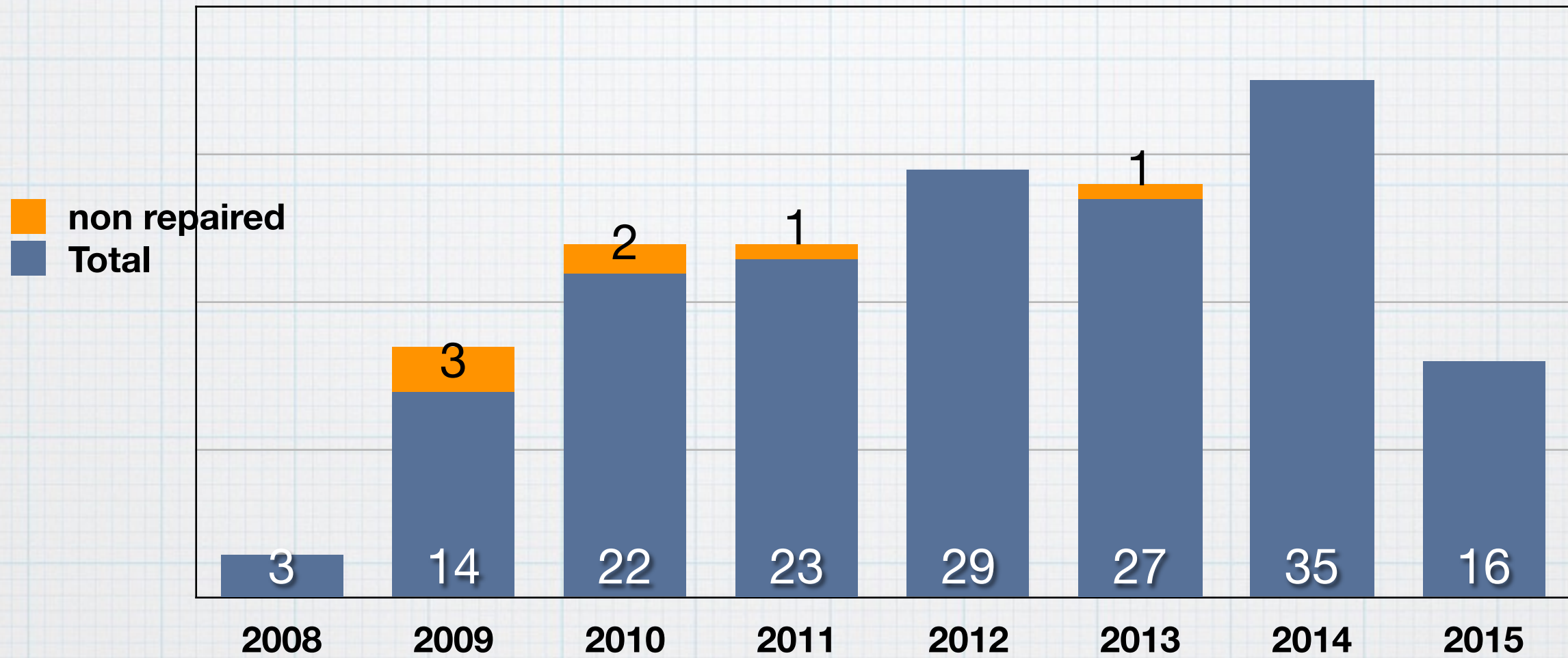
+ supra replacement

Remodelling



2009: 1 de las prótesis es Félix Serrano (endocarditis)

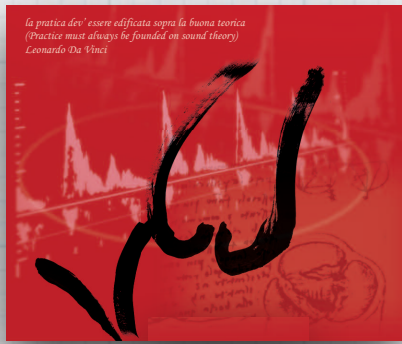
Reconstruction of the Aortic Valve and Root A practical approach



Conversion to prosthesis 7 - 5% <04/2011 6 - 14,7%

>04/2011 1 - 0,95%

p<0,001



Our Failures - Why?

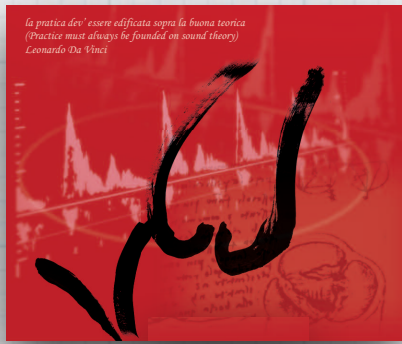
Reconstruction of the Aortic Valve and Root
A practical approach

Technical mistakes

No caliper

Lack of gH concept

Lack of expertise

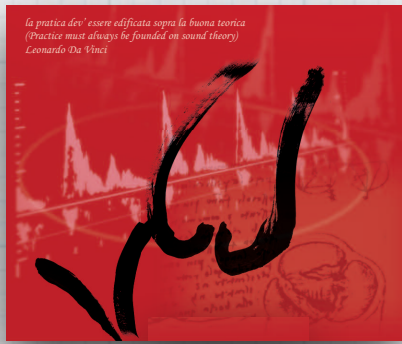


Our Redos - Why?

Reconstruction of the Aortic Valve and Root
A practical approach

Suture disruption (BAV) x 3 - Hypertension

Restrictive pathology (aH) x 3



CONCLUSIONS - the key to success

Reconstruction of the Aortic Valve and Root
A practical approach

You don't need to be a super-surgeon

You have to study, travel, be committed

This is a Team effort

Look for a Proctor





Reconstruction of the Aortic Valve and Root A practical approach

If I can do it
Thank you very much
you can do it!!!!