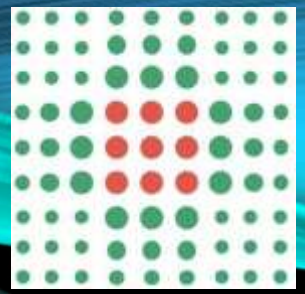
LA TERAPIA CHIRURGICA DELLE **VALVULOPATIE** NEL PAZIENTE CON **INSUFFICIENZA CARDIACA**

Dott. Alberto Molardi
UO di Cardiochirurgia

Cardiochirurgia Parma
AZIENDA OSPEDALIERO-UNIVERSITARIA DI PARMA
Unità Operativa Complessa di Cardiochirurgia
Scuola di Specializzazione in Cardiochirurgia - Università di Parma
Direttore: Prof. Francesco Nicolini



ESC
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2021 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure

Developed by the Task Force for the diagnosis and treatment of acute and chronic heart failure of the European Society of Cardiology (ESC)

With the special contribution of the Heart Failure Association (HFA) of the ESC

Authors/Task Force Members: Theresa A. McDonagh* (Chairperson) (United Kingdom), Marco Metra * (Chairperson) (Italy), Marianna Adamo (Task Force Coordinator) (Italy), Roy S. Gardner (Task Force Coordinator) (United Kingdom), Andreas Baumbach (United Kingdom), Michael Böhm (Germany), Haran Burri (Switzerland), Javed Butler (United States of America), Jelena Čelutkienė (Lithuania), Ovidiu Chioncel (Romania), John G.F. Cleland (United Kingdom), Andrew J.S. Coats (United Kingdom), Maria G. Crespo-Leiro (Spain), Dimitrios Farmakis (Greece), Martine Gilard (France), Stephane Heymans

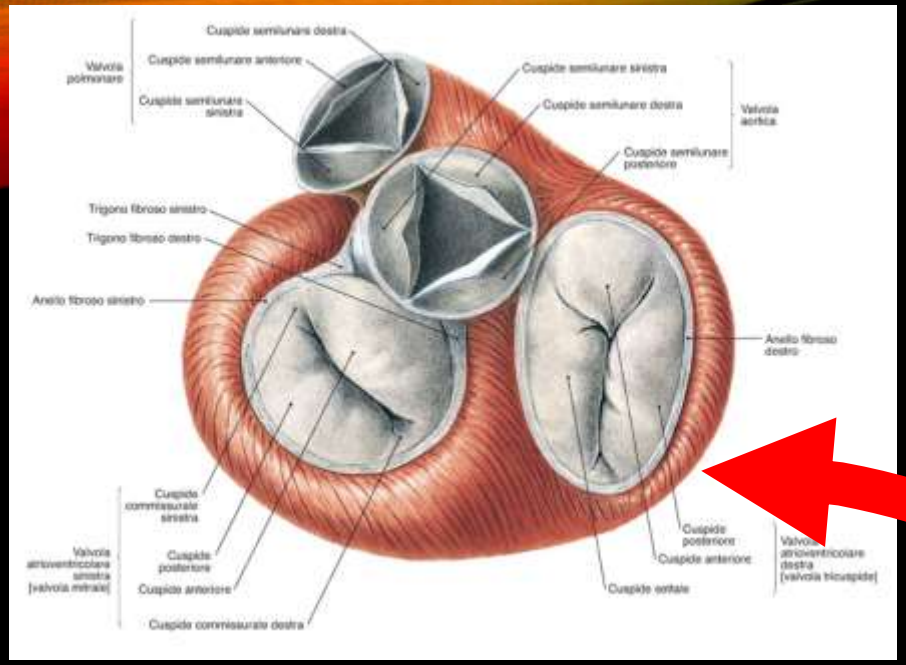
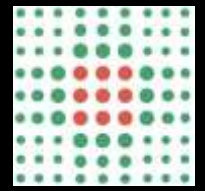
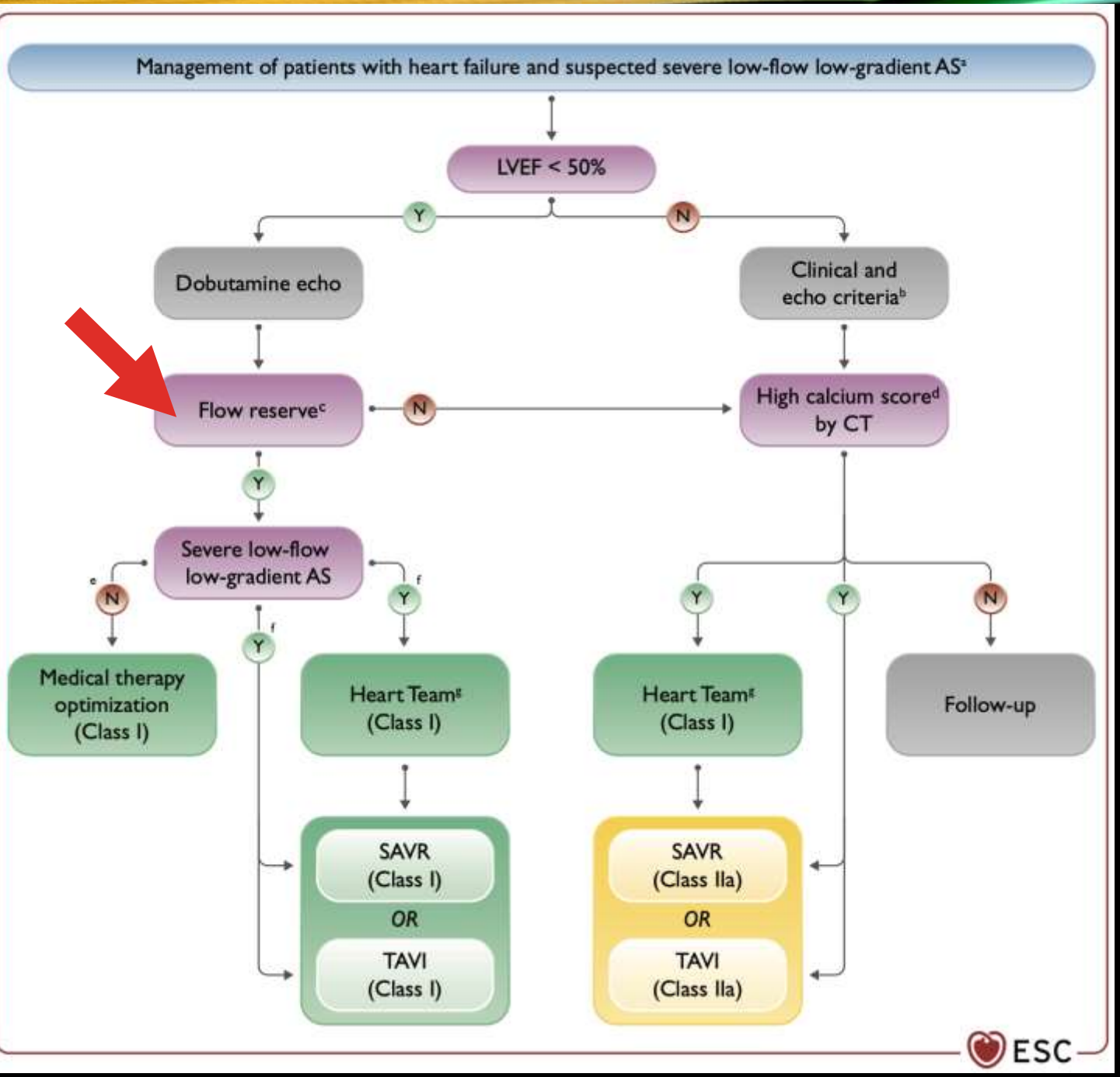

Cuspide semilunare destra
Valvola polmonare
Cuspide semilunare anteriore
Cuspide semilunare sinistra
Cuspide semilunare sinistra
Cuspide semilunare destra
Valvola aortica
Cuspide semilunare posteriore
Trigono fibroso sinistro
Trigono fibroso destro
Anello fibroso sinistro
Anello fibroso destro
Cuspide commissurale sinistra
Valvola atrioventricolare sinistra (valvola mitrale)
Cuspide posteriore
Cuspide anteriore
Cuspide commissurale destra
Cuspide posteriore
Cuspide anteriore
Cuspide settale
Valvola atrioventricolare destra (valvola tricuspide)

Table 5 **Causes of heart failure, common modes of presentation and specific investigations**

Cause	Examples of presentations	Specific investigations
CAD	Myocardial infarction	Invasive coronary angiography
	Angina or "angina-equivalent"	CT coronary angiography
	Arrhythmias	Imaging stress tests (echo, nuclear, CMR)
Hypertension	Heart failure with preserved systolic function	24 h ambulatory BP
	Malignant hypertension/acute pulmonary oedema	Plasma metanephrines, renal artery imaging
		Renin and aldosterone
Valve disease	Primary valve disease e.g., aortic stenosis	Echo – transoesophageal/stress
	Secondary valve disease, e.g. functional regurgitation	
	Congenital valve disease	
Arrhythmias	Atrial tachyarrhythmias	Ambulatory ECG recording
	Ventricular arrhythmias	Electrophysiology study, if indicated
CMPs	All	CMR, genetic testing
	Dilated	
	Hypertrophic	
	Restrictive	Right and left heart catheterization
	ARVC	
	Peripartum	
	Takotsubo syndrome	CMR, angiography
	Toxins: alcohol, cocaine, iron, copper	Trace elements, toxicology, LFTs, GGT
Congenital heart disease	Congenitally corrected/repaired transposition of great arteries	CMR
	Shunt lesions	
	Repaired tetralogy of Fallot	
	Ebstein's anomaly	
Infective	Viral myocarditis	CMR, EMB
	Chagas disease	
	HIV	Serology
	Lyme disease	

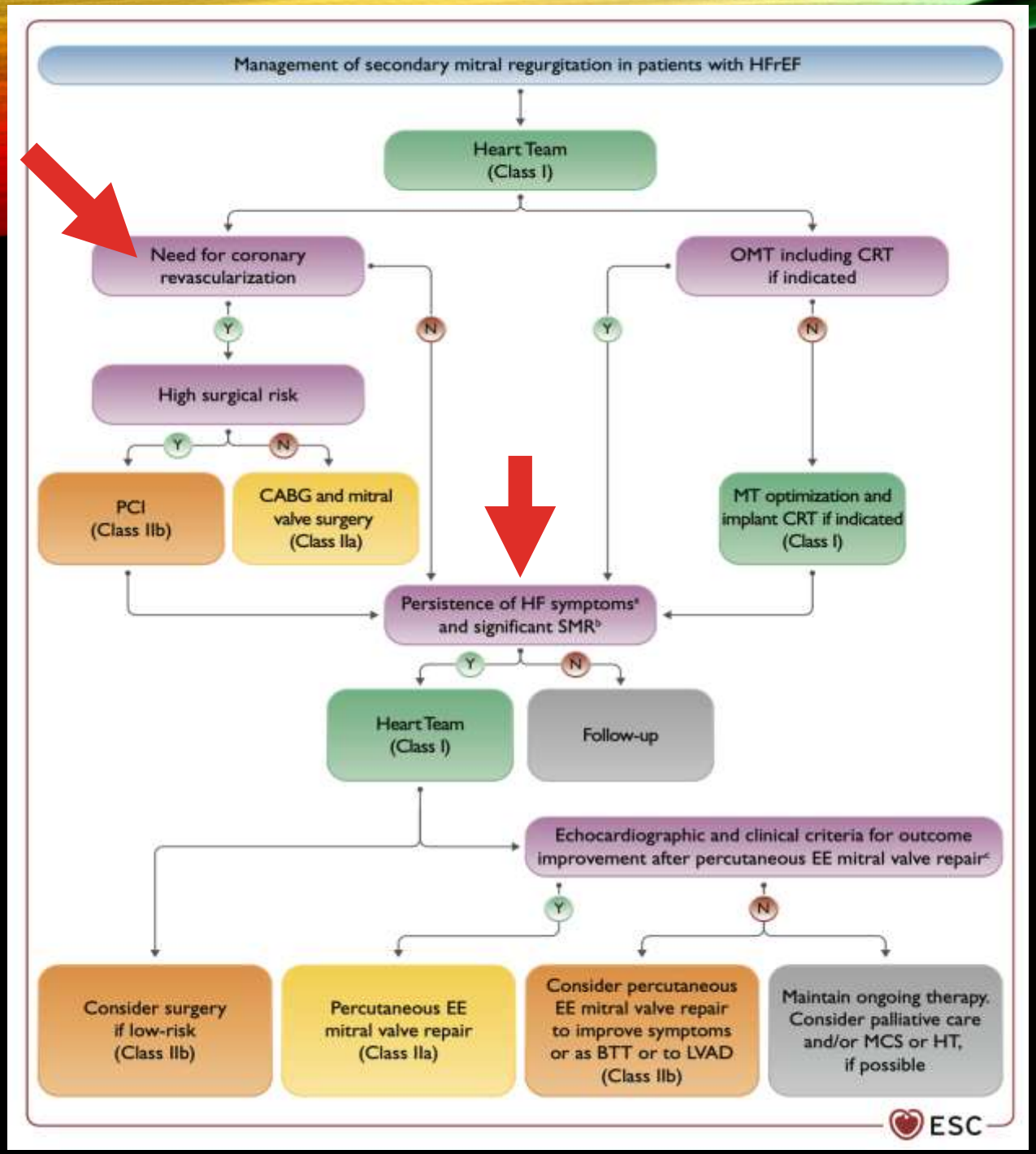


Aortic Stenosis (and Aortic Regurgitation)



Recommendations	Class[a]	Level[b]
Aortic stenosis		
Aortic valve intervention, TAVI or SAVR, is recommended in patients with HF and severe high-gradient aortic stenosis to reduce mortality and improve symptoms.[594]	I	B
It is recommended that the choice between TAVI and SAVR be made by the Heart Team, according to individual patient preference and features including age, surgical risk, clinical, anatomical and procedural aspects, weighing the risks and benefits of each approach.[592]	I	C

Functional Mitral Regurgitation



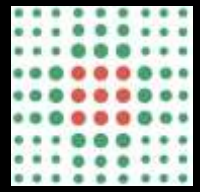
Secondary mitral regurgitation		
Percutaneous edge-to-edge mitral valve repair should be considered in carefully selected patients with secondary mitral regurgitation, not eligible for surgery and not needing coronary revascularization, who are symptomatic[c] despite OMT and who fulfil criteria[d] for achieving a reduction in HF hospitalizations.[612]	IIa	B
In patients with HF, severe secondary mitral regurgitation and CAD who need revascularization, CABG and mitral valve surgery should be considered.	IIa	C
Percutaneous edge-to-edge mitral valve repair may be considered to improve symptoms in carefully selected patients with secondary mitral regurgitation, not eligible for surgery and not needing coronary revascularization, highly symptomatic despite OMT and who do not fulfil criteria for reducing HF hospitalization.[617]	IIb	C

OPZIONI CHIRURGICHE NEL PAZIENTE CON VALVULOPATIA E INSUFFICIENZA CARDIACA

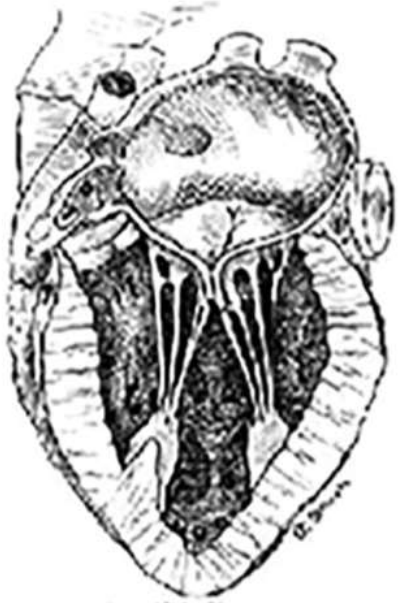
STENOSI AORTICA:
- SOSTITUZIONE VALVOLARE AORTICA IN CEC
- TAVI-TA / TAVI-TF

INSUFFICIENZA AORTICA:
- SOSTITUZIONE VALVOLARE AORTICA IN CEC
- TAVI-TA / TAVI-TF

INSUFFICIENZA MITRALICA FUNZIONALE:
- ANNULOPLASTICA STANDING ALONE
- RIAPPROSSIMAZIONE DEI MUSCOLI PAPILLARI (PP MM SLING) + ANNULOPLASTICA
- RIVASCOLARIZZAZIONE (SE NECESSARIA) + MITRAL VALVE SURGERY
- EDGE-TO-EDGE PERCUTANEA (MITRACLIP – PASCAL – ETC)



Normal left ventricle,
left atrium and mitral valve

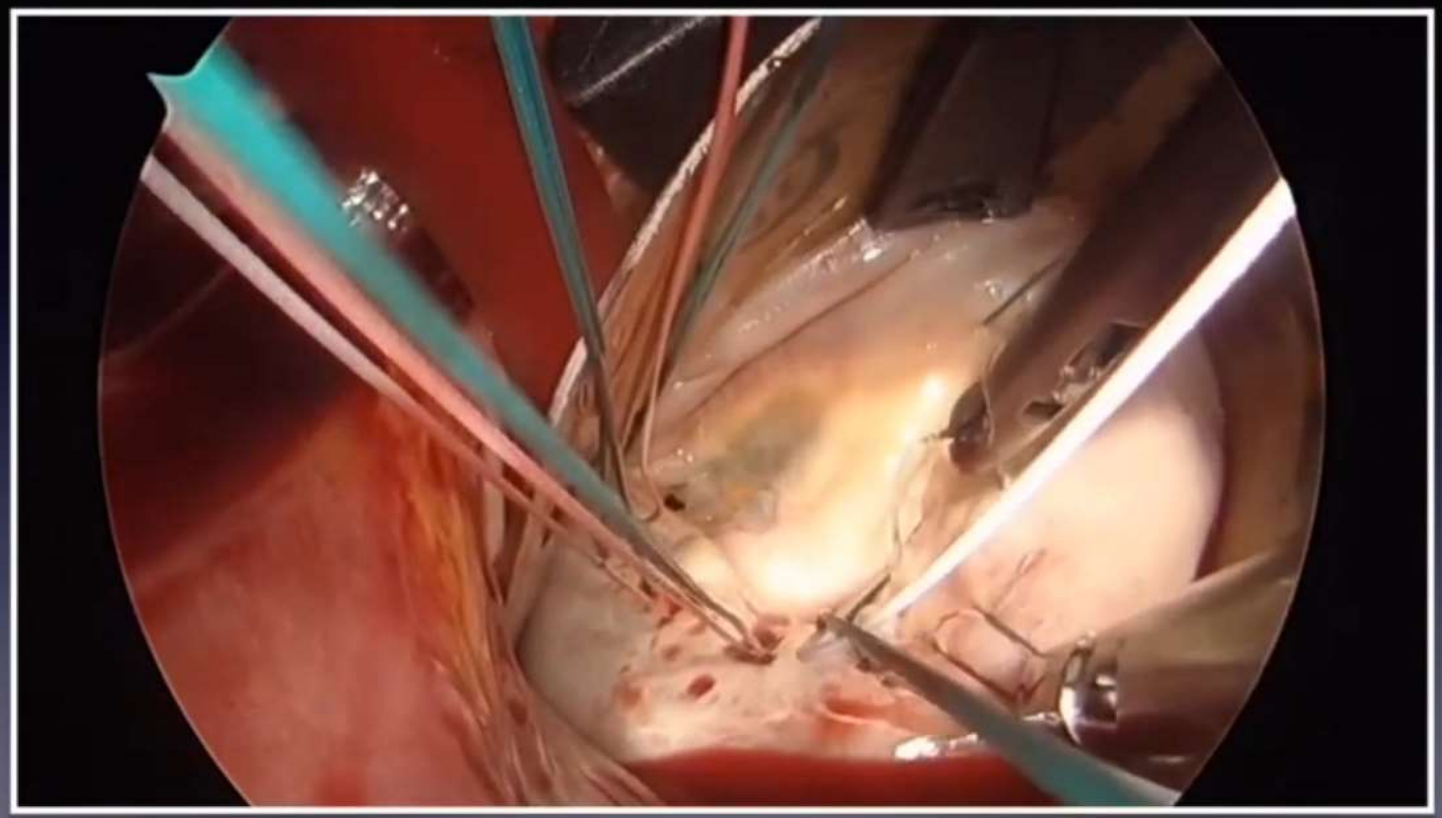


Cardiomyopathy:
left ventricular dilation/dysfunction
and left atrial enlargement with
mitral regurgitation

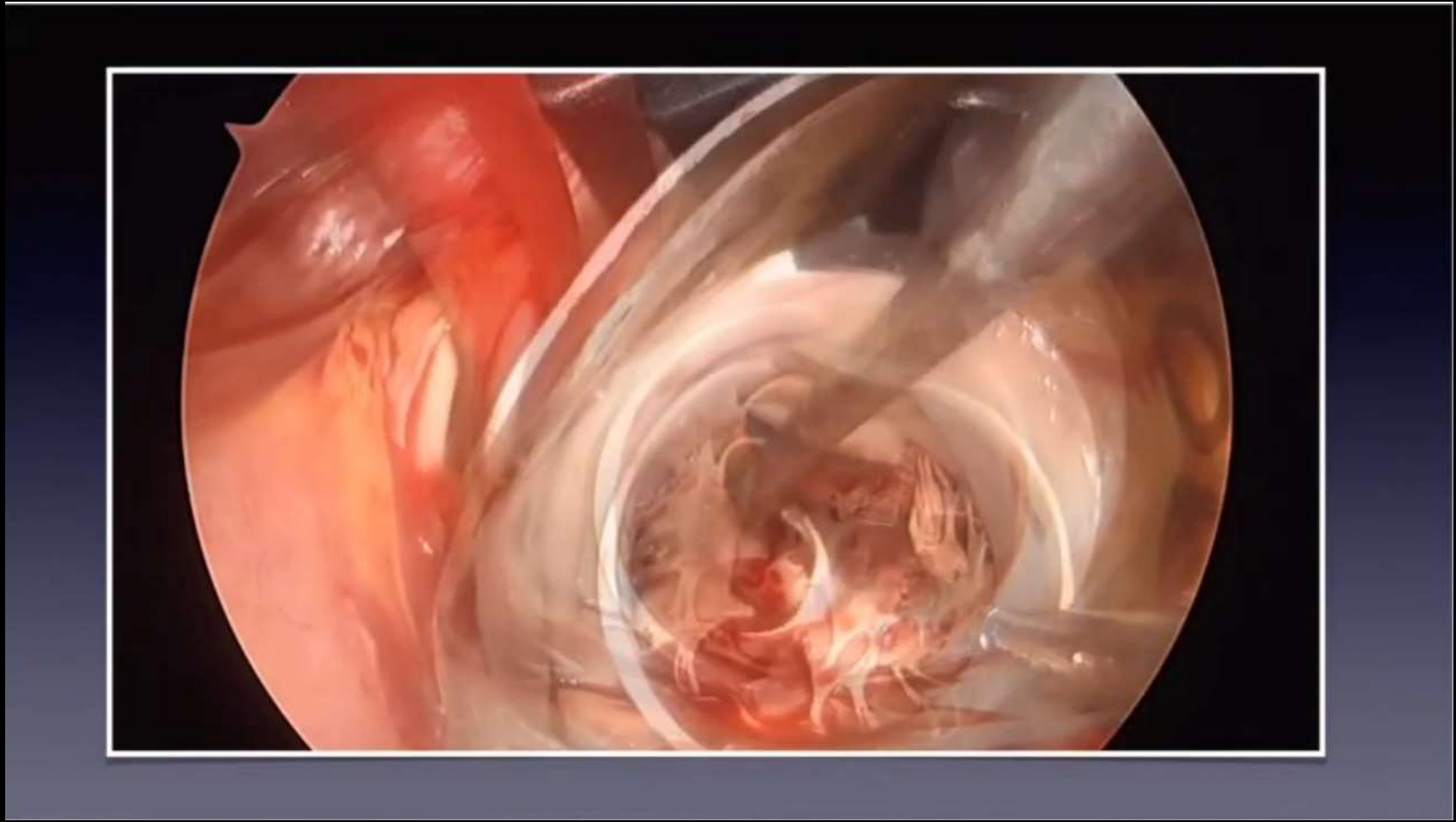
- Changes in left ventricular geometry
- Dyssynchrony of contraction
- Papillary muscle displacement/dysfunction
- Distortion of the subvalvular mitral apparatus
- Annular dilation?
- Atrial fibrillation

Fig. 1. Mechanisms of mitral regurgitation in ischemic and nonischemic cardiomyopathy.
Modified from Ref. [1].

ANNULOPLASTICA



SLING DEI PAPILLARI

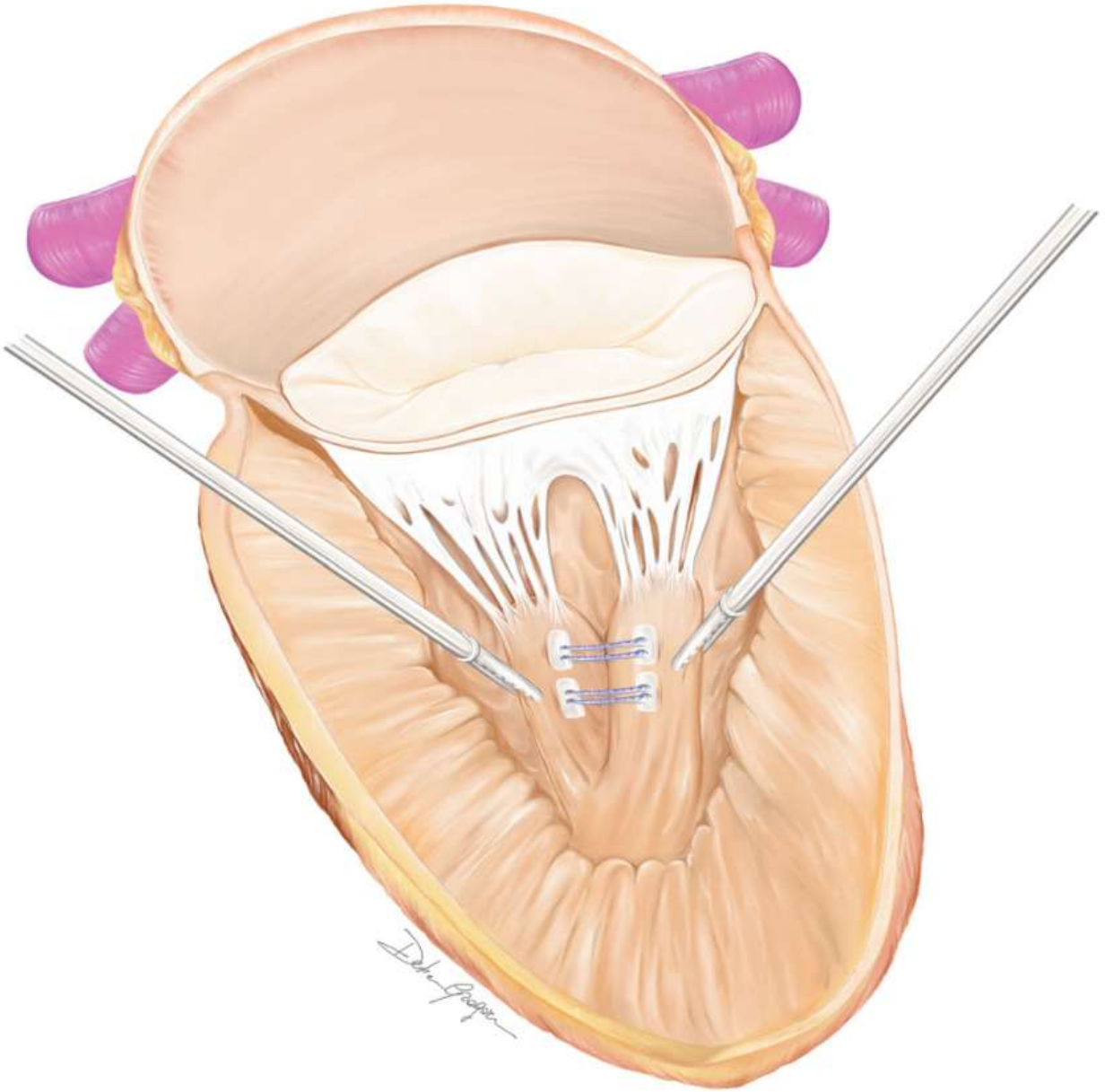


REVIEW

Subannular procedures on papillary muscle mitral valve regurgitation repair

Francesco Guccione MD, PhD | Marco Moscarelli MD, PhD
Roberta Sampognaro MD | Massimo Salardino MD | Dan
Nogara Angela MD | Khalil Fattouch MD, PhD

Department of Cardiovascular Surgery, GVM Care and Research, Maria Eleonora Hospital, Palermo, Italy



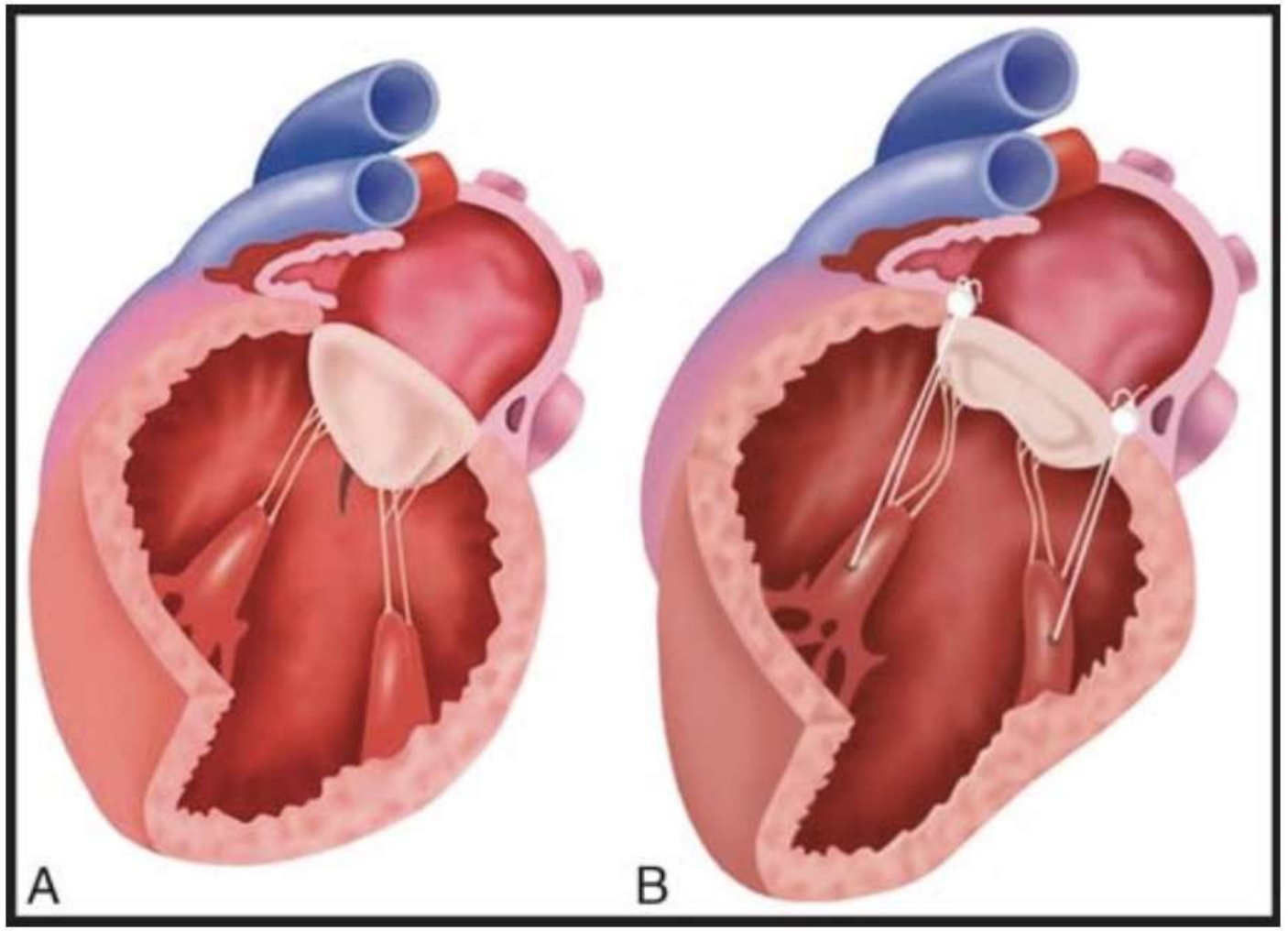


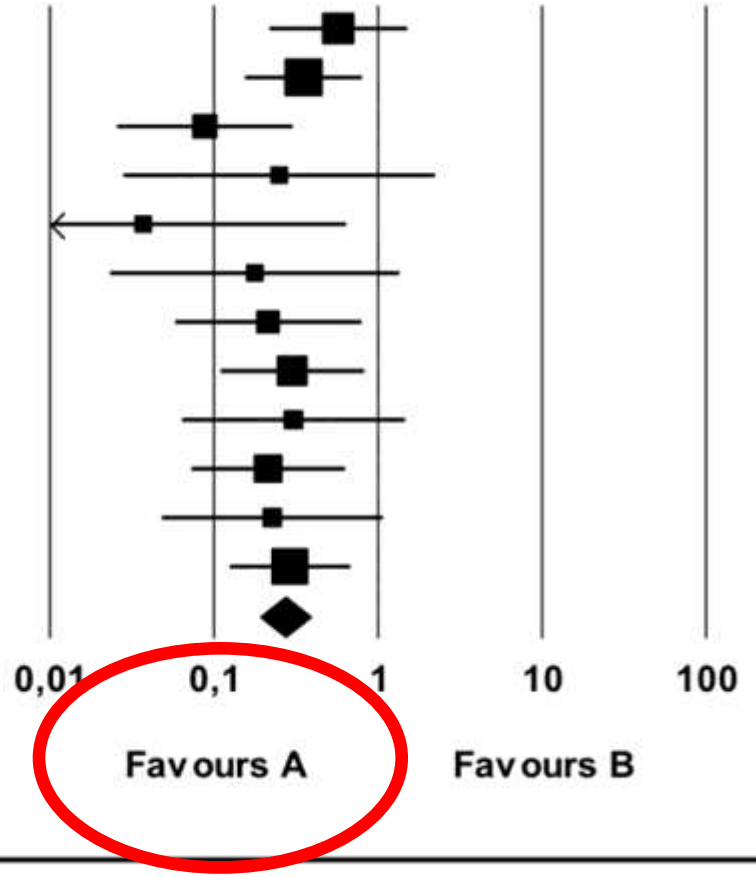
FIGURE 1. A and B, Placement of papillary muscle realignment sutures through the posteromedial papillary muscle (A) and through the posterior mitral annulus, in the P3 segment (B).

ORIGINAL RESEARCH ARTICLE

Subannular reconstruction in secondary mitral regurgitation: a meta-analysis

Eva Karolina Harmel, Hermann Reichenspurner, Evaldas Girdauskas

Study name	Odds ratio	Lower limit	Upper limit	p-Value	Group-A	Group-B
	Statistics for each study				Events / Total	
Wakasa et al., 2015	0,573	0,216	1,519	0,263	13 / 60	10 / 30
Ay et al., 2015	0,352	0,153	0,806	0,014	15 / 136	13 / 50
Fattouch et al., 2014(1)	0,088	0,025	0,305	0,000	3 / 115	13 / 50
Roshanali et al., 2013	0,250	0,028	2,252	0,217	1 / 31	8 / 69
Hvass et al., 2010	0,037	0,002	0,646	0,024	0 / 37	13 / 50
Langer et al., 2009	0,178	0,023	1,368	0,097	1 / 30	6 / 30
Varennes et al., 2009	0,214	0,057	0,801	0,022	3 / 44	13 / 50
Borger et al., 2007	0,300	0,109	0,832	0,021	6 / 43	18 / 49
Fattouch et al., 2012(1)	0,306	0,063	1,476	0,140	2 / 55	7 / 55
Hetzer et al., 2015	0,214	0,072	0,637	0,006	5 / 75	13 / 50
Fattouch et al., 2012(2)	0,227	0,048	1,082	0,063	2 / 69	8 / 69
Nappi et al., 2016	0,291	0,124	0,683	0,005	13 / 48	27 / 48
	0,268	0,189	0,380	0,000		



Heterogeneity: I-squared = 0%, tau-squared = 0, p = 0.691

A = annuloplasty + subannular reconstruction **B = isolated annuloplasty**

BMJ

Harmel EK, *et al. Heart* 2018;**104**:1783–1790. doi:10.1136/heartjnl-2017-312277

PERCUTANEOUS EDGE TO EDGE REPAIR

Key differences and similarities between COAPT and MITRA-FR trials.

	COA		
Key inclusion criteria			
Severity of symptomatic MR	Mod		
NYHA function class	II-IV		
HF hospitalizations	≥1 ir		
GDMT or device therapy prior to enrollment	Opti toler		
BNP (or pro-BNP) level (pg/mL)	≥300		
Left Ventricular Ejection Fraction (LVEF)	20%		
Left Ventricular End-systolic diameter	≤70		
Effective Regurgitant Orifice Area (mm2)	≥30		
Regurgitant Volume (mL/beat)	>45		
Surgical risk	STS I for surgery		
Key echocardiographic characteristics			
Average LVEF	31 ± 9	33 ± 7	
Average LVEDV (mL/m^2)	101 ± 34	135 ± 35	
Average EROA (mm^2)	41 ± 15	31 ± 10	
EROA <30 mm^2 (%)	14%	52%	
Operator and Center experience			
Number of clips			
1	36%	46%	
≥2	64%	54%	
Procedural complications	8.5%	14.6%	
Post-procedural immediate residual MR ≥3+	5%	9%	
Key exclusion criteria			
		tis	History of mitral valve intervention Life expectancy <1 year due to non-cardiac condition Myocardial infarction, CABG, Cardiac Resynchronization Therapy, TAVR, cardioversion, or stroke within prior 3 months Coronary angioplasty within prior 1 month Renal replacement therapy Uncontrolled arterial hypertension

Edge-to-edge surgical mitral valve repair in the era of MitraClip: what if the annuloplasty ring is missed?

Michele De Bonis, Elisabetta Lapenna, Alberto Pozzoli, Andrea Giacomini, and Ottavio Alfieri

Purpose of review
The purpose of this review is to define the role of annuloplasty in the surgical edge-to-edge repair, an issue that seems particularly relevant in the current MitraClip era, when more than 15 000 patients have been submitted to a percutaneous transcatheter edge-to-edge repair without concomitant annuloplasty.

Recent findings
Only a few studies have reported the clinical and echocardiographic outcomes of the ringless edge-to-edge mitral repair. In all of them, however, only mid-term data were provided. Recently, the long-term results of the surgical edge-to-edge procedure performed without a concomitant annuloplasty in a selected group of patients with degenerative mitral regurgitation have been published.

Summary
The surgical edge-to-edge technique should always be combined with prosthetic ring annuloplasty in order to provide excellent long-term outcomes in patients with degenerative mitral regurgitation. The overall long-term results of the surgical edge-to-edge technique without annuloplasty are not satisfactory. The ringless edge-to-edge technique is not effective in the challenging setting of extensively calcified annulus. In patients without annular calcification, in whom annuloplasty was intentionally avoided, the ringless edge-to-edge repair provides acceptable results in the mid term but is associated with a high failure rate in the long term. In the MitraClip perspective, these findings emphasize the need for a reliable annuloplasty to improve the long-term outcomes of the currently available transcatheter edge-to-edge procedure.

Keywords
annuloplasty, edge-to-edge technique, mitral regurgitation, mitral repair

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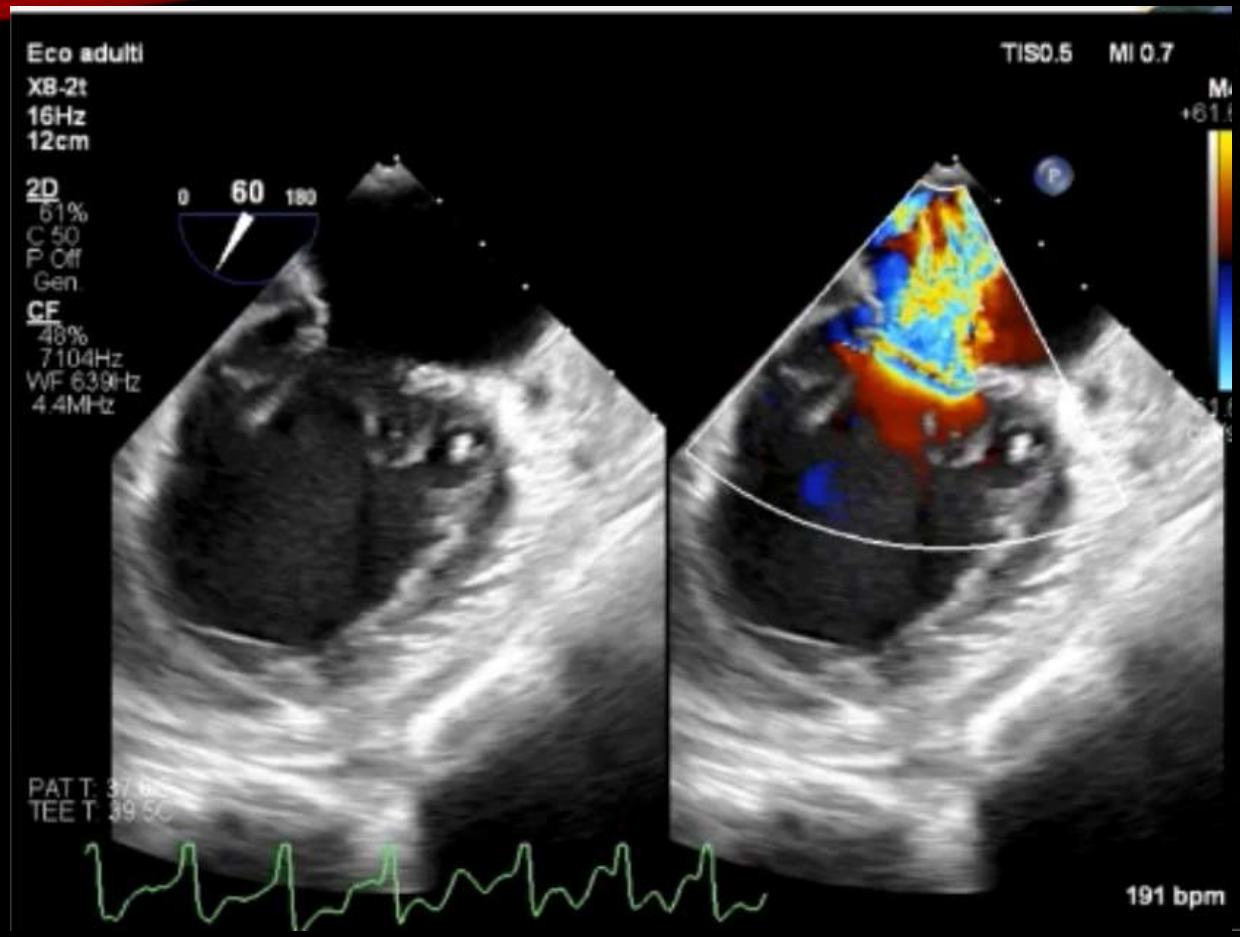

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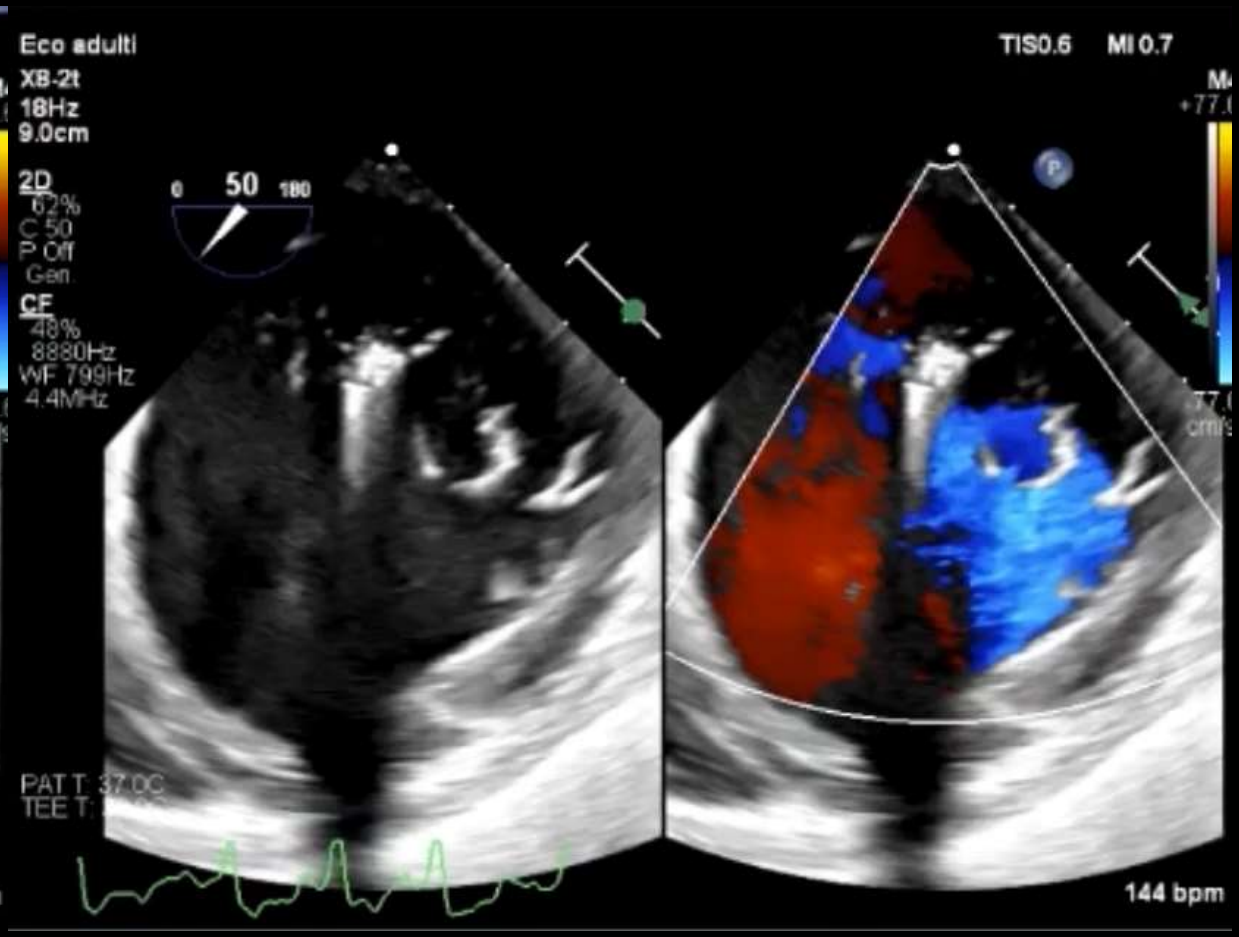


TEE 1
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C 50
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CF
48%
6838Hz
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TEE T: 38.6C
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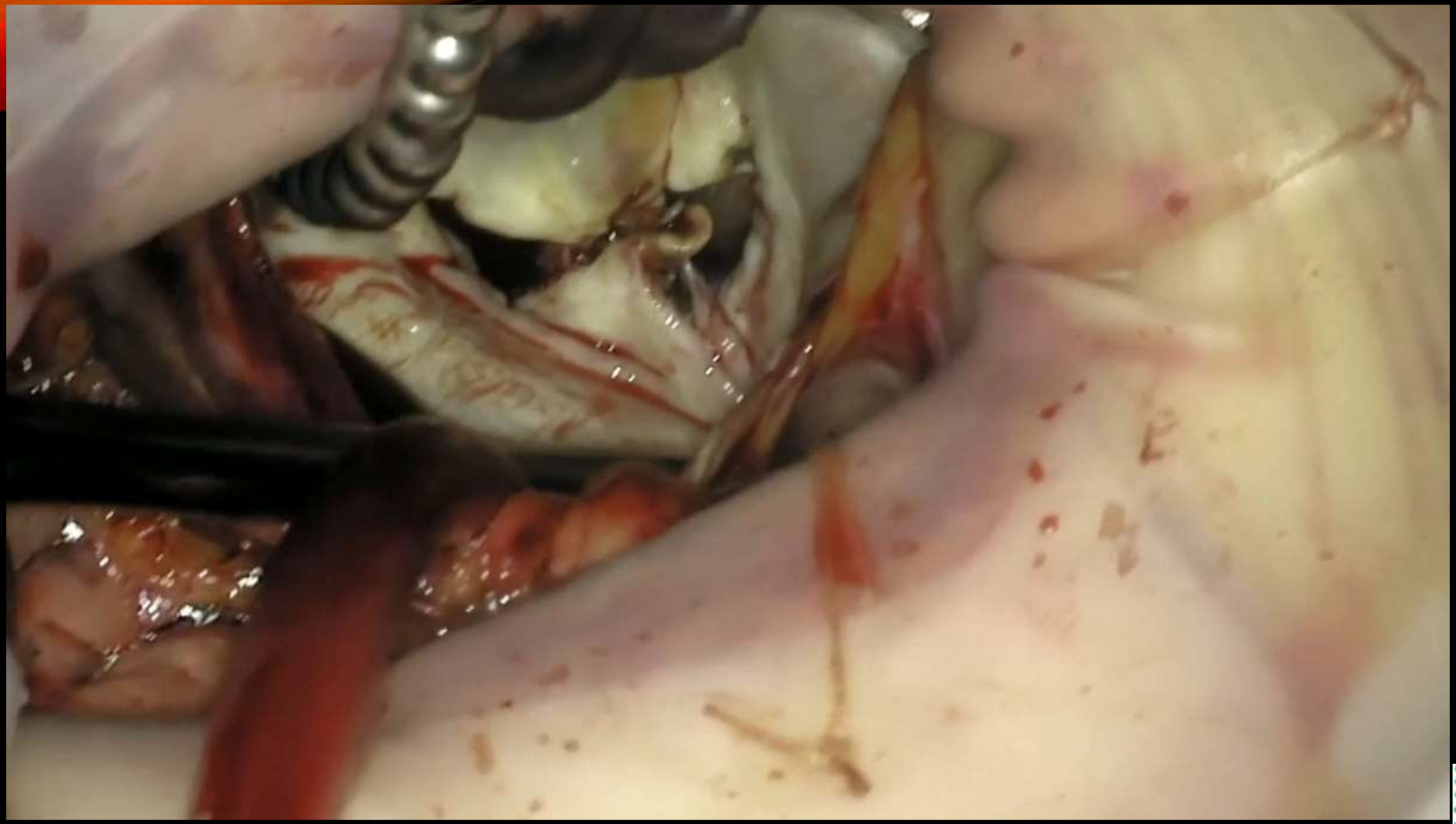

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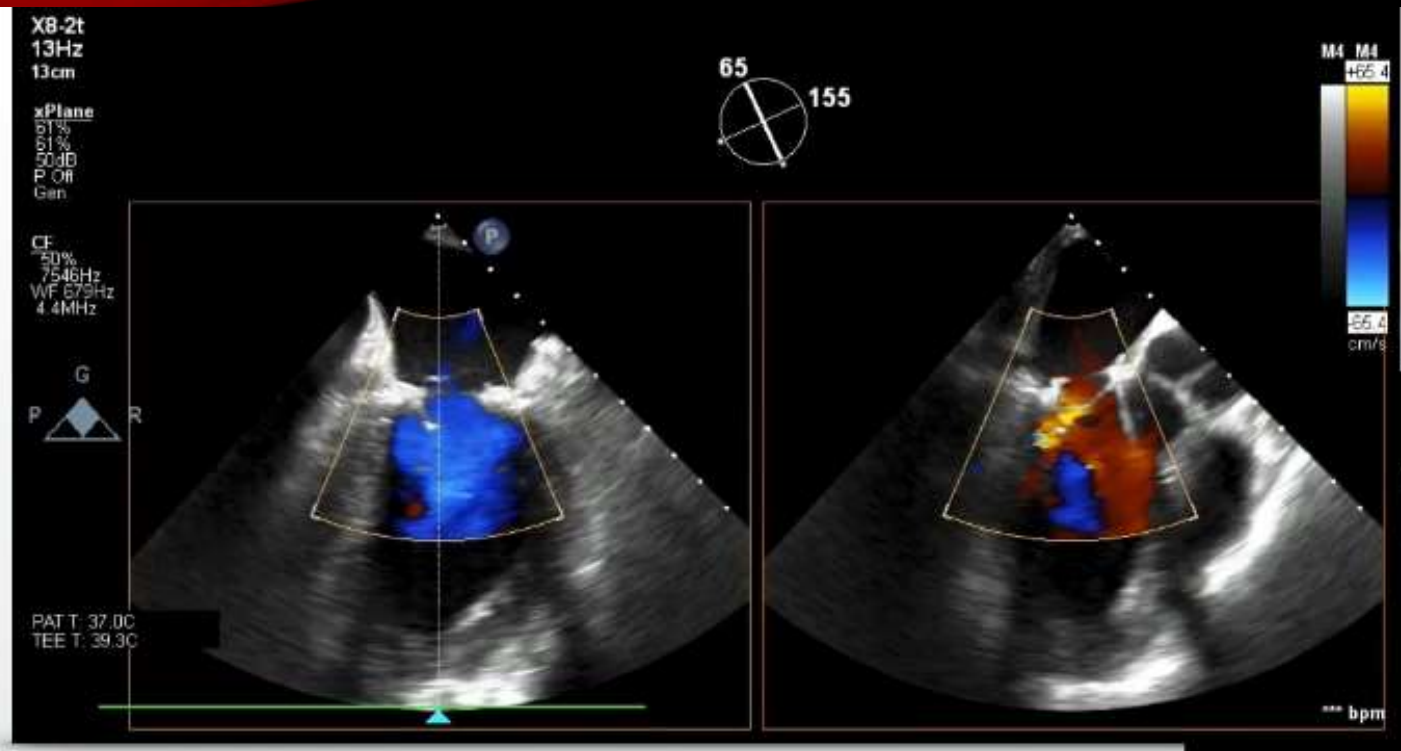
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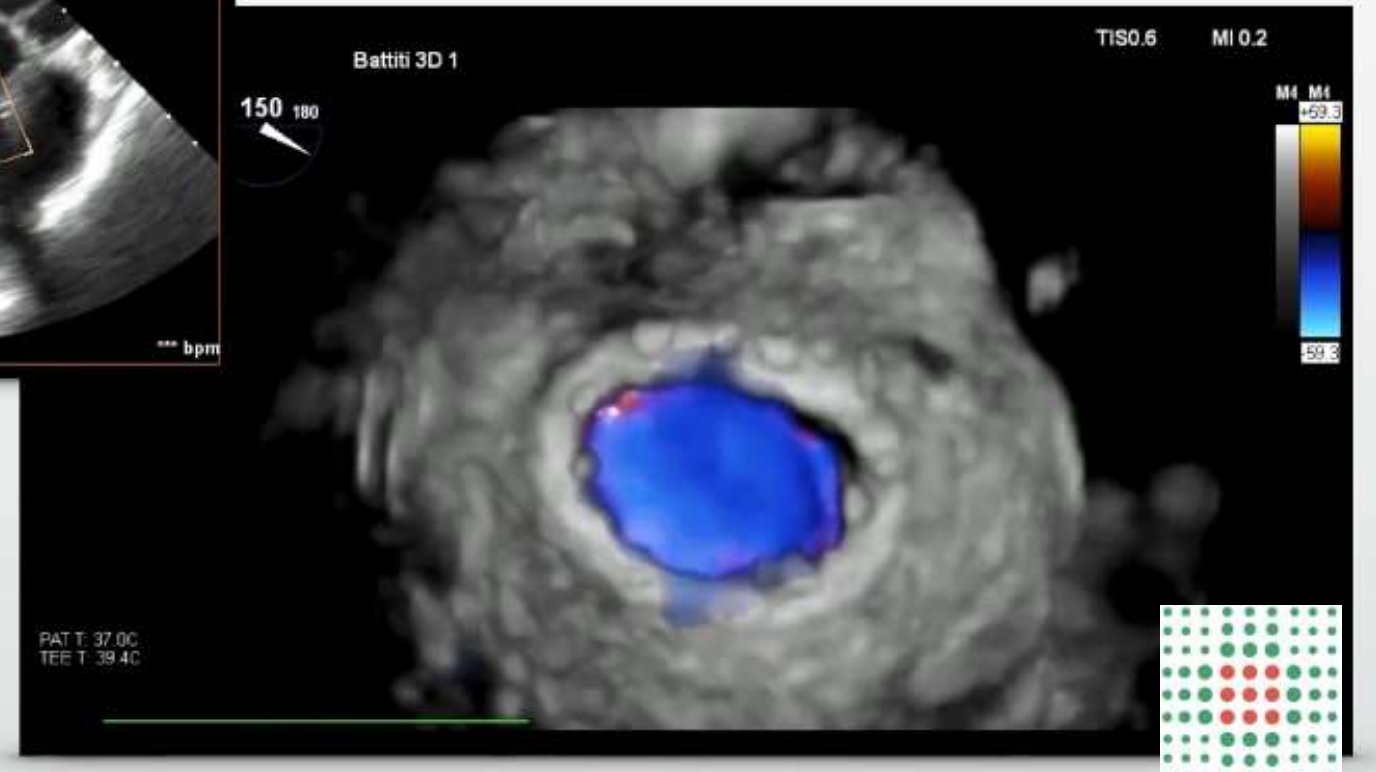
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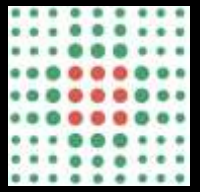
TAKE HOME MESSAGE

IL NUMERO E LA QUALITA' DELLE OPZIONI CHIRURGICHE E TRANSCATETARE NEL TRATTARE LE VALVULOPATIE E' AUMENTATO ESPONENZIALMENTE NEGLI ULTIMI 15 ANNI E QUESTO HA AUMENTATO ANCHE IL NUMERO DI PAZIENTI CHE E' POSSIBILE TRATTARE

IN PAZIENTI DELICATI NON ESISTE LA TERAPIA CHE VA BENE PER TUTTO MA SOLO LA GIUSTA TERAPIA PER IL GIUSTO PAZIENTE

ECCO PERCHE' LE LINEE GUIDA INTERNAZIONALI STRESSANO SUL CONCETTO DI HEART TEAM



TAKE HOME MESSAGE

L'ESITO FINALE DI UNA VALVULOPATIA E' SEMPRE L'INSUFFICIENZA CARDIACA

LA DIAGNOSI TARDIVA O NON CORRETTA DI UNA VALVULOPATIA E' IL MAGGIORE DETERMINANTE DELLA COMPARSA DI UNA **INSUFFICIENZA CARDIACA END-STAGE**

LA COMPARSA DI UNA INSUFFICIENZA CARDIACA NEL PAZIENTE CON VALVULOPATIA INFLUISCE IN MANIERA DETERMINANTE SULL'**OUTCOME** DELLE PROCEDURE TERAPEUTICHE E QUINDI SULLA SOPRAVVIVENZA