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# Mitraalklepchirurgie voor hartfalen

CNE 22 januari 2019

## Sterfte aan hartfalen 2017

In 2017 overleden 7.689 personen als gevolg van hartfalen, 3.180 mannen en 4.509 vrouwen (37,4 per 100.000 mannen en 52,3 per 100.000 vrouwen). De sterfte neemt sterk toe met de leeftijd en in elke leeftijdscategorie overlijden relatief meer mannen dan vrouwen. Echter, omdat er veel meer oudere vrouwen zijn, stierven er totaal in 2017 meer vrouwen als gevolg van hartfalen dan mannen.

Verwacht wordt dat de prevalentie van hartfalen verder zal toenemen door veroudering van de bevolking en dankzij de succesvolle behandeling van coronaire hartziekte. Per jaar komen er ongeveer 39.000 nieuwe patiënten met hartfalen bij



# Functionele mitraalklepinsufficiëntie

Probleem van de linker ventrikel. De klepslippen zijn normaal

- Annulus dilatatie
- Ischaemische cardiomyopathie
- Non-ischaemische cardiomyopathie

# Functionele MI

Aanwezigheid van mitraalklepinsufficiëntie na een myocardinfarct en bij patienten met hartfalen heeft een slechte prognose

- hogere mortaliteit

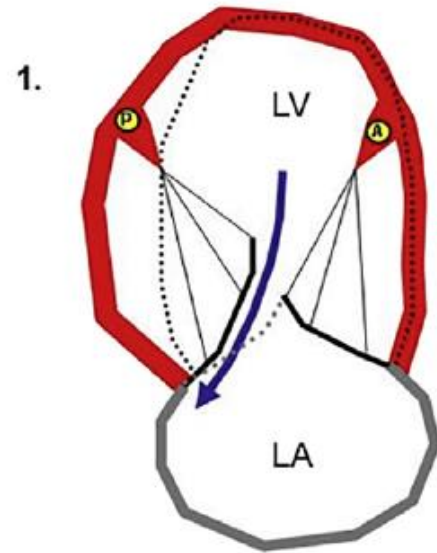
  - Matige MI ~ 5 jaars overleving 49%

  - Ernstige MI ~ 5 jaars overleving 29%

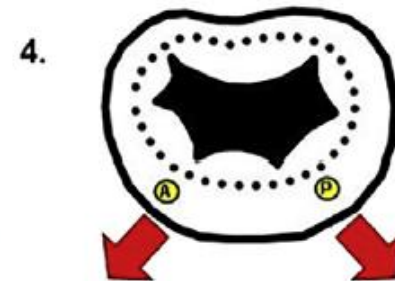
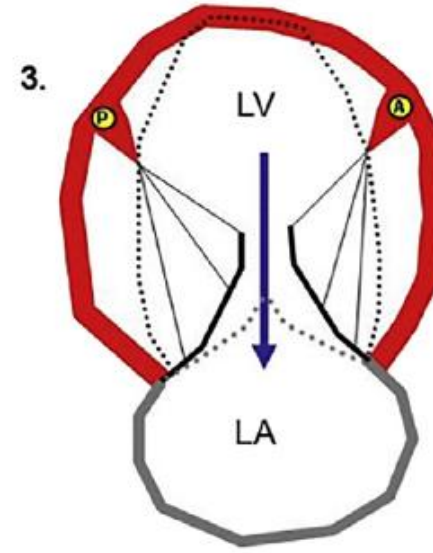
- meer heropnames

- meer en ernstiger symptomen van hartfalen

## Asymmetric



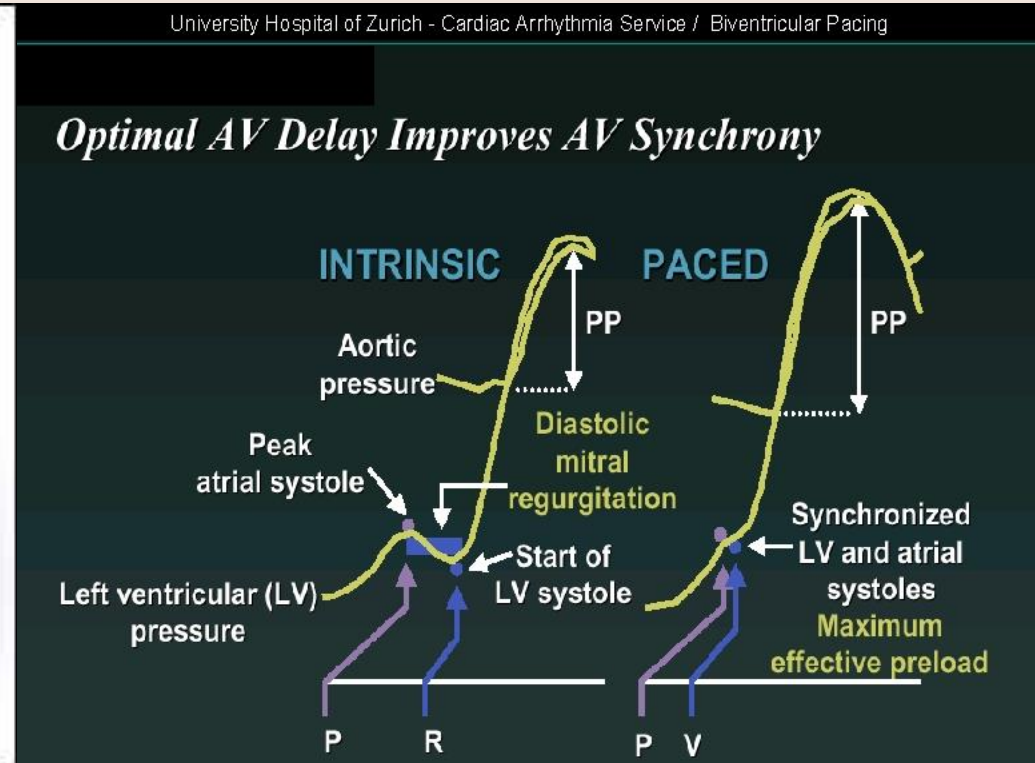
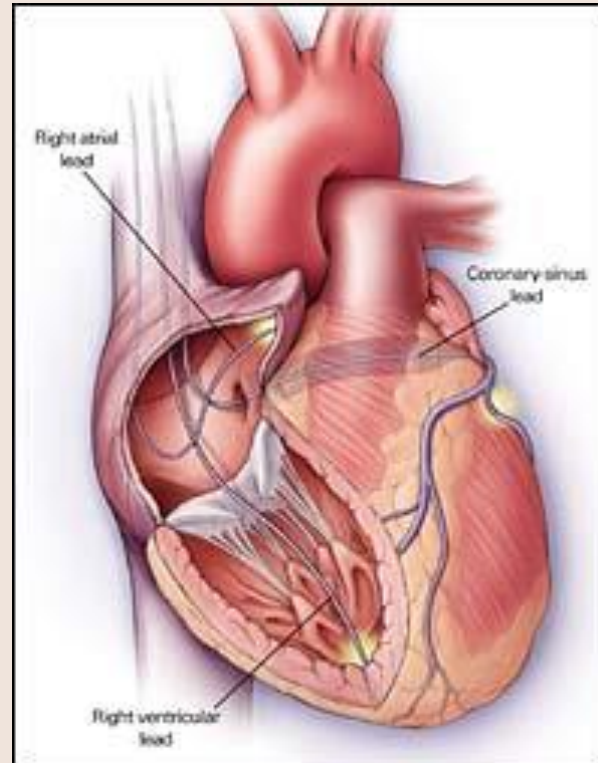
## Symmetric



# Behandeling

1. Medicatie (diuretica,  $\beta$  blockers, ACE remmers, spironolacton)

2. CRT



# Chirurgische behandeling

Idealiter:  
herstel competente klep



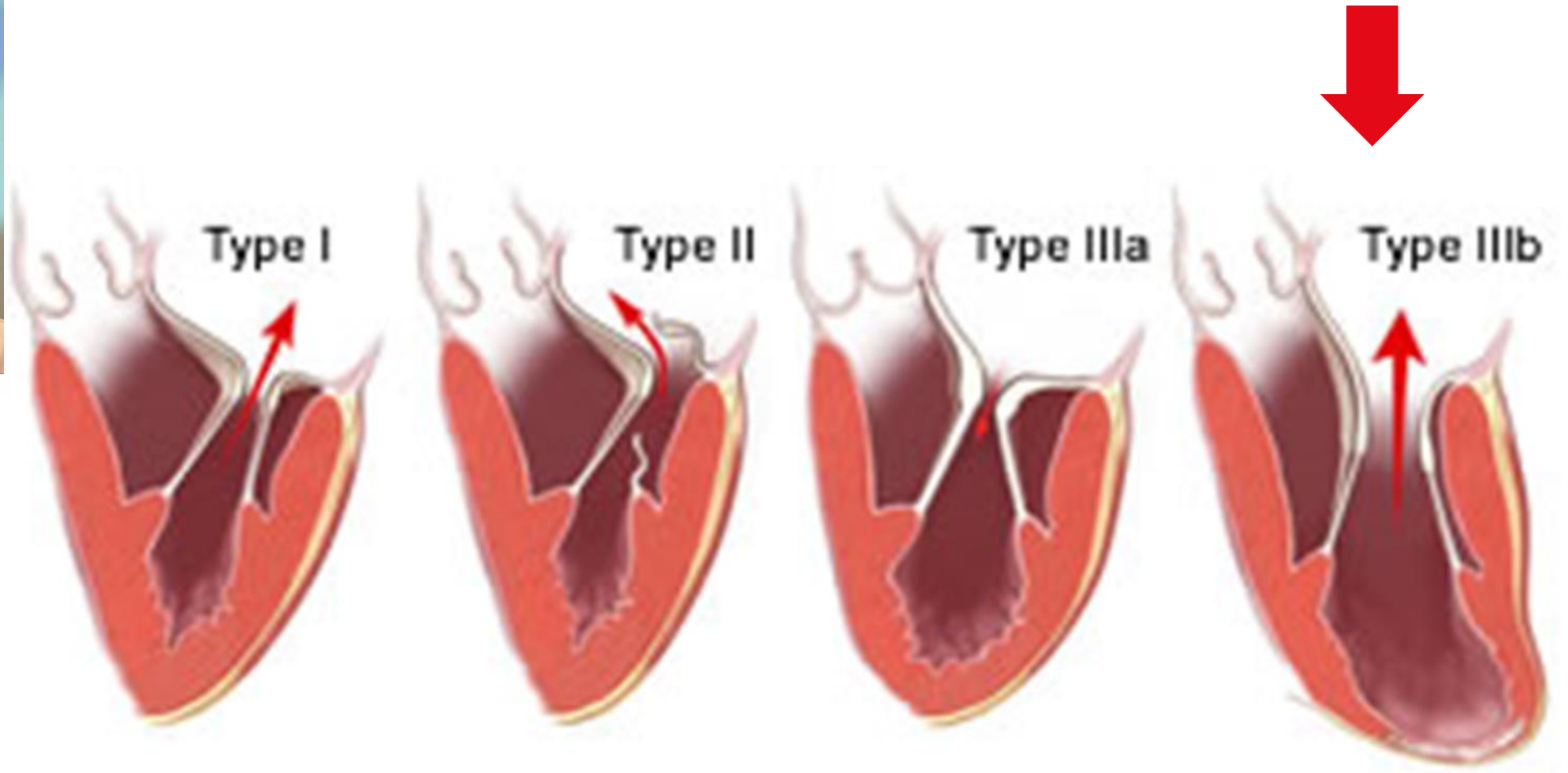
Stoppen of (liefst) omkeren van de remodeling en dysfunctie van de LV

Dus: benaderen ventrikelprobleem net zo belangrijk als herstel van de competentie van de mitraalklep!

Maar.....

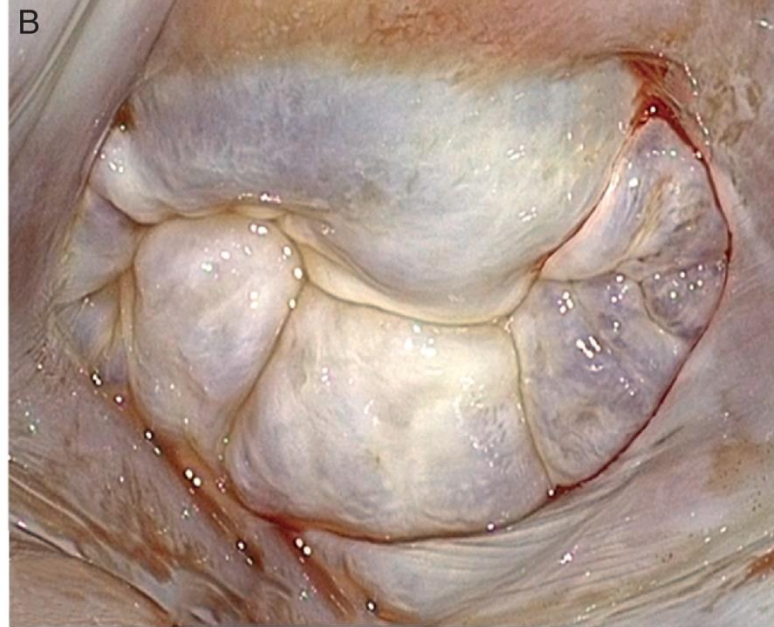
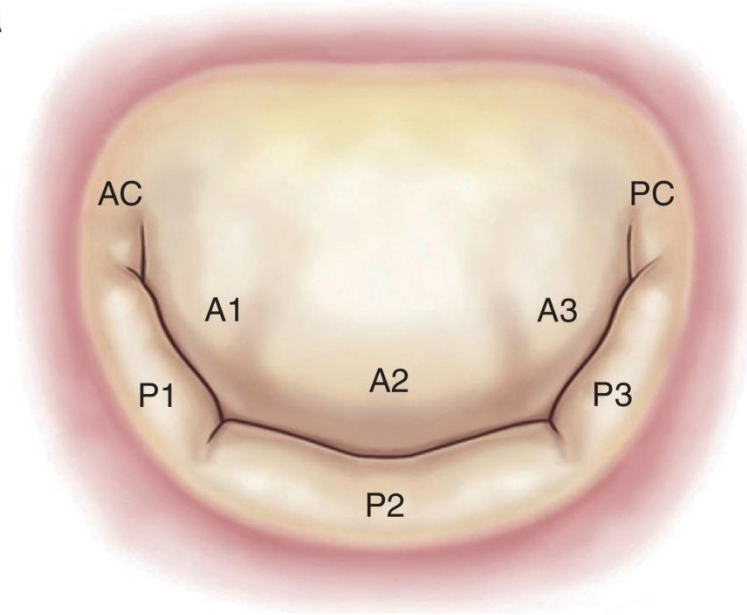


Alain Carpentier

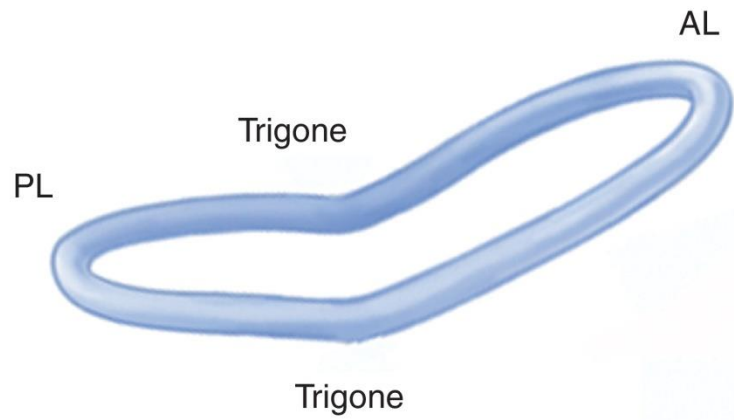




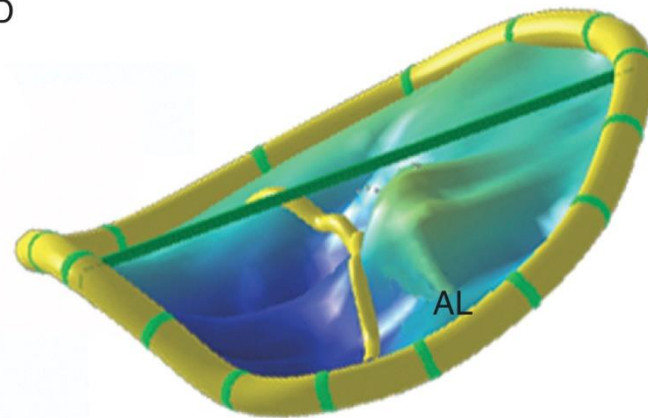
A



C

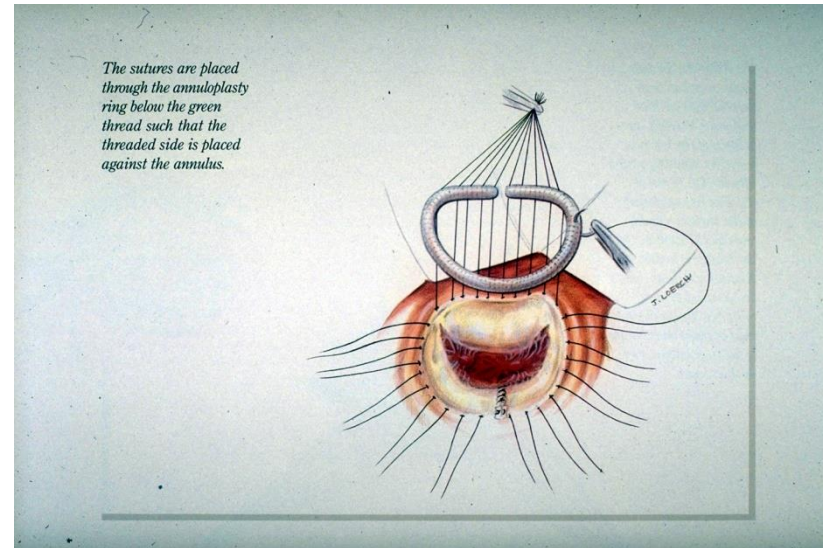
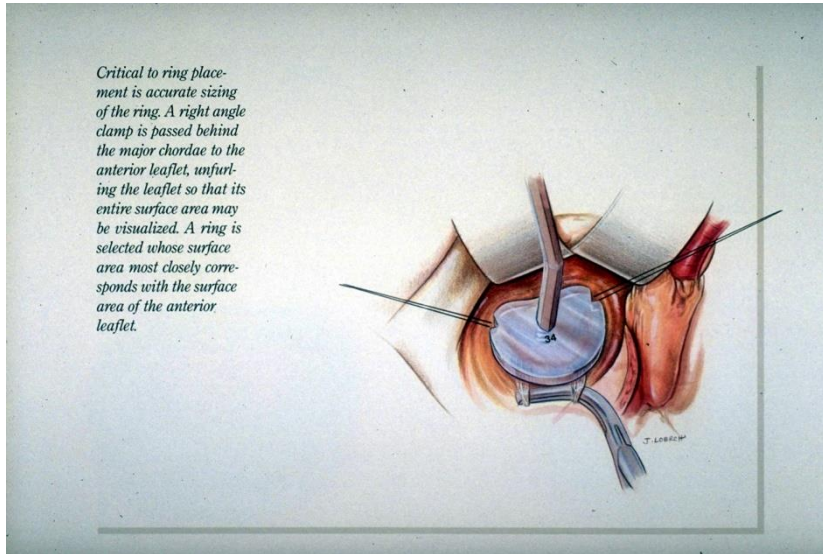


D



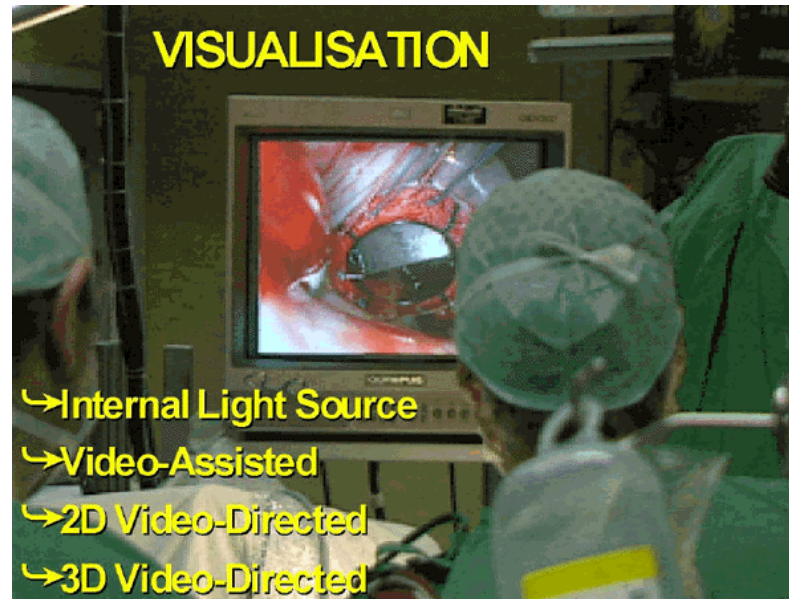
# Mitraalklep annuloplastiek

- Restrictief ( 2 maten downsizen)

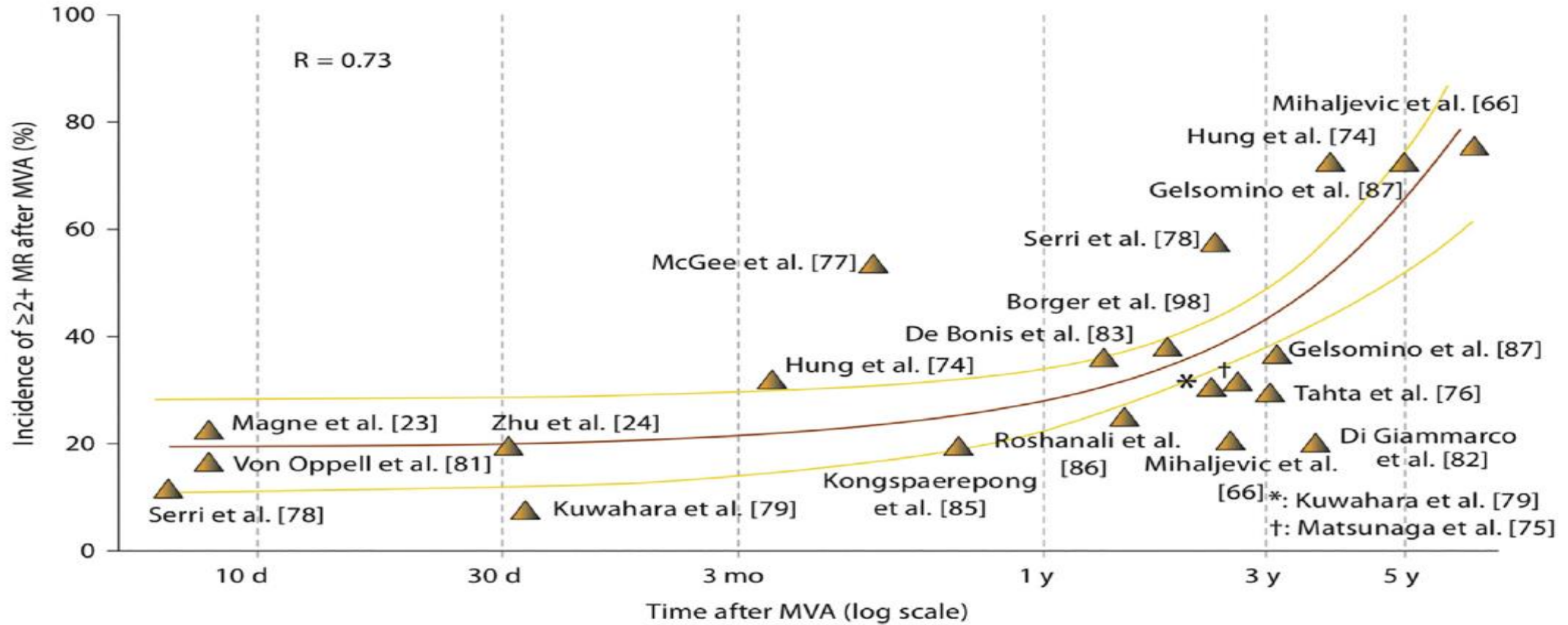


# Minimaal invasief

Als “alleen” mitraalklep



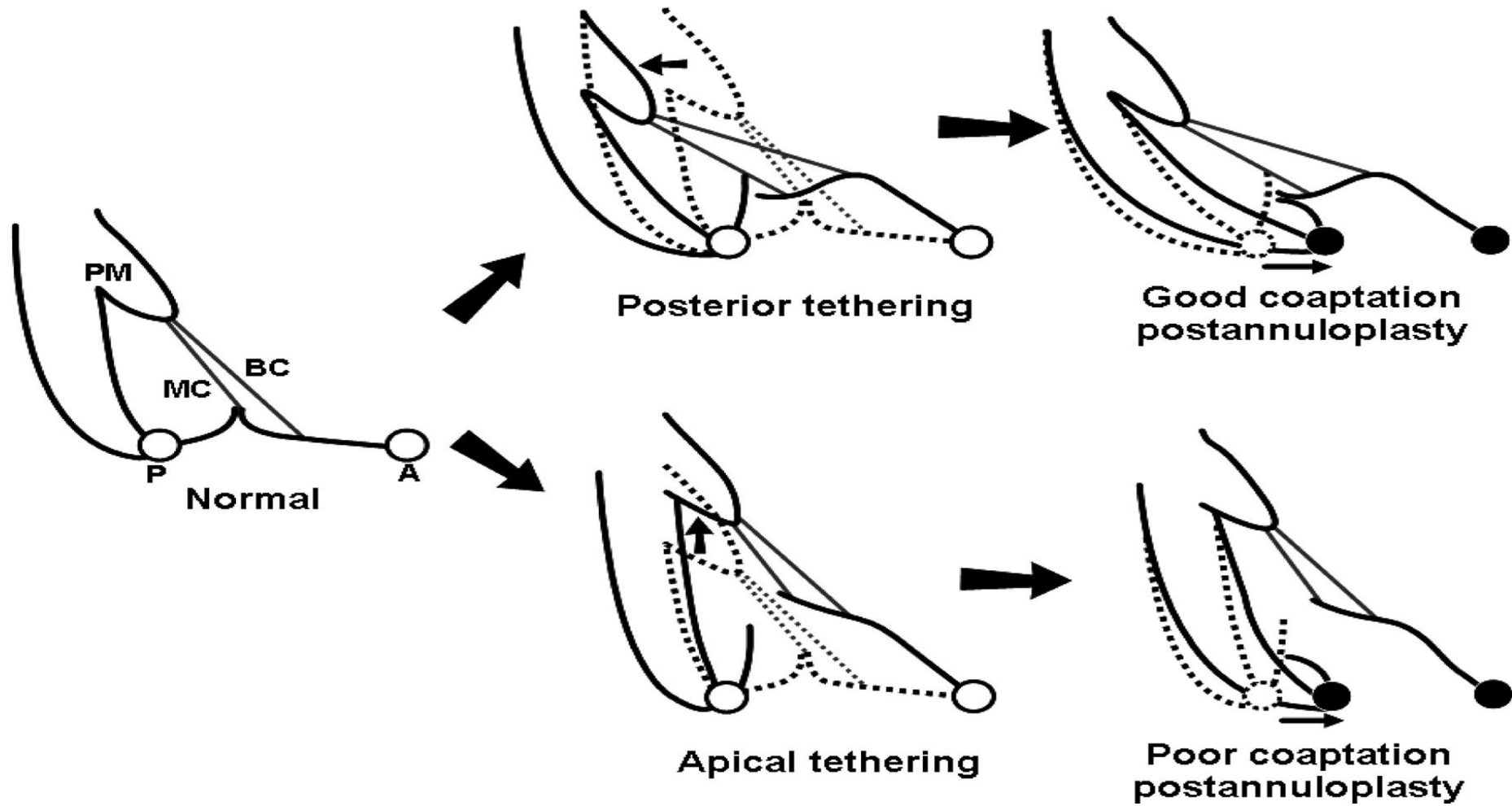
Recidief 10-20% vroeg na operatie  
50-70% recidief na 5 jaar)



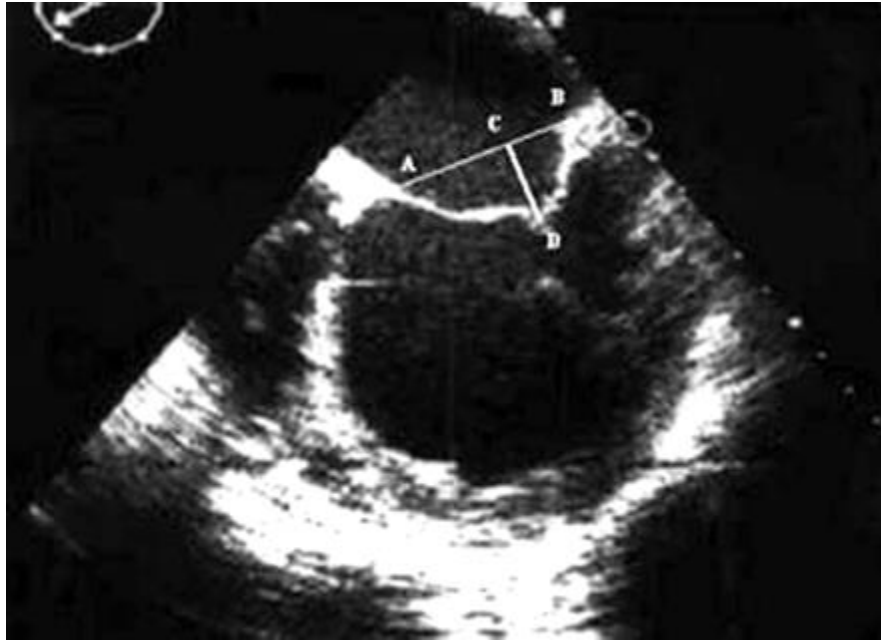
**Fig. 7.** Recurrence of greater than +2 mitral regurgitation after mitral valve annuloplasty (MVA) for ischemic mitral regurgitation. MR, mitral regurgitation. (From Magne J, Sénéchal M, Dumesnil JG, et al. Ischemic mitral regurgitation: a complex multifaceted disease. *Cardiology* 2009;112(4):244–59; with permission.)



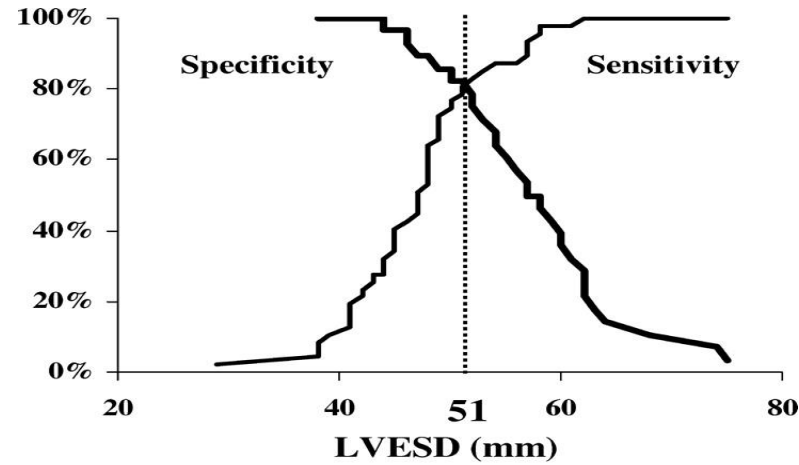
Schematic diagrams of the proposed mechanisms of posterior and apical tethering



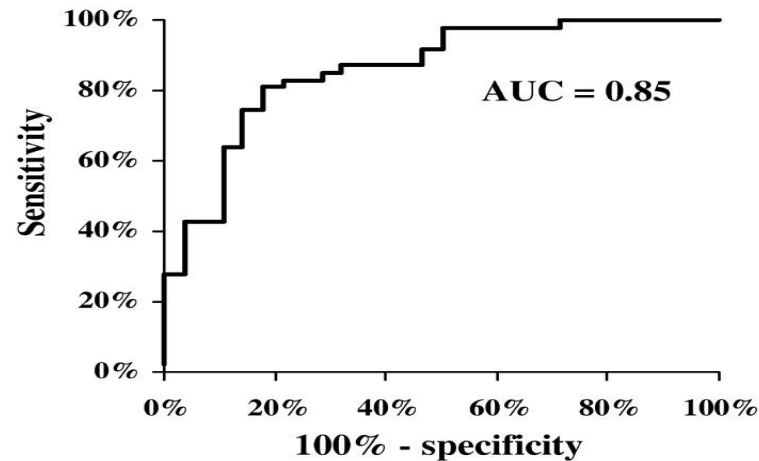
Lee, A. P.-W. et al. *Circulation* 2009;119:2606-2614



**ROC curve analysis (panel A, left) demonstrated that the optimal cut-off value for LV end-systolic dimension (LVESD) was 51mm to predict reverse LV remodeling (dashed line crossing at intersection of sensitivity and specificity curves)**



Panel A



Panel B

**Braun J. et al.; Eur J Cardiothorac Surg 2005;27:847-853**



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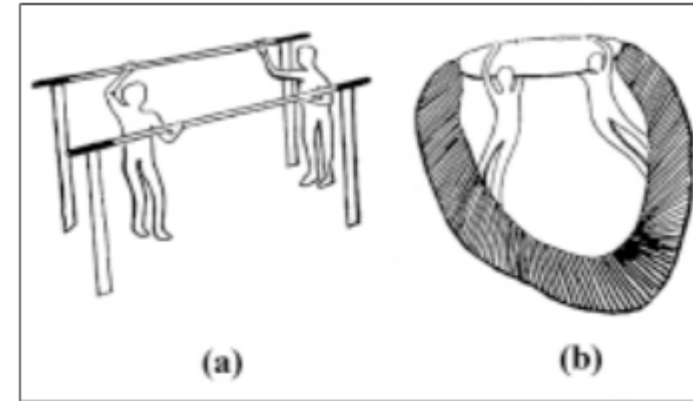
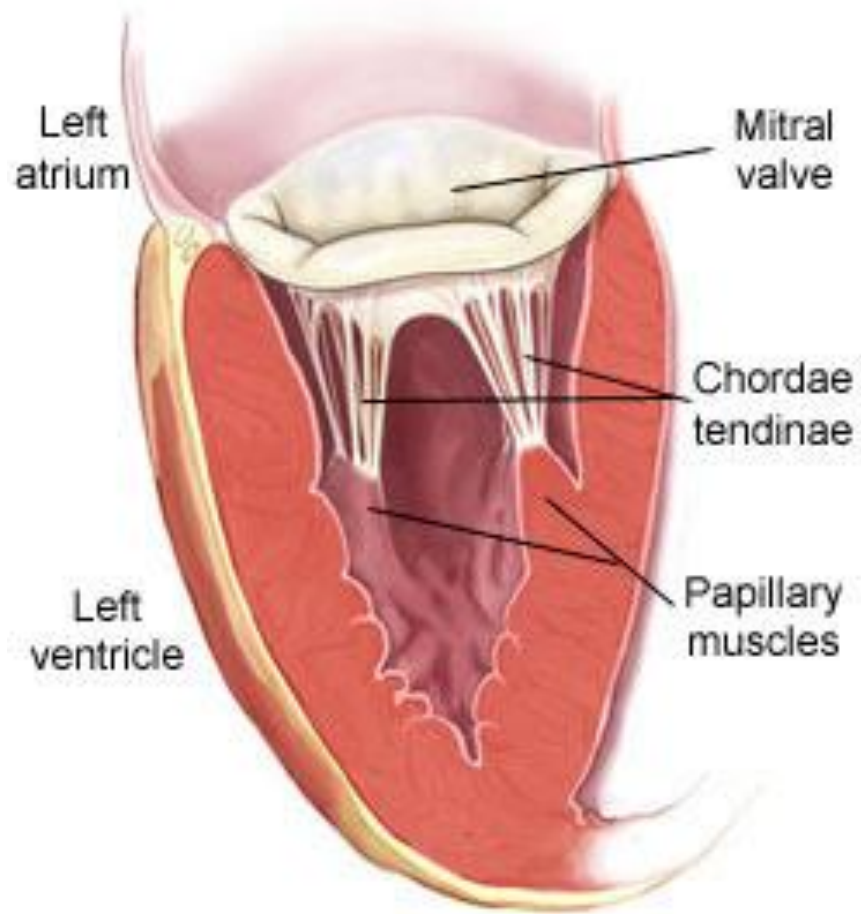
# Klepvervangning?

Lang beschouwd als slechte behandeling zowel op korte als lange termijn

echter: geen gerandomiseerde trials

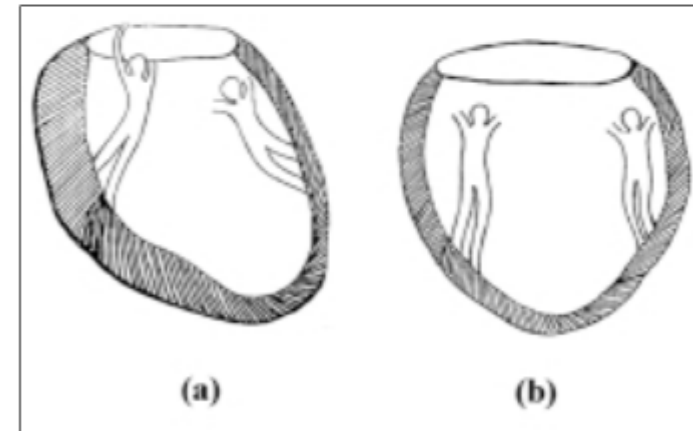
en: extrapoleren gunstige effect van mitraalkleplastieken bij degeneratief mitraalkleplijden

chorda sparende klepvervangning



**Fig. 1.** The parallel bars are the mitral annulus. (b) The arms of the gymnasts are chordae and their bodies the papillary muscles. The floor is the left ventricular wall.

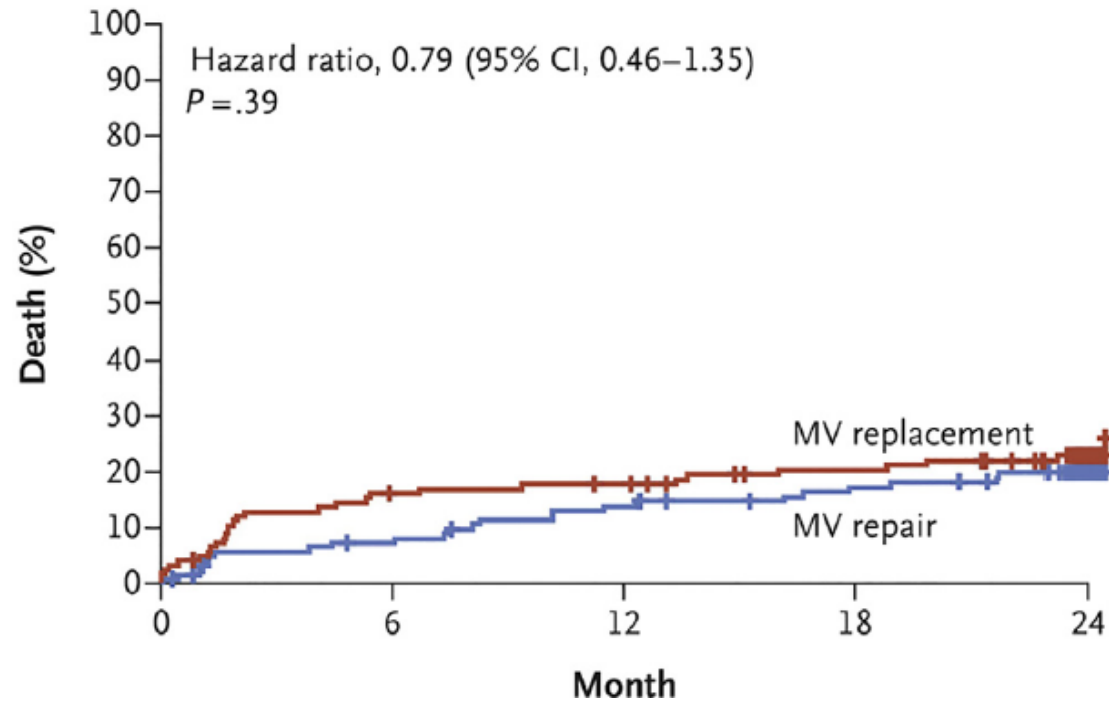
(Reproduced with permission from : Kumar AS. Heart strings. *Ind J Thorac Cardiovasc Surg* 2004;20:115-16.)



**Fig. 2.** Effect of chordal resection- Note dilatation & ventricular wall thickness where chordae are resected partially or completely (a) Partial chordal resection (b) Complete chordal resection.

(Reproduced with permission from : Kumar AS. Heart strings. *Ind J Thorac Cardiovasc Surg* 2004;20:115-16.)

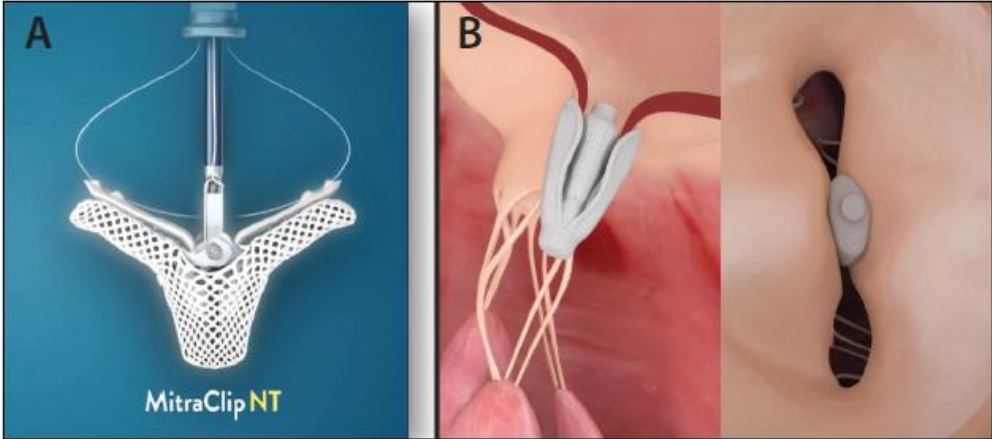
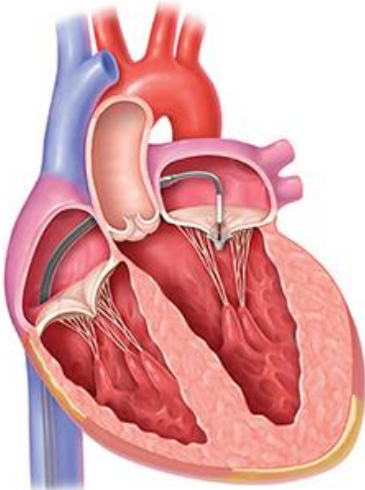
# CTSN trial



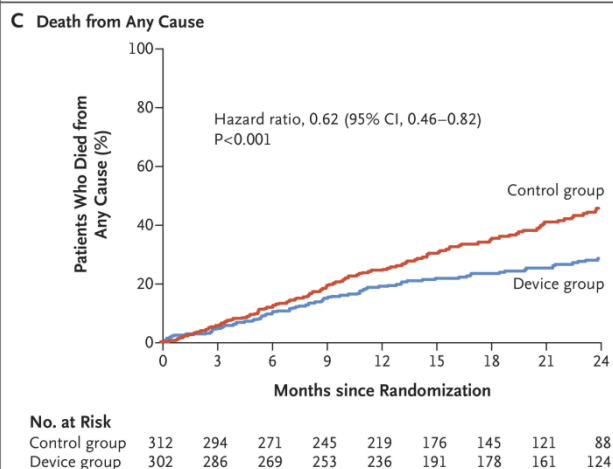
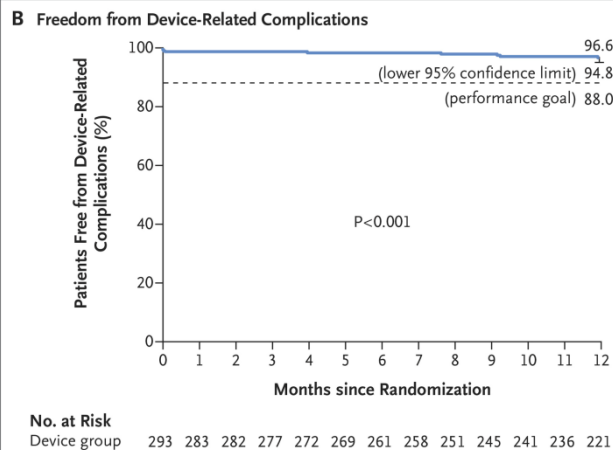
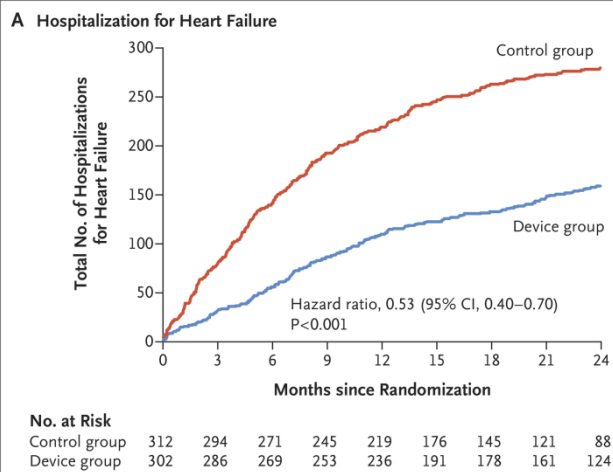
**Fig. 8.** Long-term survival of mitral valve repair versus replacement for severe ischemic mitral valve regurgitation: 2-year results of the CTSN trial. CI, confidence interval; MV, mitral valve. (From Goldstein D, Moskowitz AJ, Gelijns AC, et al. Two-year outcomes of surgical treatment of severe ischemic mitral regurgitation. *N Engl J Med* 2016;374(4):344–53; with permission.)

# Wat dan.....?

- Mitraclip



# COAPT trial



## Transcatheter Mitral-Valve Repair in Patients with Heart Failure

Gregg W. Stone, M.D., JoAnn Lindenfeld, M.D., William T. Abraham, M.D., Saibal Kar, M.D., D. Scott Lim, M.D., Jacob M. Mishell, M.D., Brian Whisenant, M.D., Paul A. Grayburn, M.D., Michael Rinaldi, M.D., Samir R. Kapadia, M.D., Vivek Rajagopal, M.D., Ian J. Sarembock, M.B., Ch.B., M.D., et al., for the COAPT Investigators\*

[Article](#) [Figures/Media](#)

[Metrics](#)

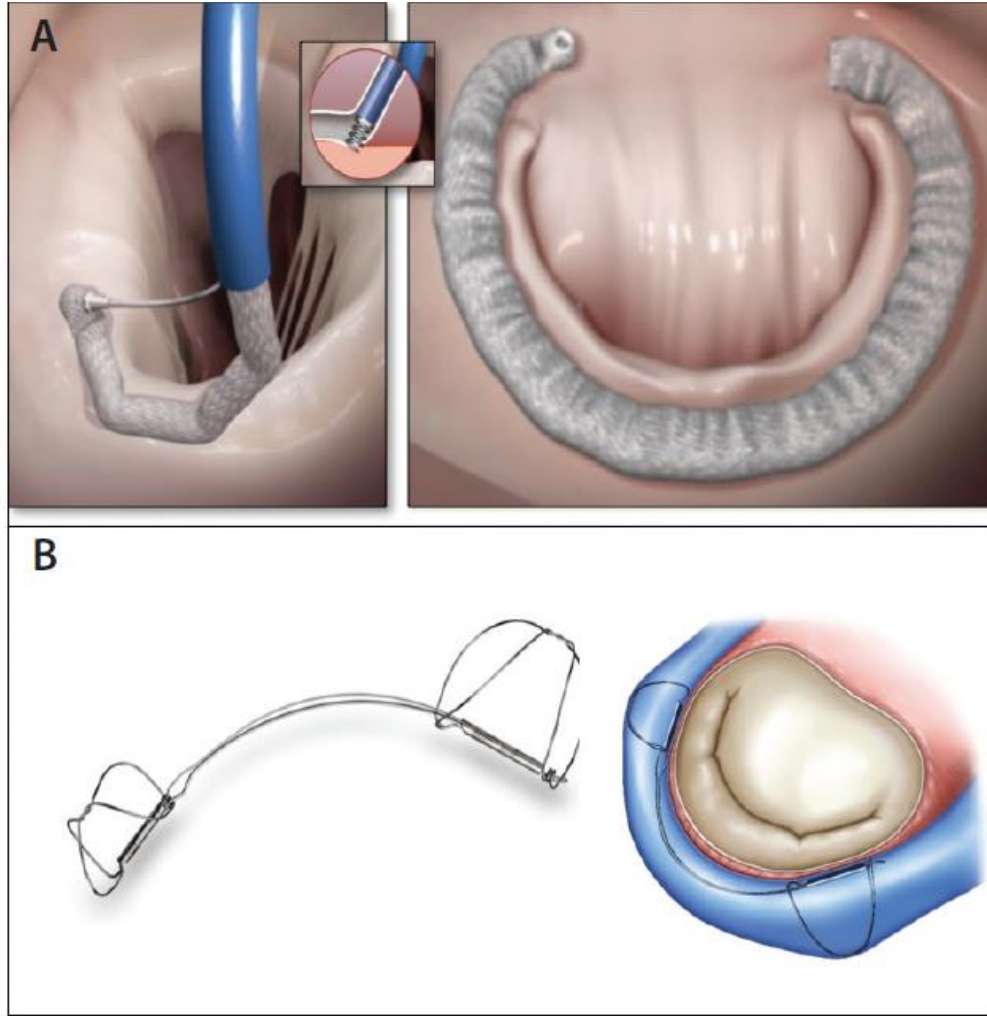
December 13, 2018

N Engl J Med 2018; 379:2307-2318

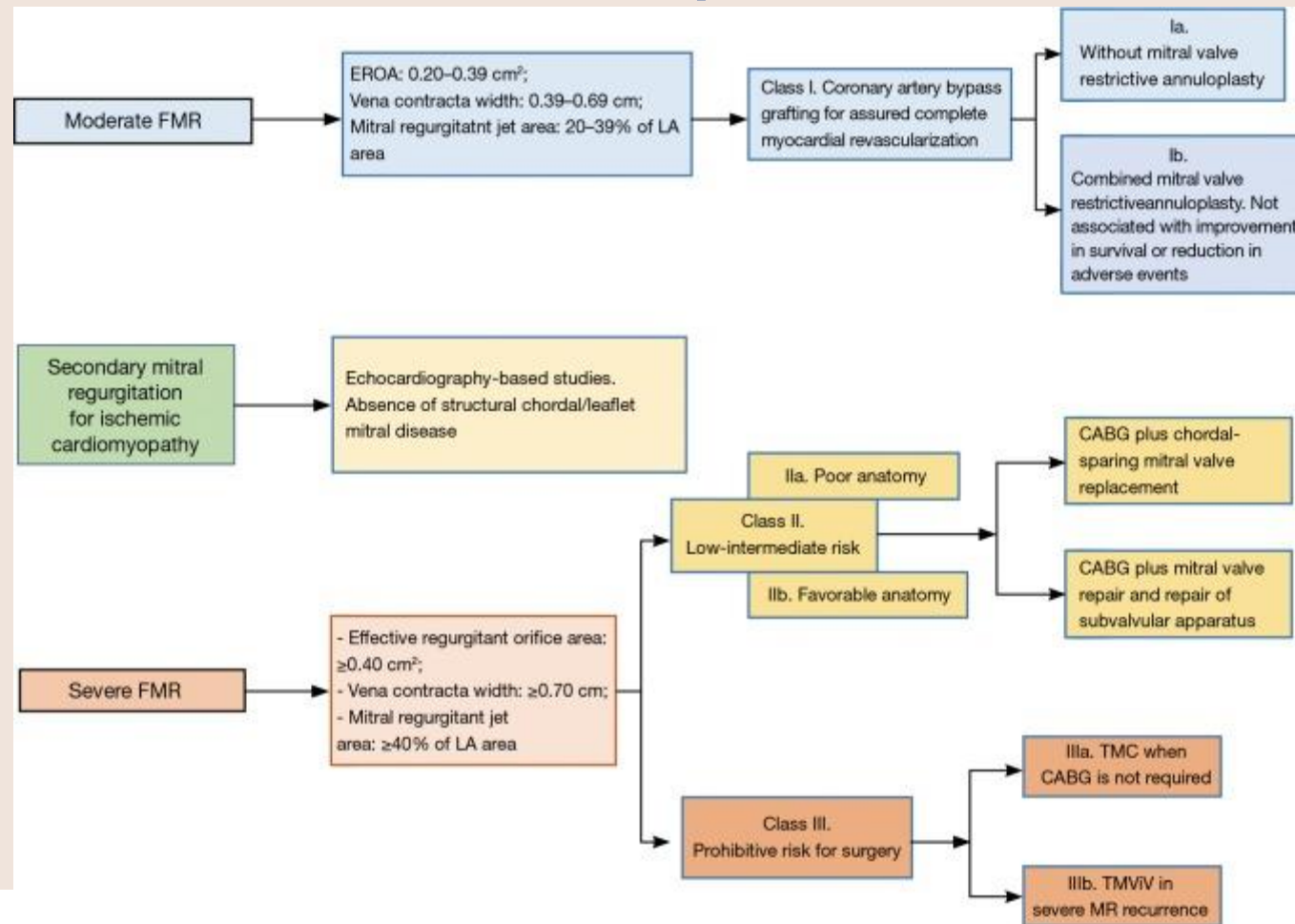
DOI: 10.1056/NEJMoa1806640

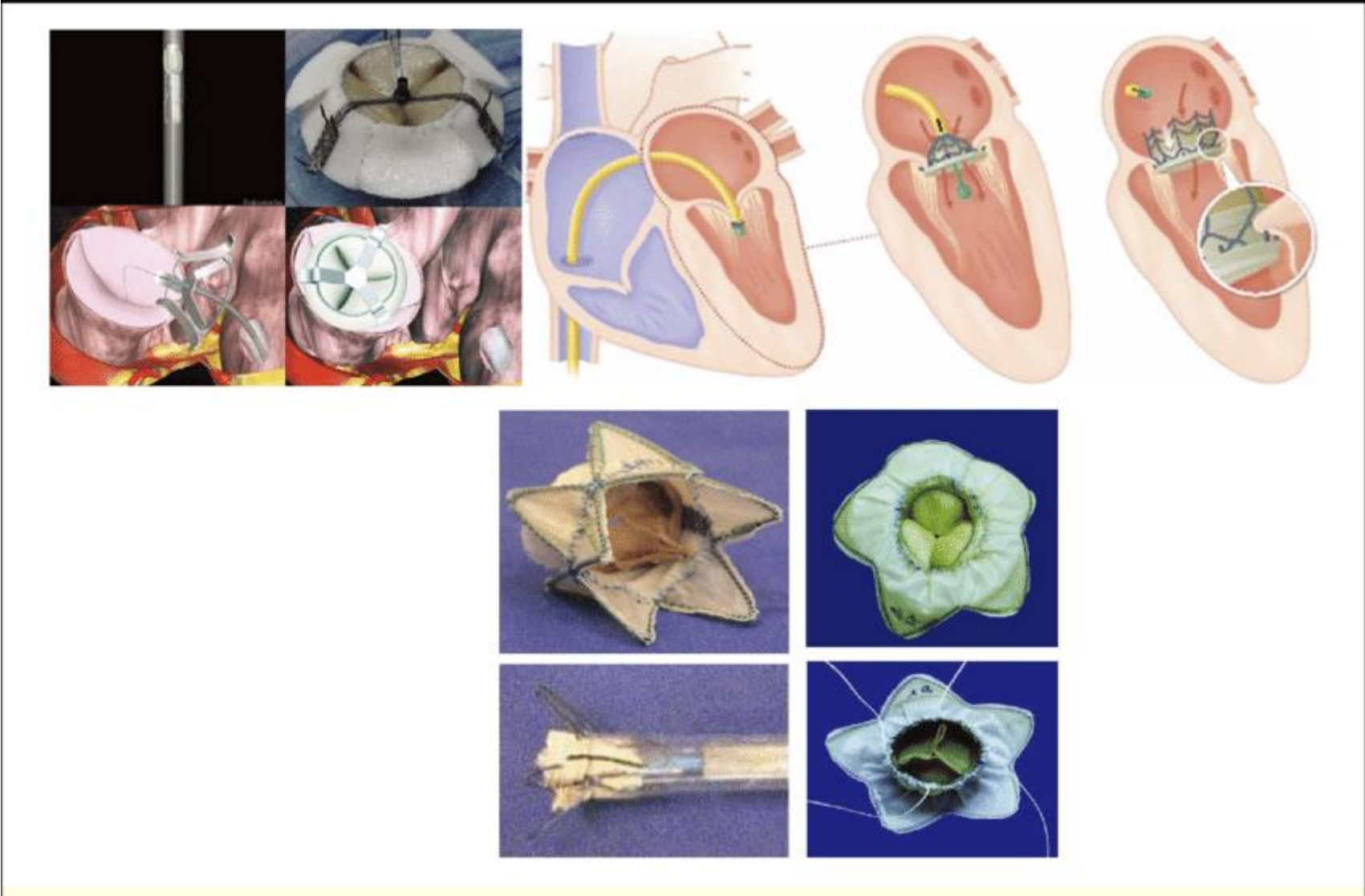
[22 References](#) [21 Citing Articles](#)

operators' increased experience with implantation and improved echocardiographic guidance. The decrease in the severity of mitral regurgitation that was associated with transcatheter mitral-leaflet approximation was also durable over time. Among surviving patients in the device group, the mitral regurgitation grade at 2 years was 3+ or higher in only 0.9% and was 2+ or higher in only 22.8%. In contrast, a previous randomized trial evaluated the effectiveness of a downsized annuloplasty ring in patients who had secondary ischemic mitral regurgitation of similar severity to that seen in this trial; among surviving patients who were treated with the downsized annuloplasty ring, the mitral regurgitation grade at 2 years was 3+ or higher in 14.0% and was 2+ or higher in 58.8%.<sup>23</sup>



# updated 2017 AATS AHA/ACC focused update of the 2014 AHA/ACC guideline







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**afsluiting**

**: dank voor uw aandacht**