

IV CONGRESSO NAZIONALE DI
**ECOCARDIO
CHIRURGIA**
MILANO 10-12 MARZO 2010

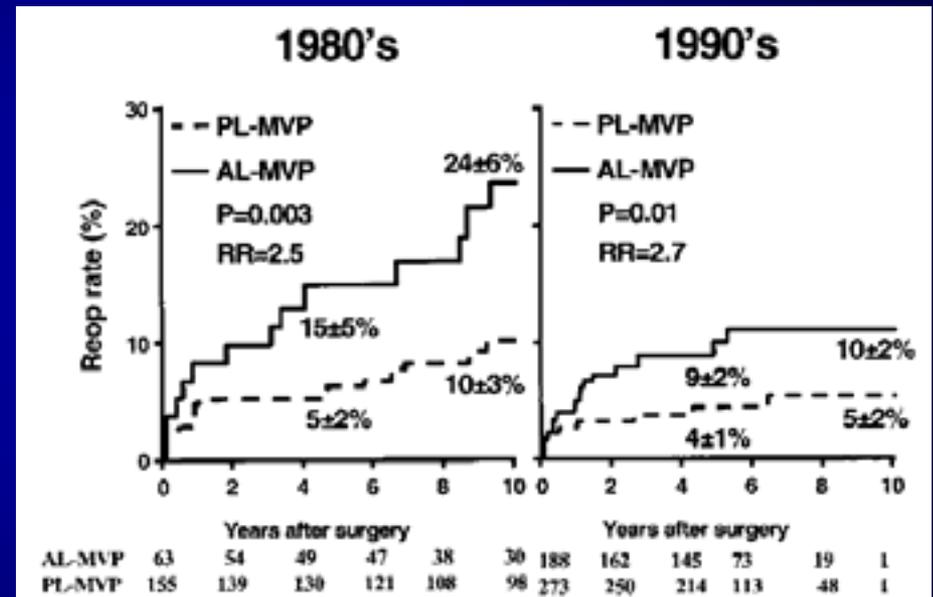
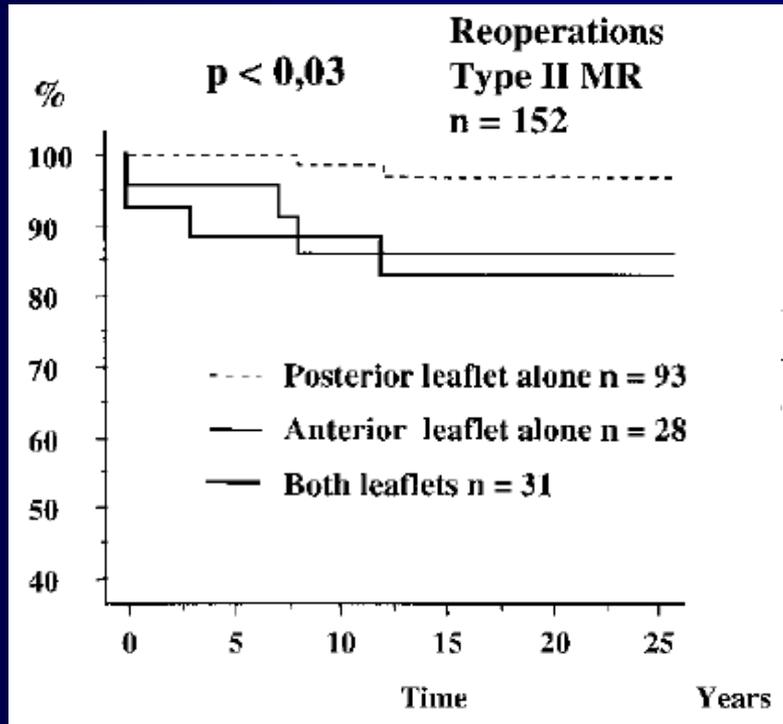
Confrontiamo i risultati a lungo termine della riparazione cardiocirurgica con quelli attesi dalla riparazione percutanea. Proviamo a riflettere insieme...

Lucia Torracca

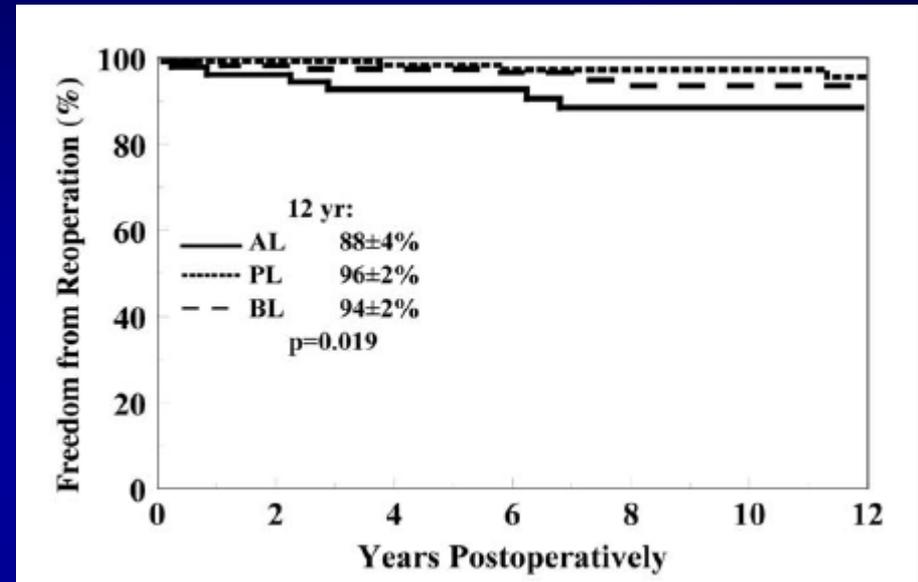
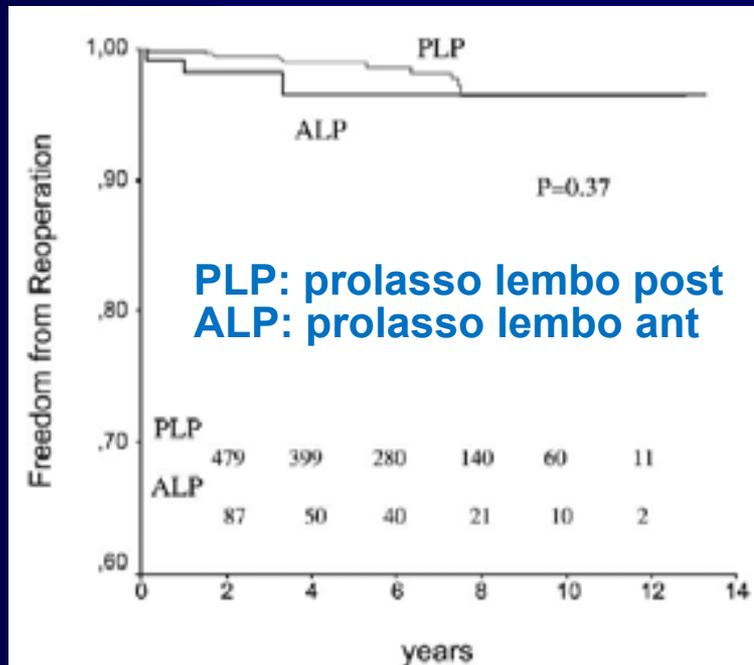
**Direttore Cardiocirurgia
Ospedali Riuniti di Ancona**



Risultati a lungo termine



Introduzione nuove tecniche



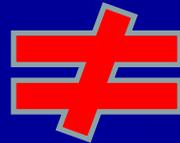
LIMITI

N.b.: follow-up ecocardiografico nel 28,5% dei PLP

N.b.: follow-up ecocardiografico non eseguito in 46 pz
Durata media: 6,5 aa

Ricomparsa d'insufficienza mitralica

“Reoperation rate”



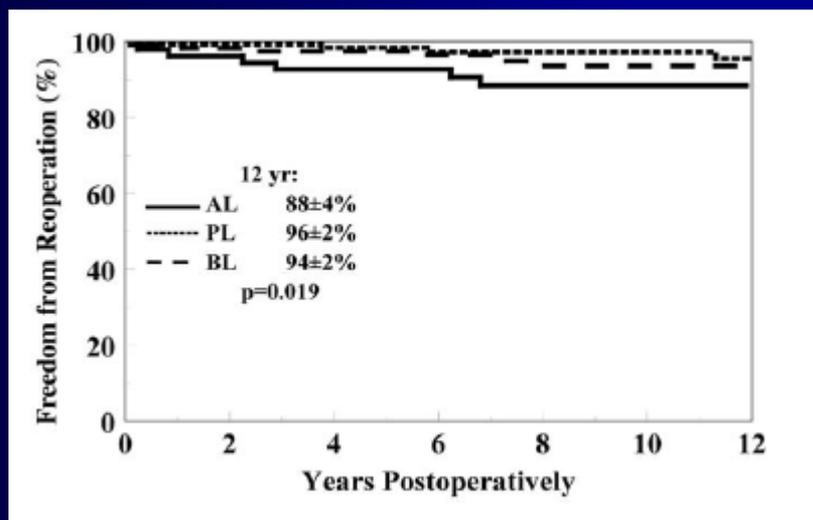
“recurrent mitral regurgitation”

Ricomparsa d'insufficienza mitralica

A comparison of outcomes of mitral valve repair for degenerative disease with posterior, anterior, and bileaflet prolapse

Tirone E. David, Joan Ivanov, Susan Armstrong, Debbie Christie and Harry Rakowski

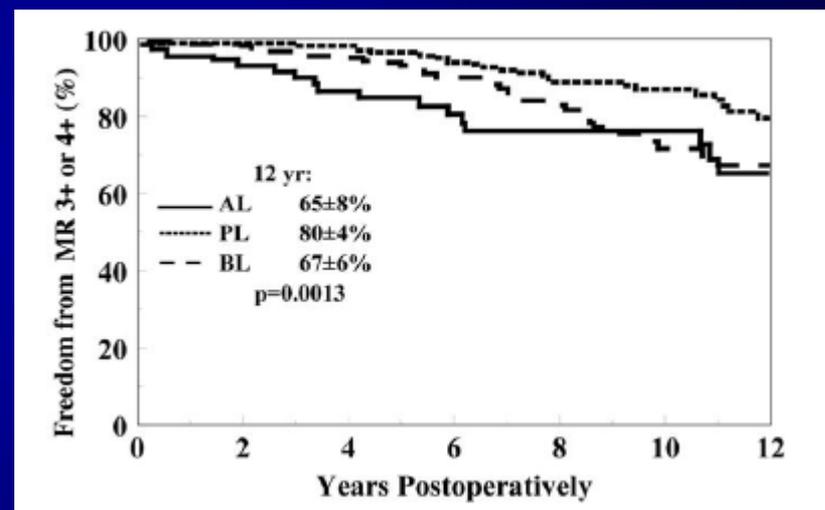
J Thorac Cardiovasc Surg 2005;130:1242-1249



Freedom from reoperation



94±1%



Freedom from MR 3+ o 4+



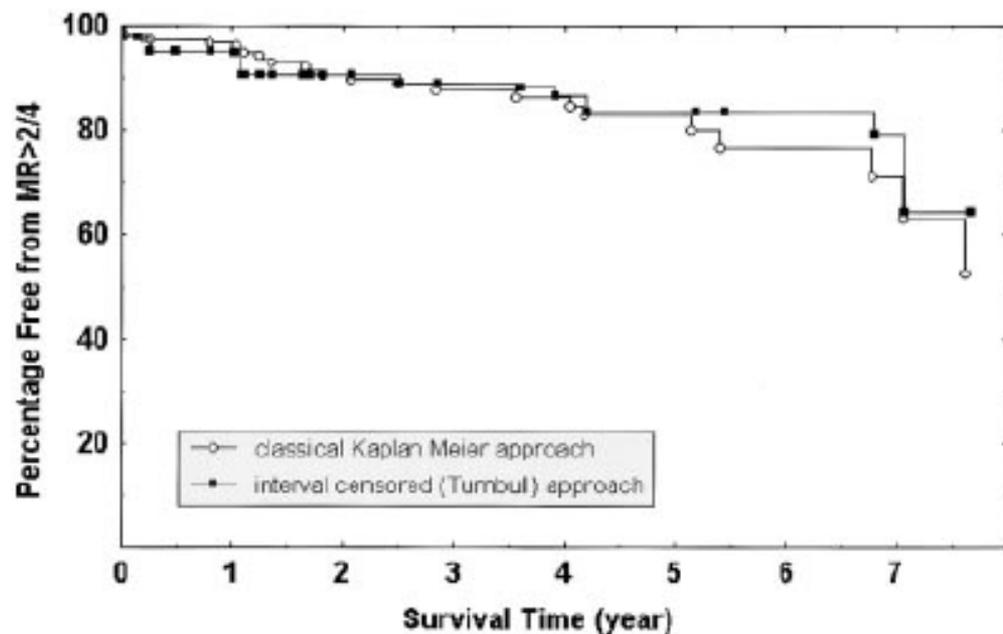
73±3%

Ricomparsa d'insufficienza mitralica

Recurrence of Mitral Valve Regurgitation After Mitral Valve Repair in Degenerative Valve Disease

Willem Flameng, Paul Herijgers and Kris Bogaerts

Circulation 2003;107;1609-1613; originally published online Mar 24, 2003;



242 pz
67% plp

Risultati follow-up

- 1 mese: 98,3% \pm 0,9%
- 5 anni: 82,8% \pm 3,8%
- 7 anni: 71,1% \pm 7,4%

Meccanismo failure

- **Operation related**
- **Disease related**

Fattori di rischio failure

Independent risk factors of late death and reoperation at multivariate analysis

Multivariate analysis	p-value	Risk ratio	95% confidence interval
Late deaths			
Residual NYHA	0.001	4.55	1.85–14.29
Preoperative EF	0.013	1.09	1.02–1.18
Etiology functional	0.018	4.17	1.32–16.67
Etiology ischemic	0.049	3.13	1.01–10.0
Reoperations			
7 POD residual MR	0.005	4.55	1.56–20.0
Age <60 years	0.012	8.7	2.44–37.8
Valvuloplasty (absence of ring)	0.034	4.76	1.79–33.3

Fattori di rischio operatori di ricomparsa di IM > 2

	Cox analysis; mitral regurgitation > 2/4		
	All patients	FED	Barlow
Nonuse of quadrangular resection	0.06	0.02	0.6
Nonuse of sliding plasty	0.002	0.01	0.2
Nonuse of PTFE	0.6	0.2	0.02
Performing chordal shortening	0.01	0.9	0.04
No ring	0.001	0.04	0.004

Linearized recurrence rates (in percent per year)

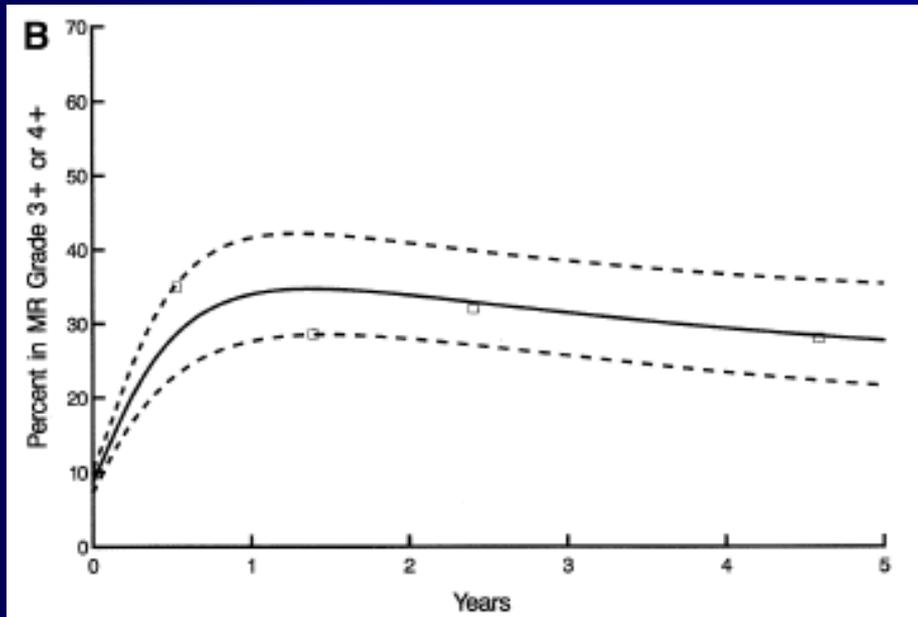
	All patients	FED	Barlow
Overall	3.2	2.6	6.0
Without surgical risk	2.4	2.2	2.9
With surgical risk	4.7	3.6	14.9

Fattori di rischio failure

- **Mancato utilizzo dell'anello**
- **Rigurgito residuo postoperatorio precoce**

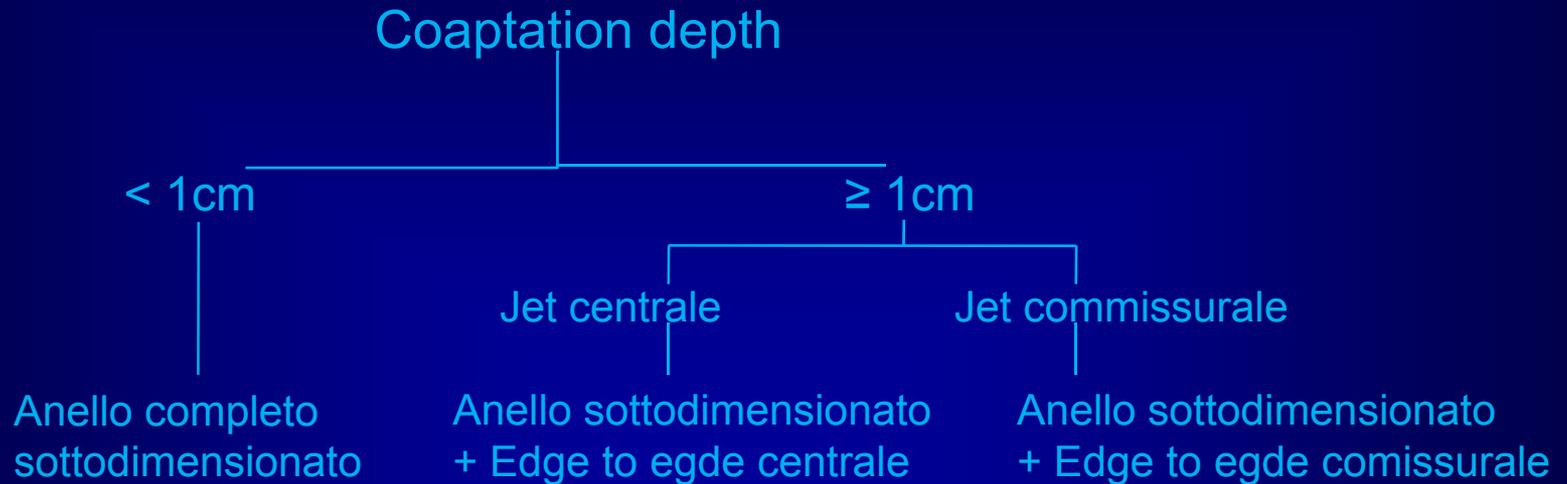
L'insufficienza mitralica funzionale

Recurrent mitral regurgitation after annuloplasty for functional ischemic mitral regurgitation

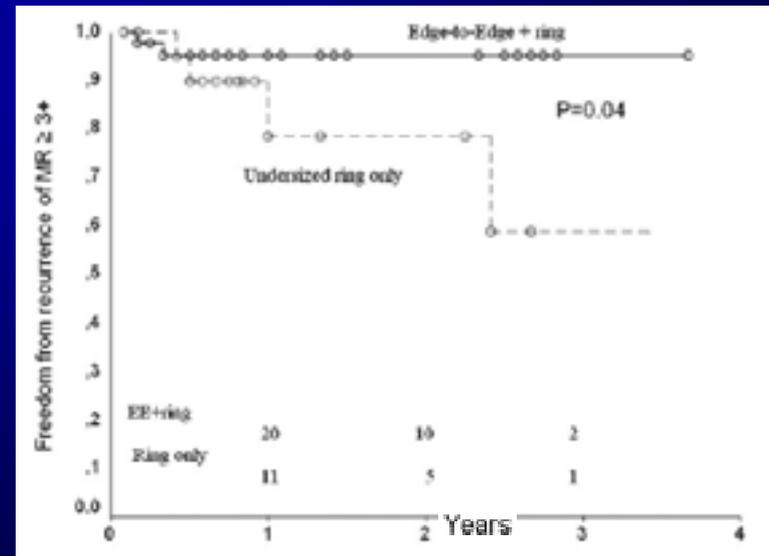


585 pz operati presso la Cleveland Clinic di anuloplastica mitralica associata a CABG (95%)

L'insufficienza mitralica funzionale

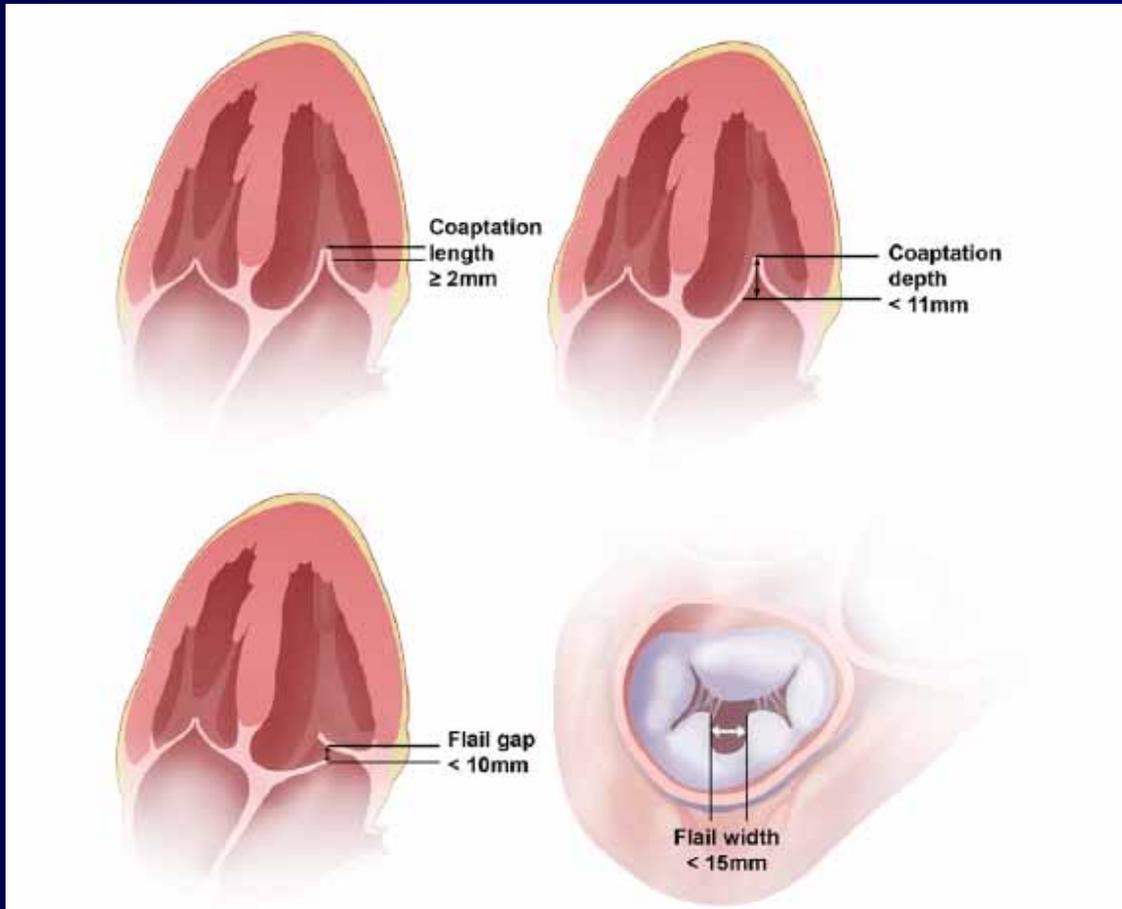


Il tipo di anello utilizzato è stato prevalentemente il rigido completo (88% dei casi)



Trattamento percutaneo

Criteri di selezione anatomici



- Coaptation length $\geq 2\text{mm}$
- Coaptation depth $< 11\text{mm}$
- Flail gap $< 10\text{mm}$
- Flail width $< 15\text{mm}$

Trattamento percutaneo

Definizione di successo procedurale

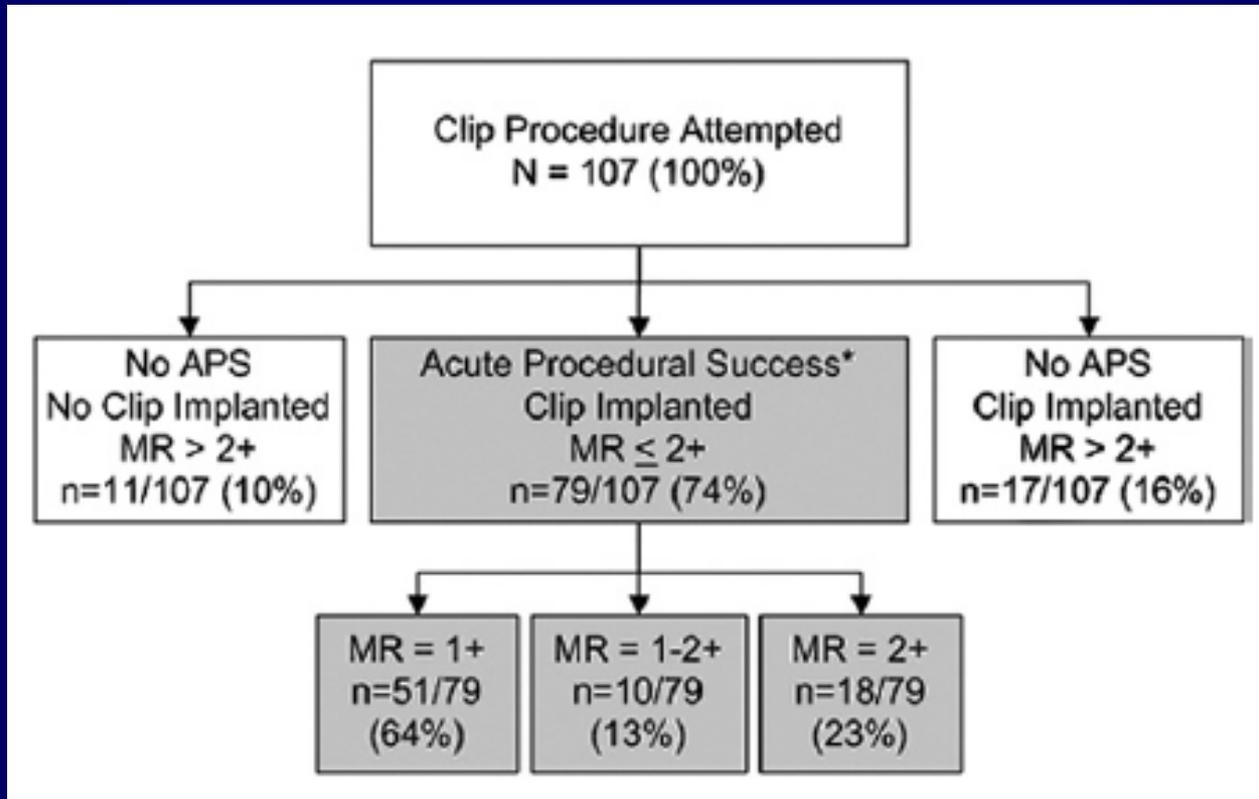
“Successo procedurale acuto”



Riduzione della severità dell'IM (≤ 2) in seguito al posizionamento di una o più clips

Trattamento percutaneo

Risultati



Trattamento percutaneo

Complicanze

In-Hospital Outcomes	Incidence (n = 107)
Death unrelated to MitraClip device	1 (0,9)
Mechanical ventilation > 48 h	2 (1,8)
Bleeding requiring transf \geq 2 U (procedural)	4 (3,7)
Bleeding requiring transf \geq 2 U (post-MV surg)	1 (0,9)
Transseptal complications	3 (2,8)

❖ 1 episodio neurologico risolto dopo 30 gg

Trattamento percutaneo

Chirurgia post-failure

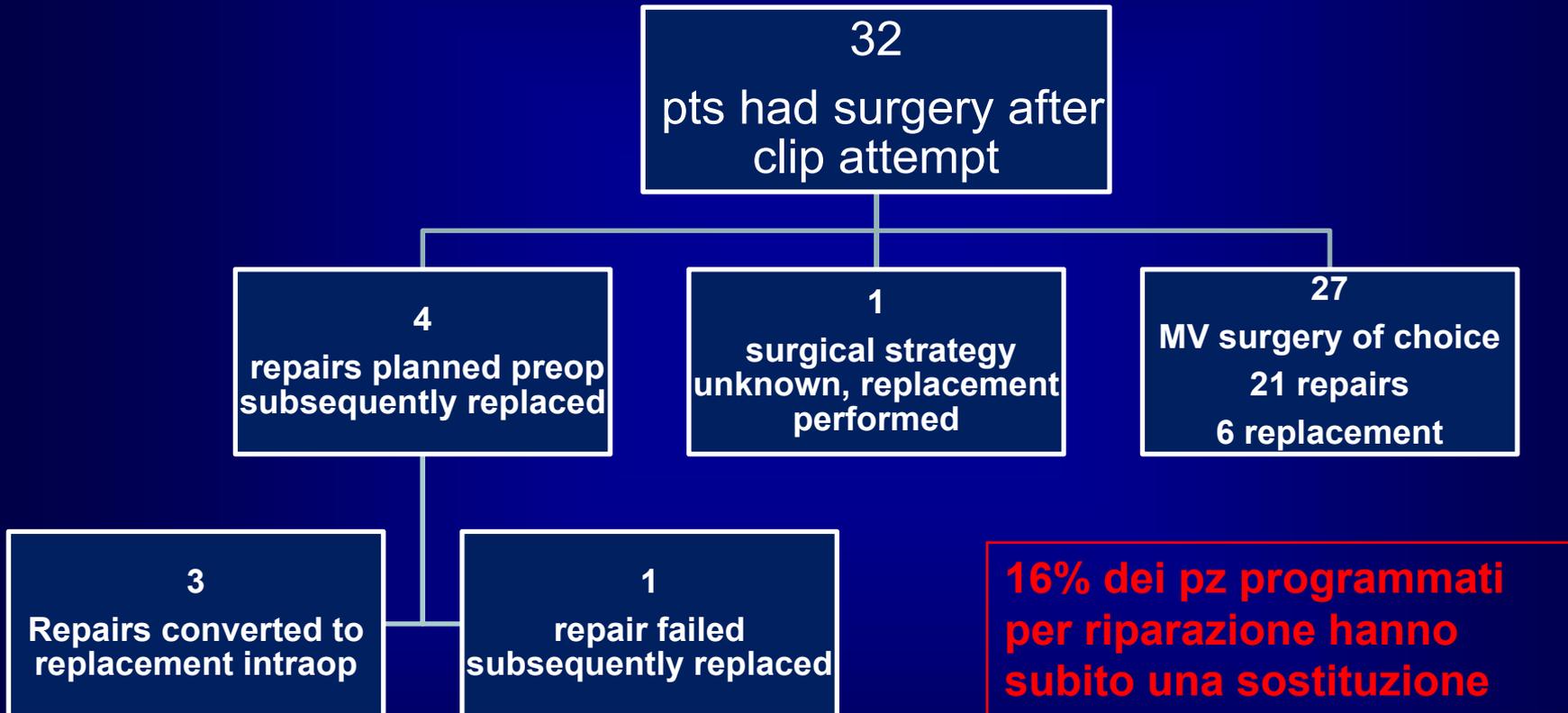
Surgical Revision After Percutaneous Mitral Repair With the MitraClip Device

Michael Argenziano, MD, Eric Skipper, MD, David Heimansohn, MD, George V. Letsou, MD, Y. Joseph Woo, MD, Irving Kron, MD, John Alexander, MD, Joseph Cleveland, MD, Bobby Kong, MD, Michael Davidson, MD, Thomas Vassiliades, MD, Karl Krieger, MD, Ed Sako, MD, Pierre Tibi, MD, Aubrey Galloway, MD, Elyse Foster, MD, Ted Feldman, MD, and Donald Glower, MD; for the EVEREST Investigators

Indications for Surgery, n = 32	Count
No clip implanted	9
Clip implanted	23
Partial clip detachment	10
Less than 30 days	9
30 days or more	1
Mitral regurgitation greater than 2+	9
Residual mitral regurgitation greater than 2+	2
Recurrent mitral regurgitation greater than 2+	7
Other	4
Device malfunction	1
2+ mitral regurgitation and atrial septal defect	2
Suspected mitral stenosis	1

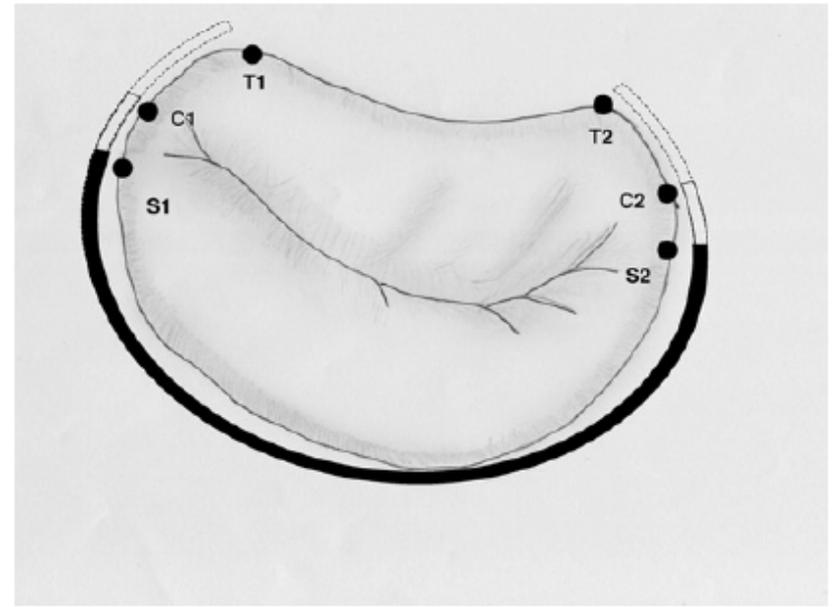
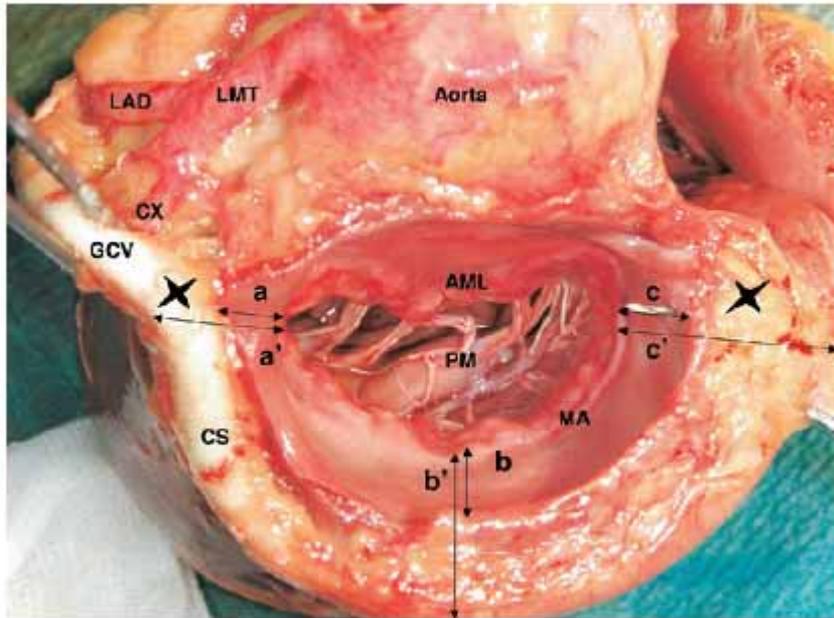
Trattamento percutaneo

Chirurgia post-failure



Trattamento percutaneo

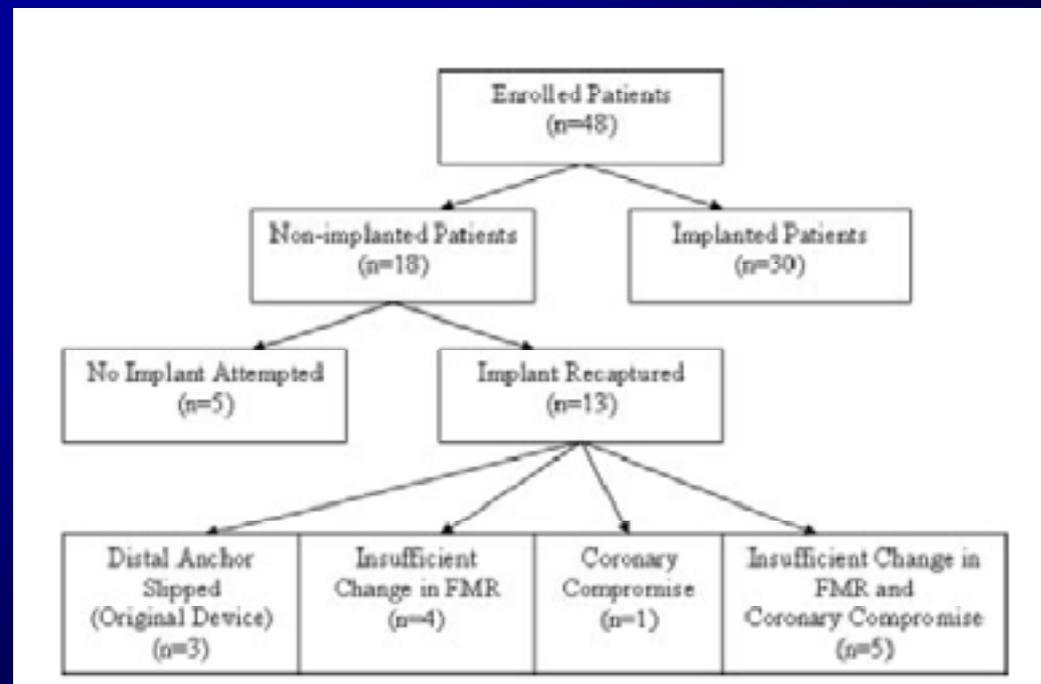
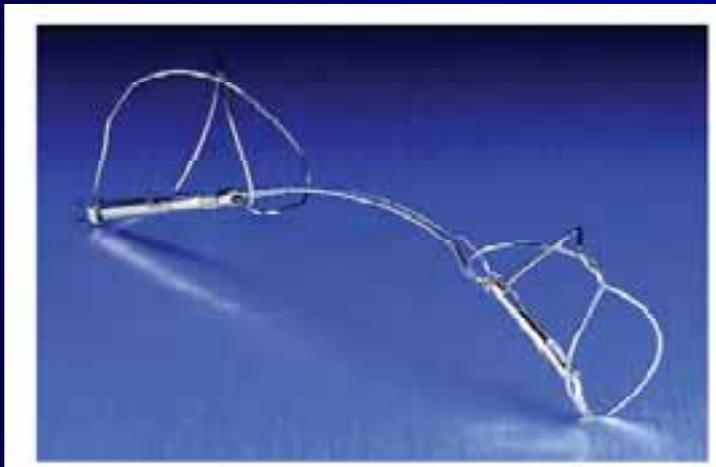
Anuloplastica percutanea: rationale



Trattamento percutaneo

Percutaneous Mitral Annuloplasty for Functional Mitral Regurgitation

Results of the CARILLON Mitral Annuloplasty Device European Union Study



Trattamento percutaneo

Risultati

Table 2. Major Adverse Event Rate (Primary Safety End Point at 30 Days)

Event	Intention to Treat (n=48*), % (n/N)
Death	2.2 (1/46)
Myocardial infarction	6.5 (3/46)
CS dissection/perforation	6.5 (3/46)
Device embolization	0.0 (0/46)
Surgery or PCI related to device	0.0 (0/46)

PCI indicates percutaneous coronary intervention.

*Two patients withdrew from study before the 30-day follow-up.

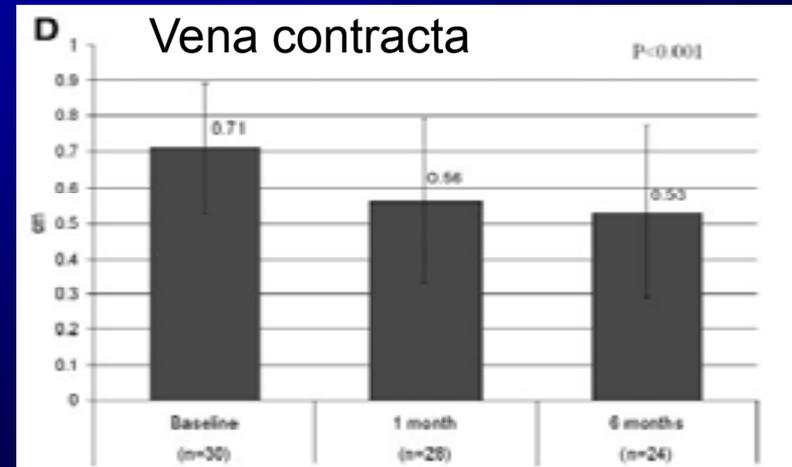
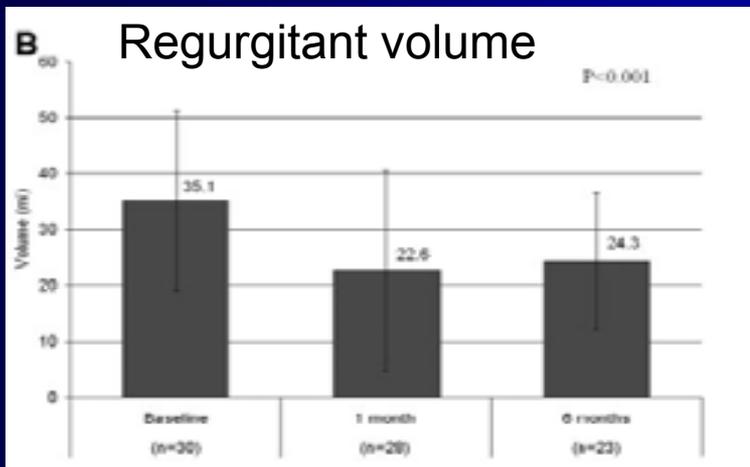
Trattamento percutaneo

Risultati

Table 3. Hemodynamic Changes for 30 Implanted Patients

Parameter	Baseline (n=30)	At 1 mo (n=28)	At 6 mo (n=24)	P
LVEDD, cm	6.7±0.8	6.7±0.8	6.6±0.7	0.92
LVEDV, mL	217±63	204±57	192±46	0.20
LVEF, %	29.8±8	30.7±8	30.8±10	0.54
Mitral annular diameter, cm	4.20±0.4	3.81±0.4	3.78±0.5	<0.001

LVEDD indicates left ventricular end-diastolic diameter; LVEDV, left ventricular end-diastolic volume; and LVEF, left ventricular ejection fraction.

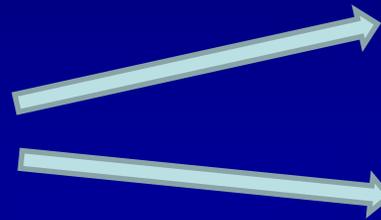


Fattori di rischio failure

- **Mancato utilizzo dell'anello**
- **Rigurgito residuo postoperatorio precoce**

Conclusioni (I)

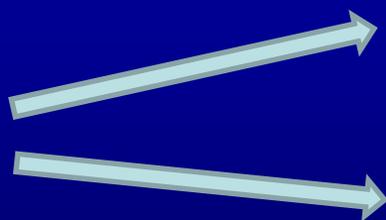
**Trattamento
percutaneo lembi**



No anello

IM residua 2+
(36%*)

**Trattamento
percutaneo anello**



Anello incompleto

Efficacia limitata

Conclusioni (II)

Trattamento percutaneo

- Il successo procedurale è molto inferiore alla chirurgia soprattutto se si considera il bias di selezione dei pz
- La mortalità e la morbidità della procedura sebbene contenute non sono nulle
- Il ricorso alla chirurgia come “rescue” dopo fallimento e’ gravato da una riduzione della probabilita’ di riparazione
- Sulla base dell’esperienza maturata con la chirurgia, la probabilità di stabilità di efficacia nel tempo non appare elevata

Conclusioni (III)

**Sulla base dei dati finora disponibili
il trattamento percutaneo appare
proponibile solo nei pz con rischio
chirurgico molto elevato**