

MITRACLIP

Tips and tricks

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1 – TRATTARE LA PATOLOGIA



European Society
of Cardiology

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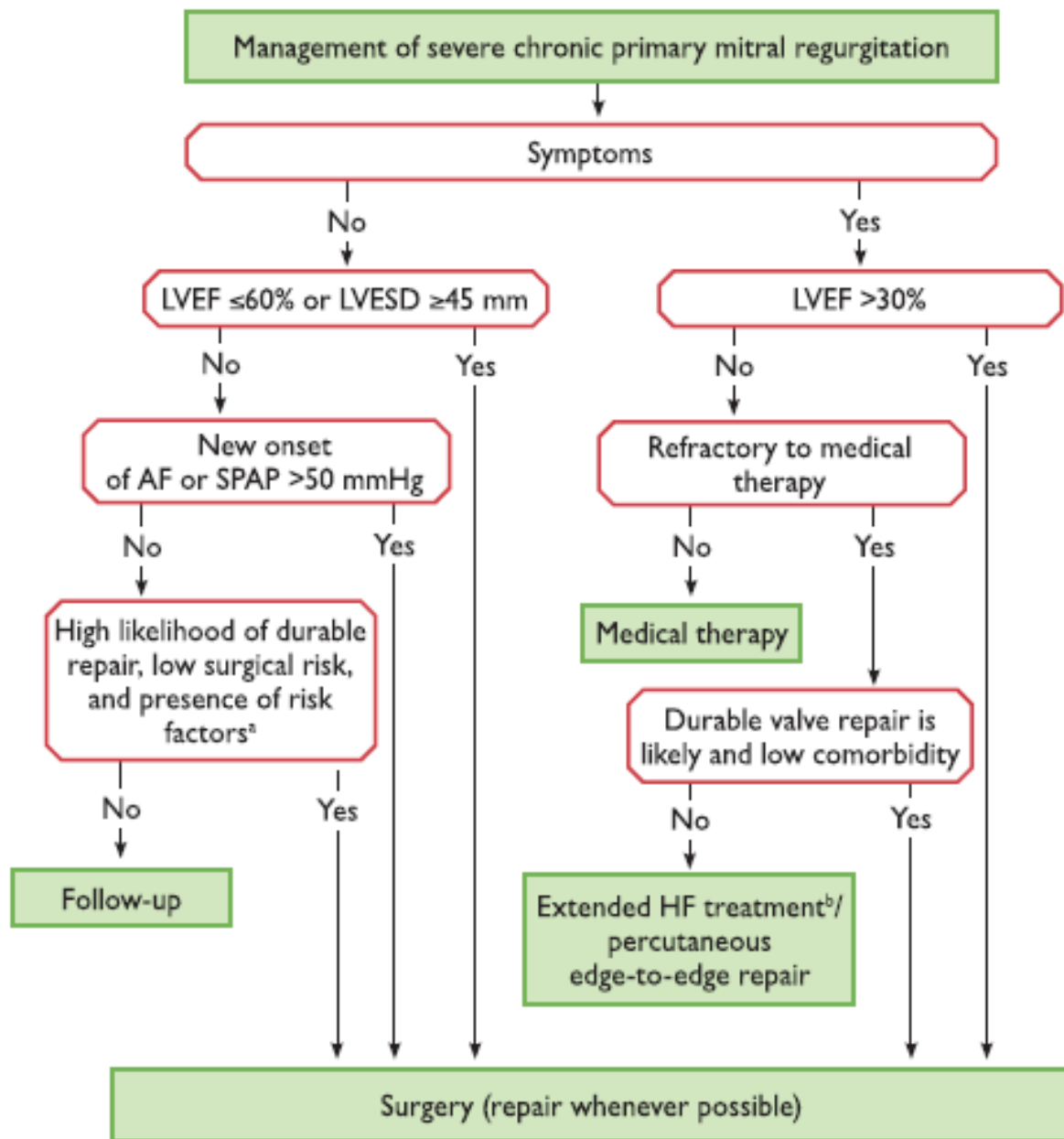
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ESC/EACTS GUIDELINES

2017 ESC/EACTS Guidelines for the management of valvular heart disease

The Task Force for the Management of Valvular Heart Disease of the European Society of Cardiology (ESC) and the European Association for Cardio-Thoracic Surgery (EACTS)

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EMOCLINIC SYMPOSIUM CARDIOFOCUS

SULLE SPONDE DEL TICINO

FMR

Indications for mitral valve intervention in chronic secondary mitral regurgitation^a

Recommendations	Class ^b	Level ^c
Surgery is indicated in patients with severe secondary mitral regurgitation undergoing CABG and LVEF >30%.	I	C
Surgery should be considered in symptomatic patients with severe secondary mitral regurgitation, LVEF <30% but with an option for revascularization and evidence of myocardial viability.	IIa	C
When revascularization is not indicated, surgery may be considered in patients with severe secondary mitral regurgitation and LVEF >30% who remain symptomatic despite optimal medical management (including CRT if indicated) and have a low surgical risk.	IIb	C

When revascularization is not indicated and surgical risk is not low, a percutaneous edge-to-edge procedure may be considered in patients with severe secondary mitral regurgitation and LVEF >30% who remain symptomatic despite optimal medical management (including CRT if indicated) and who have a suitable valve morphology by echocardiography, avoiding futility.

IIb

C

In patients with severe secondary mitral regurgitation and LVEF <30% who remain symptomatic despite optimal medical management (including CRT if indicated) and who have no option for revascularization, the Heart Team may consider a percutaneous edge-to-edge procedure or valve surgery after careful evaluation for a ventricular assist device or heart transplant according to individual patient characteristics.

IIb

C

Pomeriggio: Sessioni parallele

EMOCLINIC SYMPOSIUM CARDIOFOCUS SULLE SPONDE DEL TICINO

A prospective survey of patients with VHD in Europe: The Euro Heart Survey on VHD.

Total population: 5000 pts

Pts with intervention: 1269

Aortic S	33.9	46.6
Aortic R	10.4	10.8
Mitral S	9.5	10.2
Mitral R	24.8	14.1
Multiple	20.2	16.8

.....

DMR: 61% of all MRs

Europa: 900 mln; pts with **DMR** + intrv = **2.5 mln**

Pomeriggio: Sessioni parallele

EuroHeart Failure Survey II (EHFS II): a survey on hospitalized acute heart failure patients: description of population

Europa: 900 mln; **15 mln HF**; 10-20% nei pz 70-80 y.o.

Table 3 Echocardiographic findings by previous history of HF and by clinical class

Variable	All	ADCHF	<i>De novo</i> AHF	Decomp HF	Pulm. oedema	Cardiog. shock	Hypert. HF	Right HF
ECHO available (n)	3062	1928	1134	1991	525	121	328	97
LVEDD (mm), median (IQR)*	58 (51-65)	60 (53-67)	55 (48-60)	59 (52-66)	56 (50-61)	55 (48-61)	56 (50-61)	50 (43-57)
EF% mean (SD)*	38 (15)	36 (15)	42 (16)	37 (15)	40 (14)	33 (15)	44 (13)	48 (16)
LVEF < 30 (%)	29.9	34.6	21.3	34.6	23.1	48.1	12.0	10.1
LVEF 30-44 (%)	35.8	35.8	35.9	35.7	38.4	27.9	37.3	26.6
LVEF ≥ 45 (%)	34.3	29.6	42.8	29.7	38.4	24.0	50.7	63.3
LA (mm), median (IQR)*	47 (42-52)	48 (43-54)	45 (40-50)	48 (42-54)	45 (40-50)	43 (40-47)	45 (41-50)	47 (39-52)
Diastolic dysfunction (%)**								
None or mild	49.5	47.3	53.3	48.2	51.3	43.8	53.6	54.7
Moderate	35.4	36.3	33.8	33.1	40.9	42.5	36.8	32.1
Severe	15.1	16.3	12.9	18.7	7.8	13.7	9.6	13.2
Mitral regurgitation (%)*								
None	20.2	15.7	27.9	18.4	23.4	19.5	22.4	33.0
Mild	36.6	35.1	39.1	34.3	38.8	39.8	43.0	45.7
Moderate	31.2	34.6	25.3	33.3	30.8	28.3	24.9	13.8
Severe	12.1	14.6	7.7	14.0	7.0	12.4	9.7	7.4
Tricuspid regurgitation(%)*								
None	38.6	31.1	51.6	34.3	53.2	44.0	46.3	16.3
Mild	31.4	31.7	30.8	31.0	31.3	33.9	33.2	30.4
Moderate	22.4	27.4	13.9	26.3	13.1	16.5	15.0	25.0
Severe	7.5	9.8	3.7	8.4	2.4	5.5	5.4	28.3

The «unmet need»

- 2000-2008: identificati **5.737** con **MR ≥ 3**
- **1095 pz. con IM severa ed HF** (814 FMR, 226 DMR)
 - 518 operati (~47,3%)
 - 577 non operati (~52%)

- **577 pz NON operati (~52%), Follow-Up a 5 anni:**
 - mortalità → 50%
 - ospedalizzazioni → 90%

Main Factors prohibiting Surgery:

- Impaired LVEF (<30%)
- Multiple comorbidities
- Advanced age

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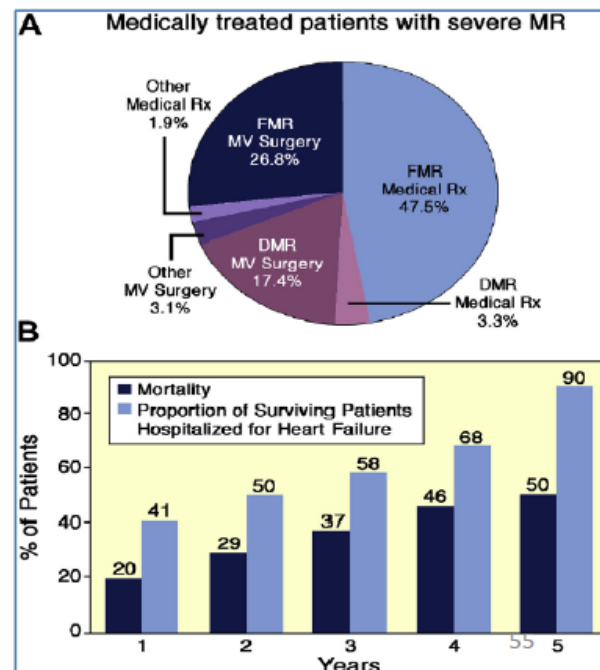
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ISSN 0735-1097/\$36.00

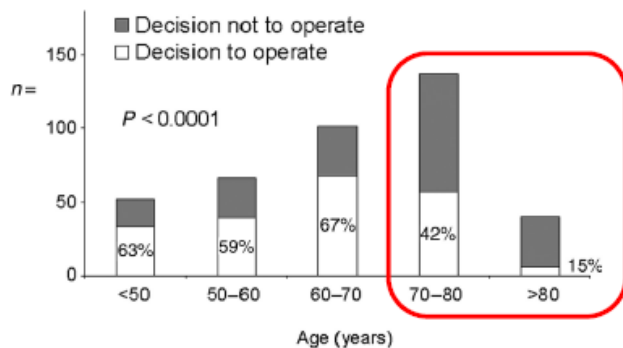
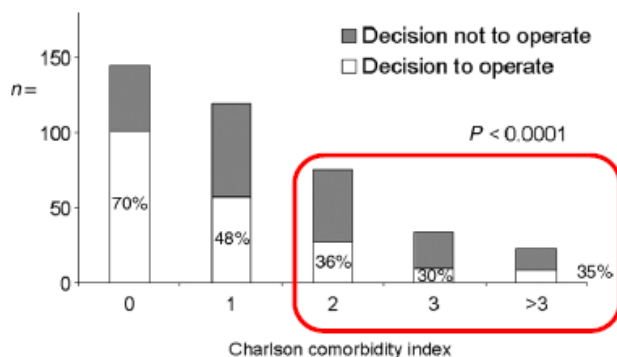
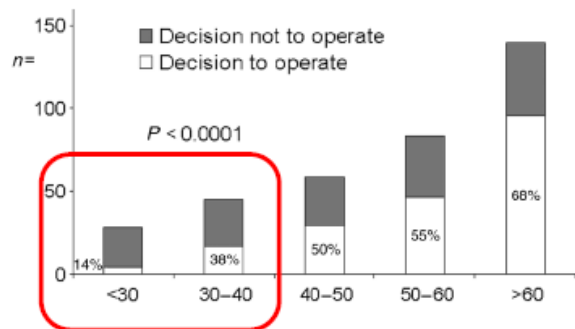
CORRESPONDENCE

Research Correspondence

Prevalence and Outcomes of Unoperated Patients With Severe Symptomatic Mitral Regurgitation and Heart Failure

Comprehensive Analysis to Determine the Potential Role of MitraClip for This Unmet Need



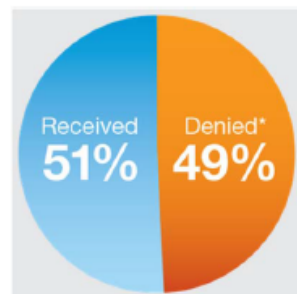


European Heart Journal (2007) 28, 1358-1365
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Clinical research
Valvular heart disease

What are the characteristics of patients with severe, symptomatic, mitral regurgitation who are denied surgery?

Mariana Mirabel¹, Bernard Jung^{1*}, Gabriel Baron², David Messika-Zeitoun¹, Delphine Deltaint¹, Jean-Louis Vanoverschelde³, Eric G. Butchart⁴, Philippe Ravaud², and Alec Vahanian¹



Euro Heart Survey su patologie valvolari
396 pz con IM $\geq 3/4$ sintomatici

2 – Selezione del paziente: TIMING

Patient selection criteria and midterm clinical outcome for MitraClip therapy in patients with severe mitral regurgitation and severe congestive heart failure

Caratteristiche cardiache

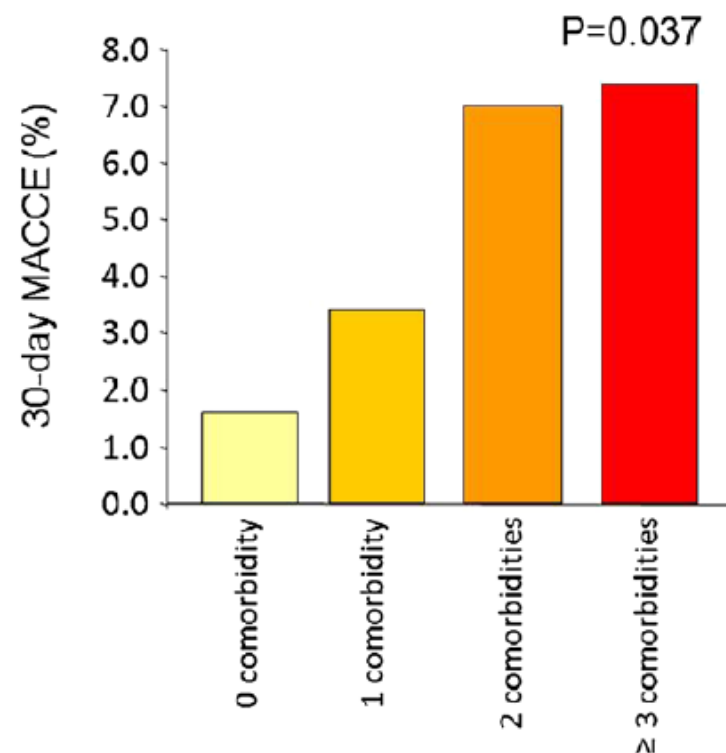
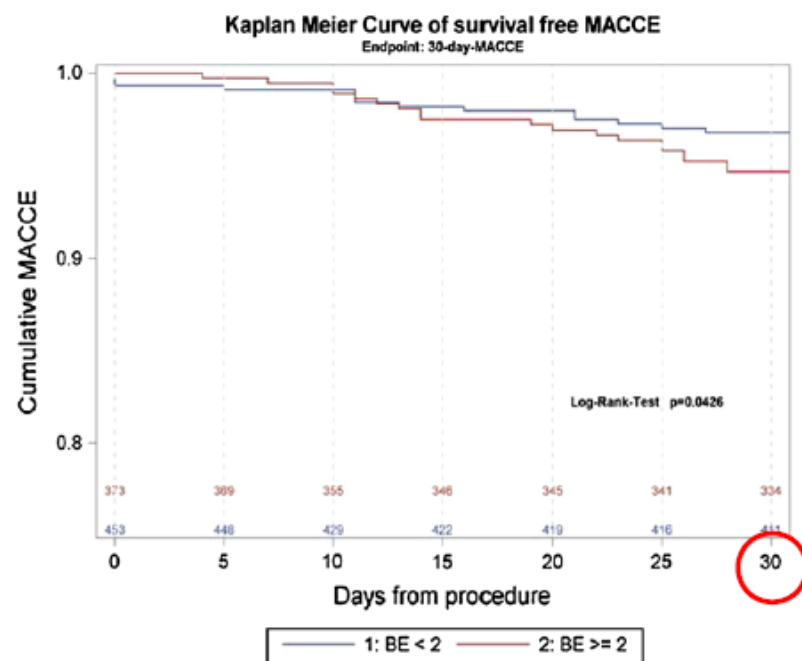
Table 4 Predictors of the combined event (primary endpoint: combination of all-cause mortality, left ventricular assist device implantation, mitral valve surgery, unsuccessful implantation) in univariate and multivariate analysis (Cox model)

Parameter	Univariate analysis		Multivariate analysis: optimized model	
	HR (95% CI)	P-value	HR (95% CI)	P-value
NT-proBNP >10 000 pg/mL	4.6 (2.6–8.2)	<0.001	3.5 (1.9–6.7)	<0.001
Age >80 years	1.8 (1.0–3.3)	0.046	2.2 (1.2–4.2)	0.008
Serum creatinine >150 mmol/L	2.4 (1.4–4.3)	0.002		
NYHA class IV	2.1(1.2–3.7)	0.008	1.7(1.0–3.2)	0.049
TAPSE <15 mm	3.2 (1.8–5.6)	<0.001	1.9(1.0–3.6)	0.038
TR grade >2 +	2.0 (1.0–4.0)	0.052		

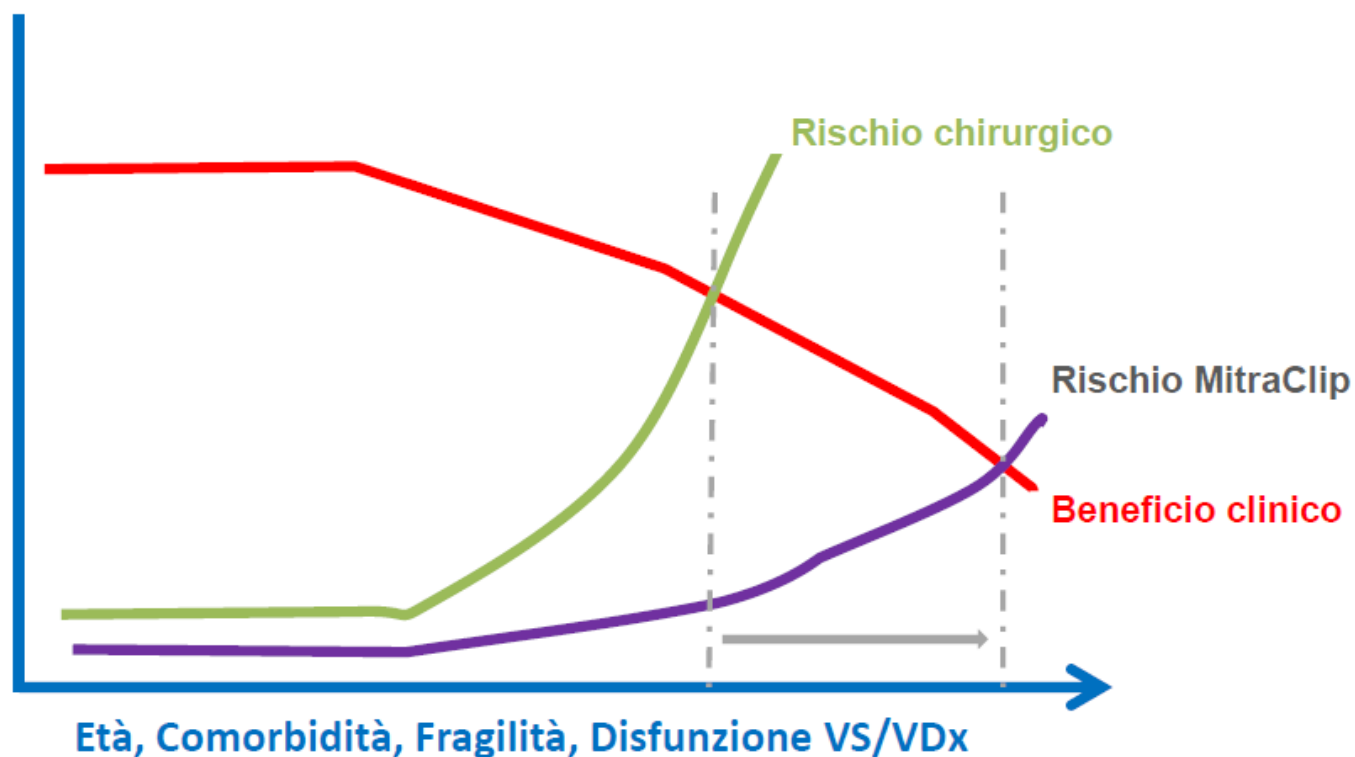
CI, confidence interval; HR, hazard ratio; TAPSE, tricuspid annular plane systolic excursion; TR, tricuspid regurgitation.

Influence of non-cardiac comorbidities on outcome after percutaneous mitral valve repair: results from the German transcatheter mitral valve interventions (TRAMI) registry

Caratteristiche extra-cardiache



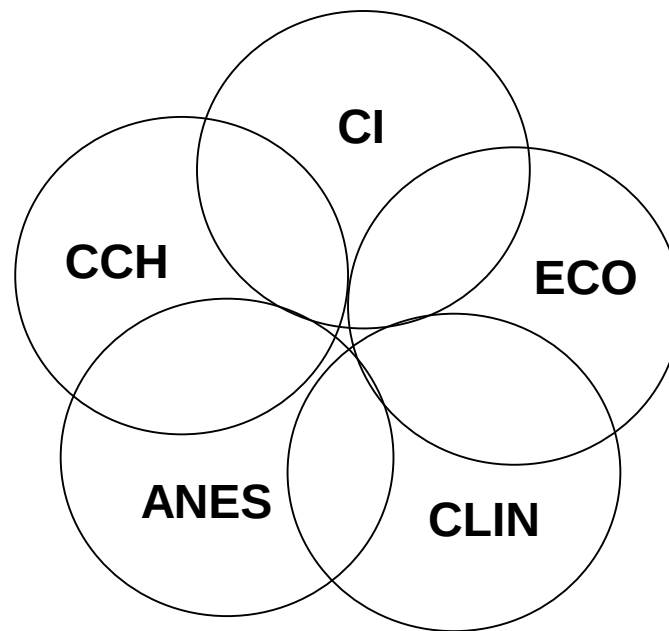
Timing valvuloplastica percutanea nei pz con IM funzionale



3 – STRUTTURARE

Team - Percorso decisionale - Intervento

EMOCLINIC SYMPOSIUM CARDIOFOCUS SULLE SPONDE DEL TICINO



Team ibrido : lavoro sinergico, ottimizzato, veloce

Pomeriggio: Sessioni parallele

Flow Chart decisionale per pazienti con IM

Paziente con IM primaria (degenerativa) o secondaria (funzionale)

Interno

Centro Inviante

TTE /TEE

TTE /TEE in sede

Valutazione Heart Team

Indicazione a riparazione valvolare secondo linee guida? (ESC/EACTS 2017)

Paziente con profilo di rischio basso / accettabile per intervento CCH?

Indicazione CCH

Intervento CCH

Valvola adatta a edge to edge repair?

T.Med / EF / VAD / altro

Indicazione MITRACLIP

Impianto MC

Flow Chart decisionale per pazienti con IM

Paziente con IM primaria (degenerativa) o secondaria (funzionale)

Interno

Centro Inviante

TTE / TEE

TTE / TEE in sede

Valutazione Heart Team

7-10gg

Paziente a riparazione valvolare secondo linee guida? (ESC/EACTS 2017)

Paziente con profilo di rischio basso / accettabile per intervento CCH?

Indicazione CCH

Intervento CCH

T.Med / EF / VAD / altro

7-15gg 7-21gg

Valvola adatta a edge to edge repair?

Indicazione MITRACLIP

Impianto MC

4 – Conoscere i livelli di DIFFICOLTA'

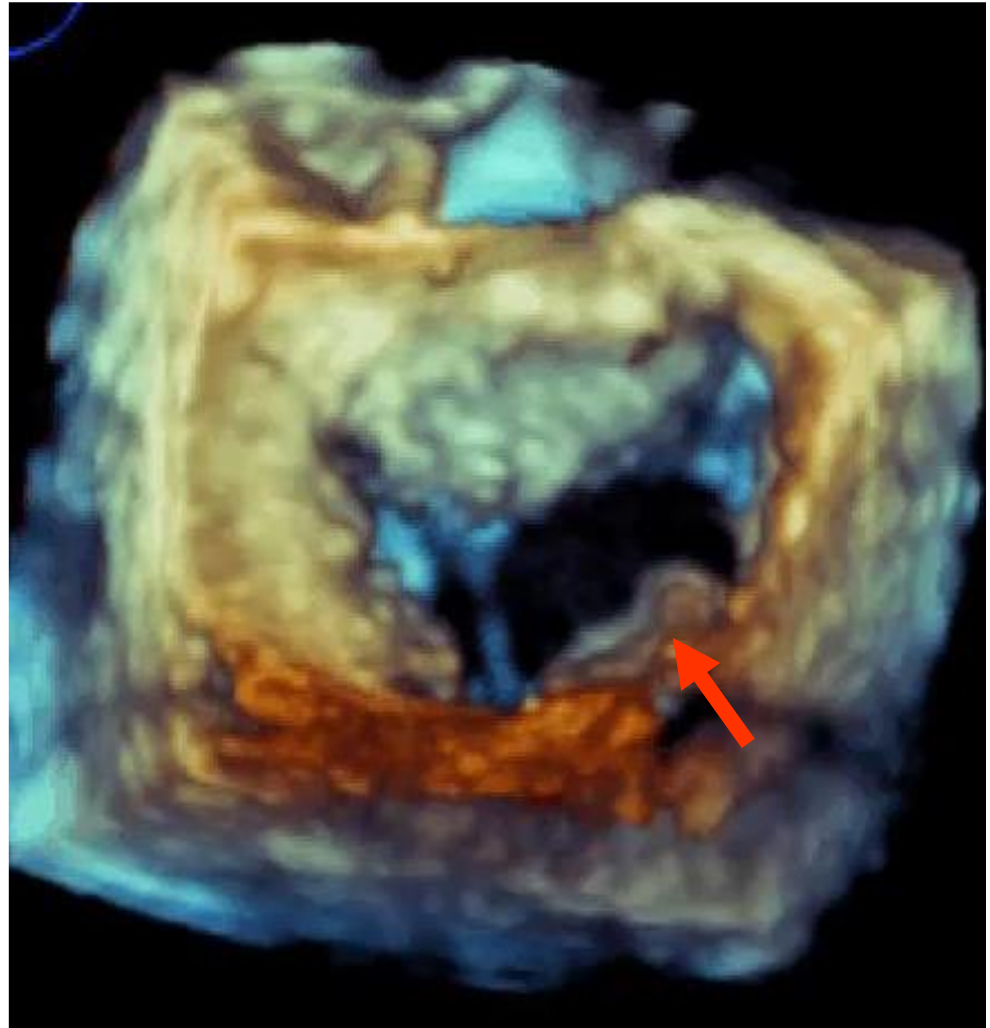
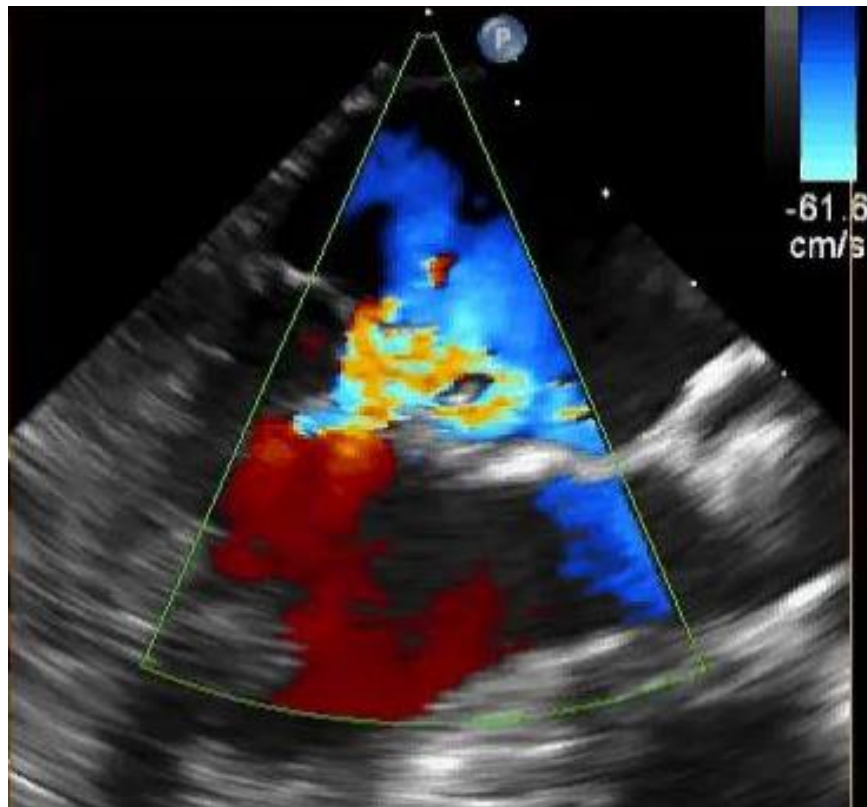
EMOCLINIC SYMPOSIUM CARDIOFOCUS SULLE SPONDE DEL TICINO

Optimal	Easy	Limited suitable	Inappropriate	Hard
Pathology in segment 2		Pathology in segment 1 or 3	Leaflet perforation or cleft	
No calcification		- Slight calcification outside the grasping area - Ring calcification - Anuloplasty with ring	Severe calcification	
Valve area $>4\text{cm}^2$		Valve area $>3\text{ cm}^2$ & good leaflet mobility	Mitral stenosis ($< 3\text{cm}^2$, gradient $>5\text{mmHg}$)	
Length of the posterior leaflet $> 10\text{mm}$		Length of the posterior leaflet 7-10mm	Length of the posterior leaflet $< 7\text{mm}$	
Coaptation depth $< 11\text{mm}$		Coaptation depth $>11\text{mm}$		
Normal thickness and mobility of the leaflets		Restriction (Carpentier IIIB)	Rheumatic thickening and restriction (Carpentier IIIA)	
MR with prolaps Flail size $< 15\text{mm}$ Flail gap $< 10\text{mm}$		Flail size $> 15\text{mm}$ only with large mitral aulus and option for more than 1 clip	Barlows disease	

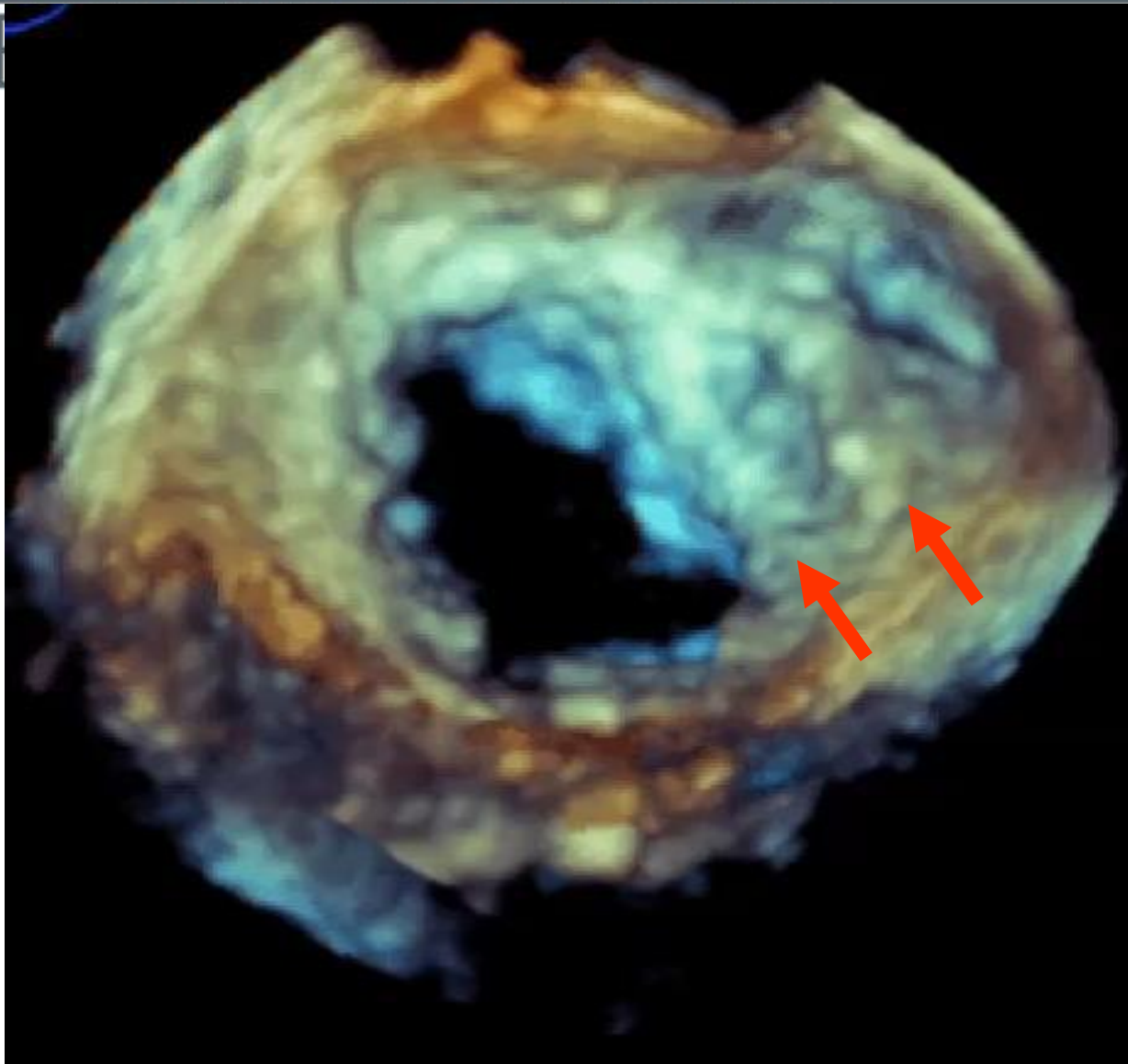
Pomeriggio: Sessioni parallele

EMOCLINIC SYMPOSIUM CARDIOFOCUS SULLE SPONDE DEL TICINO

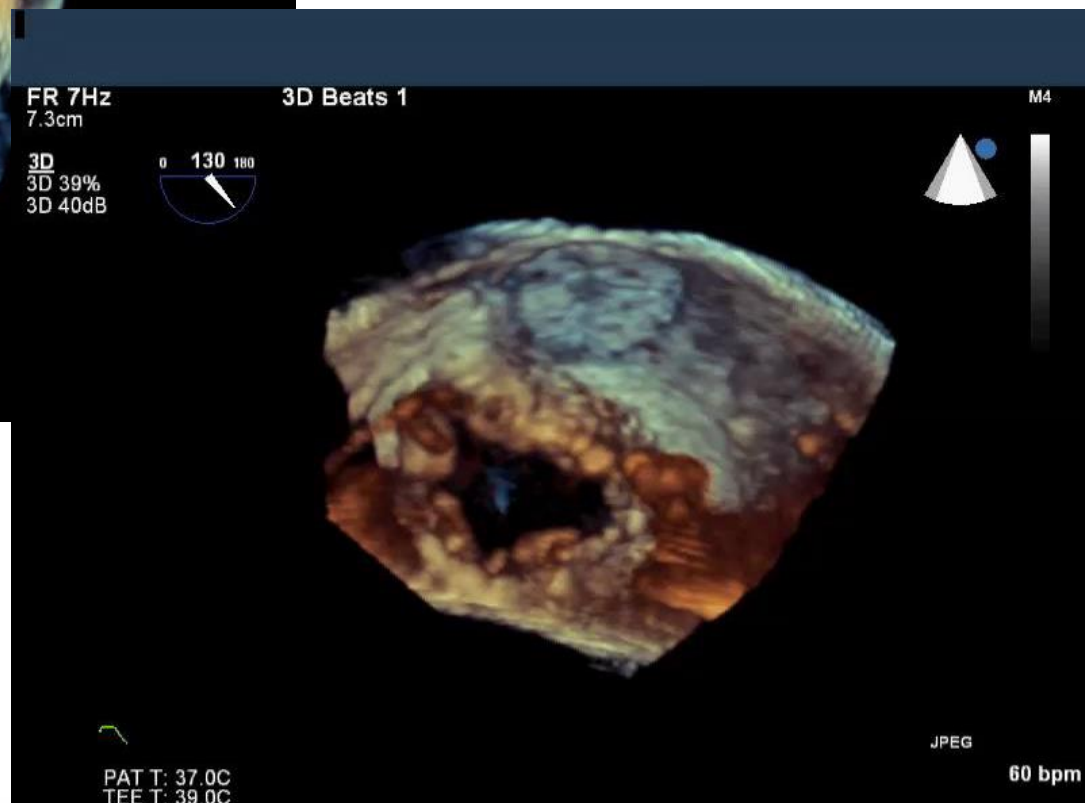
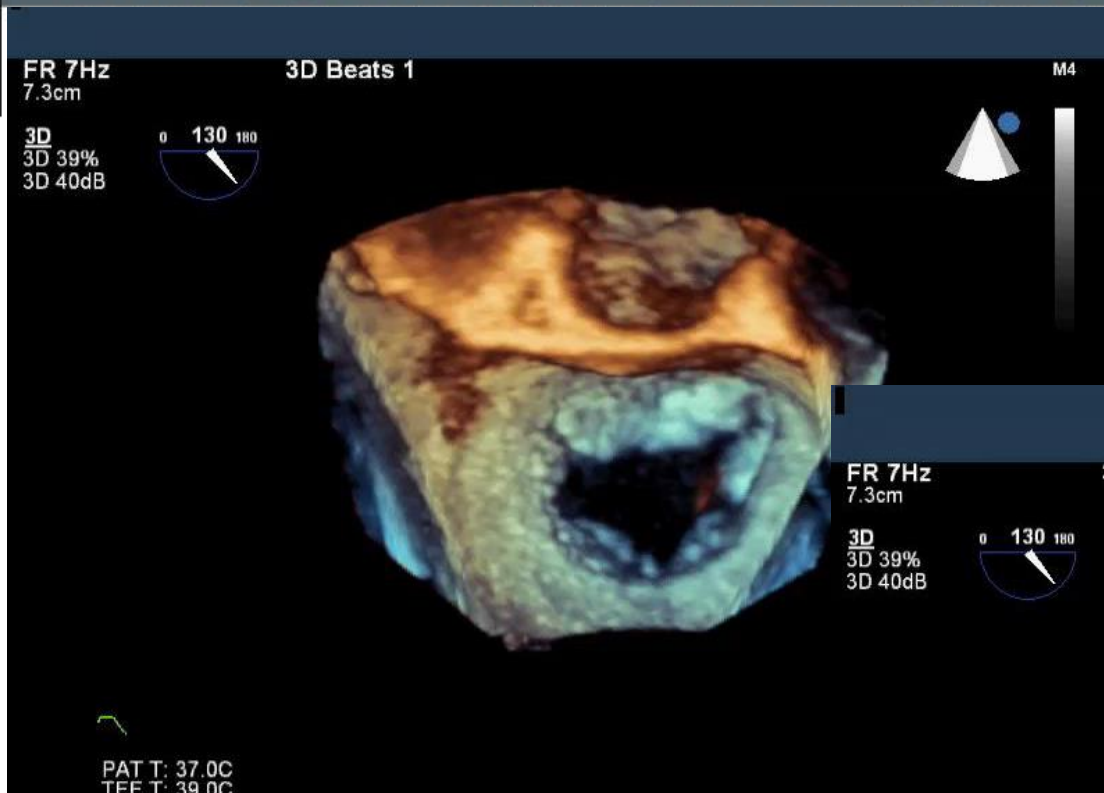
M.R., uomo, 83yo, prolasso P3.



Pomeriggio: Sessioni parallele



EMOCLINIC SYMPOSIUM CARDIOFOCUS



FG, donna, 76 anni, cleft P2.

Pomeriggio: Sessioni parallele

EMOCLINIC SYMPOSIUM CARDIOFOCUS

SUL



Pomeriggio: Sessioni parallele

5 – puntura TRANS-SETTALE

EMOCLINIC SYMPOSIUM CARDIOFOCUS



ECO guided + linea pressione + lavaggio

Attenzione a tenting eccessivo per rischio rottura (= perdita supporto e ASD)

Manovre compensatorie GAIN and LOOSE

Pomeriggio: Sessioni parallele

6 – Scegliere la giusta protesi

NT e NTR

XTR

NT “chubby”

(non ancora sigla ufficiale)

7 – TRICKS procedurali

STOP VENTILAZIONE

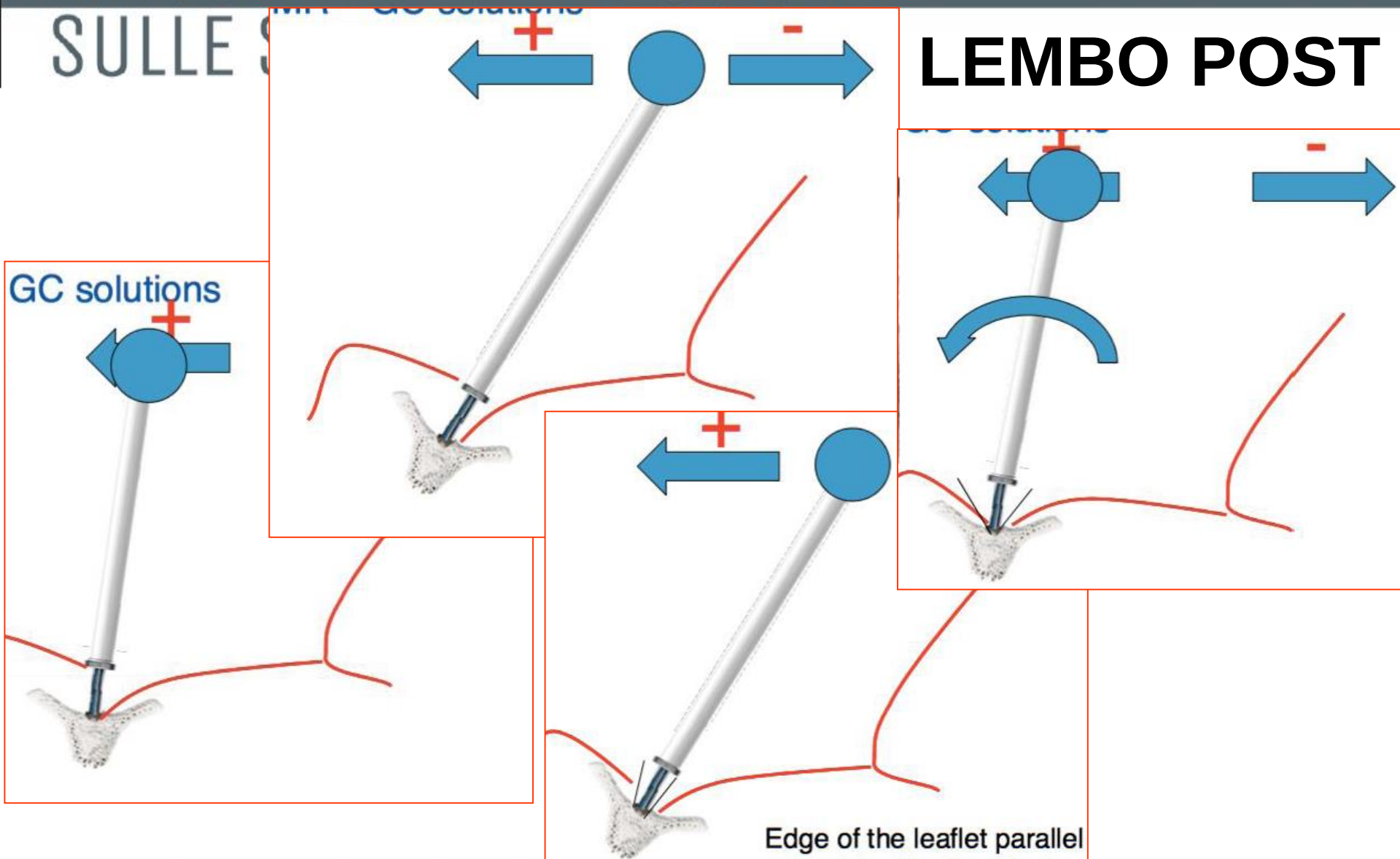
RAPID PACING

Adenosina

SULLE S

LEMBO POST

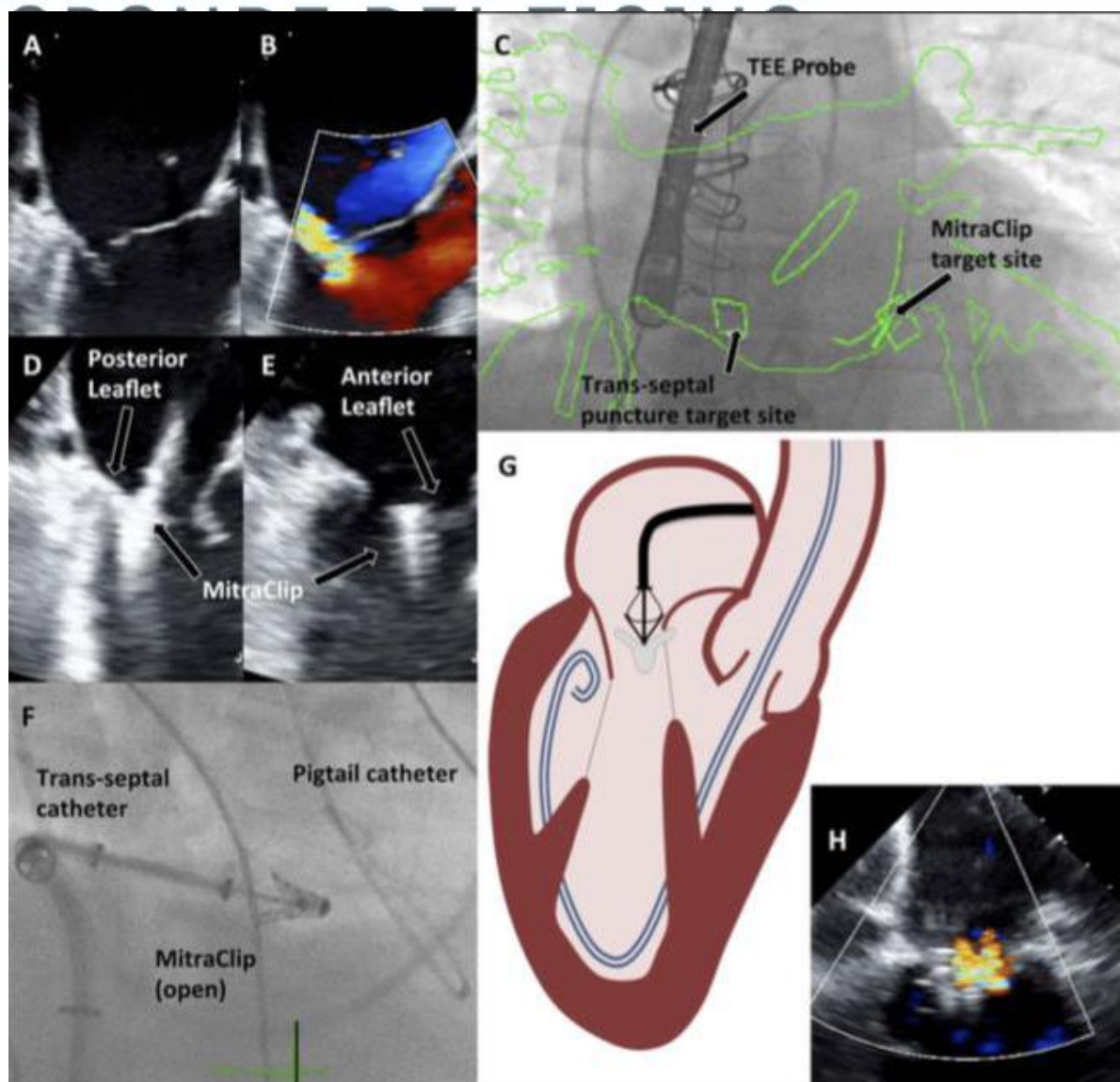
GC solutions



Pomeriggio: Sessioni parallele

EMOCLINIC SYMPOSIUM CARDIOFOCUS

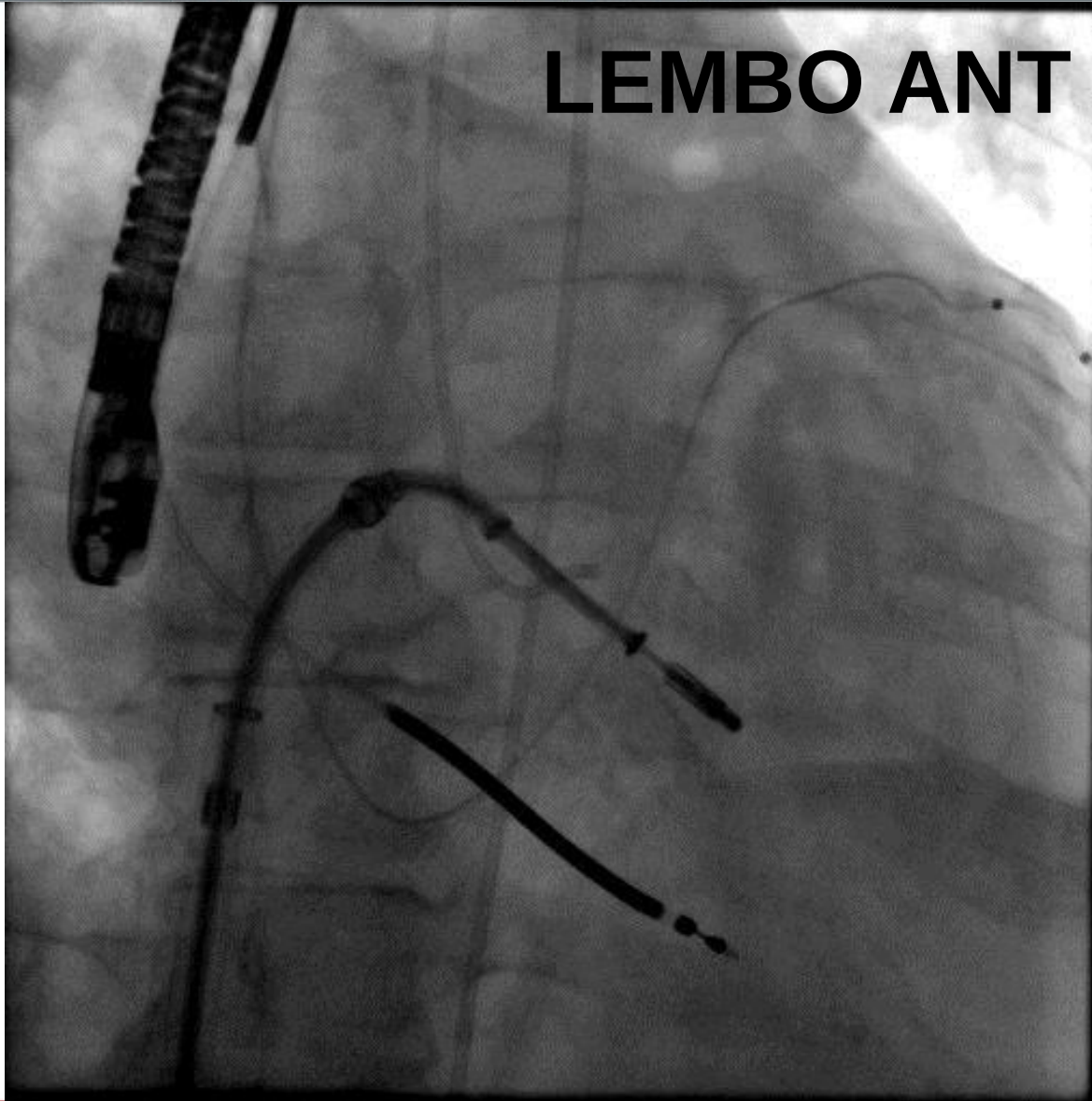
SULLE



Pomeriggio: Sessioni parallele

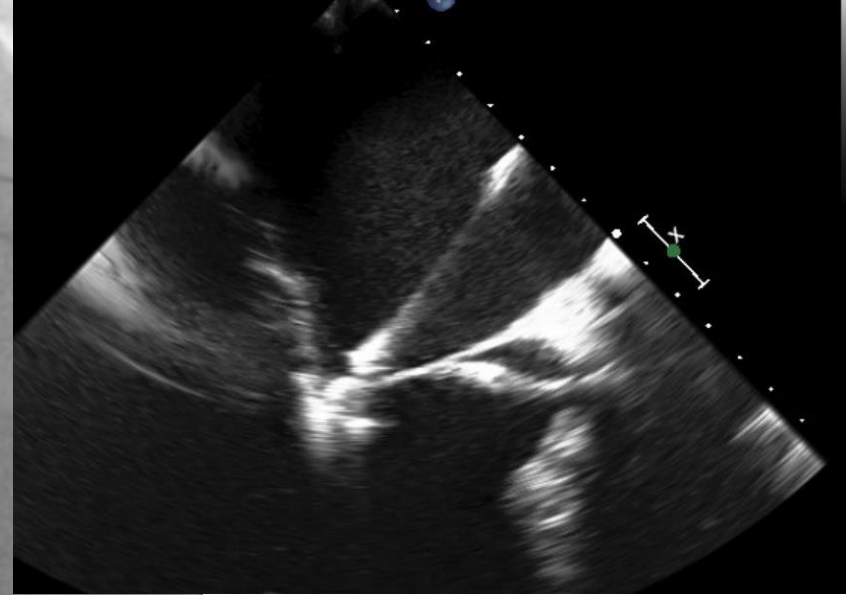
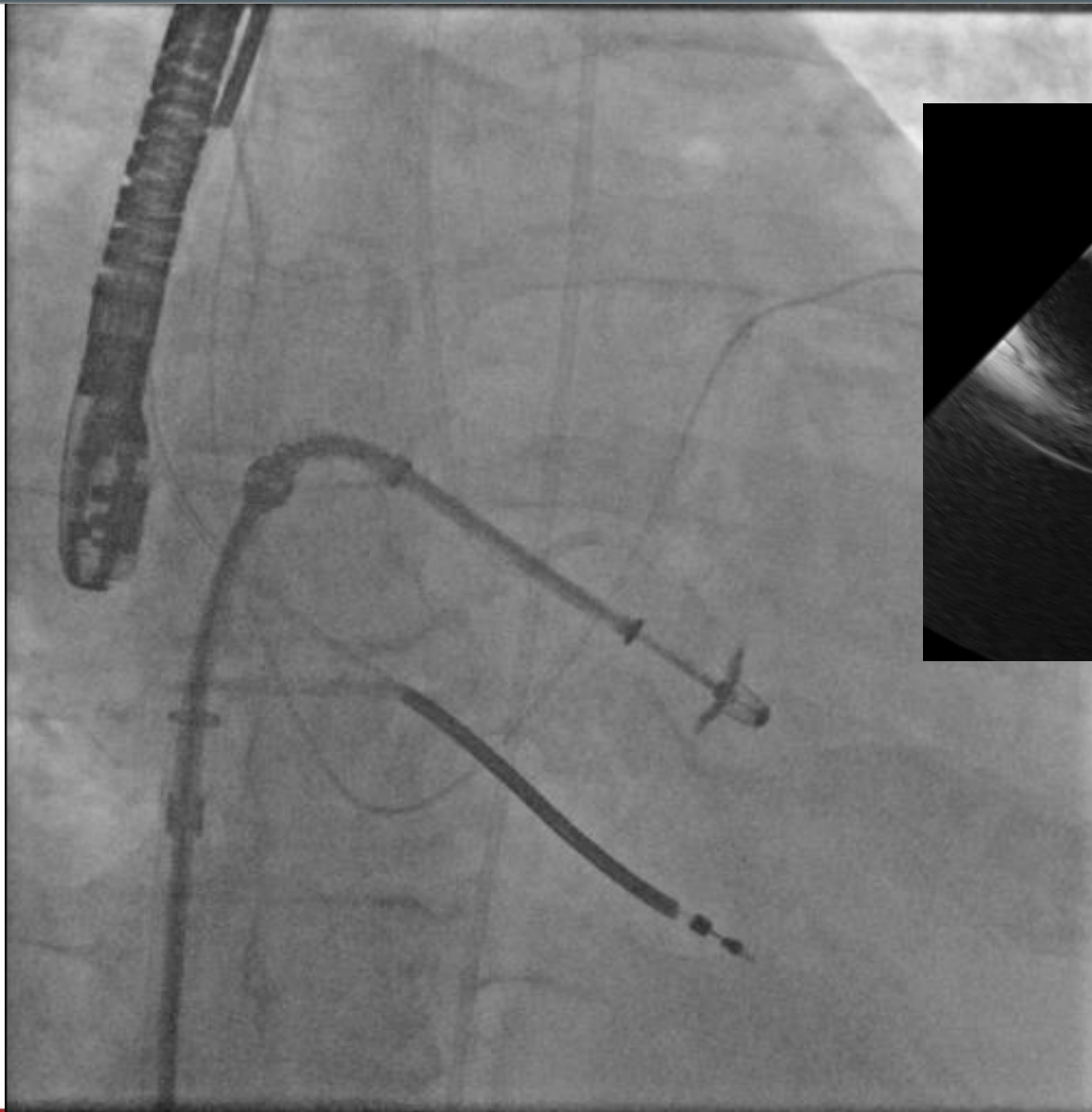
EMOCLINIC SYMPOSIUM CARDIOFOCUS SULLE

LEMBO ANT



Pomeriggio: Sessioni parallele

EMOCLINIC SYMPOSIUM CARDIOFOCUS

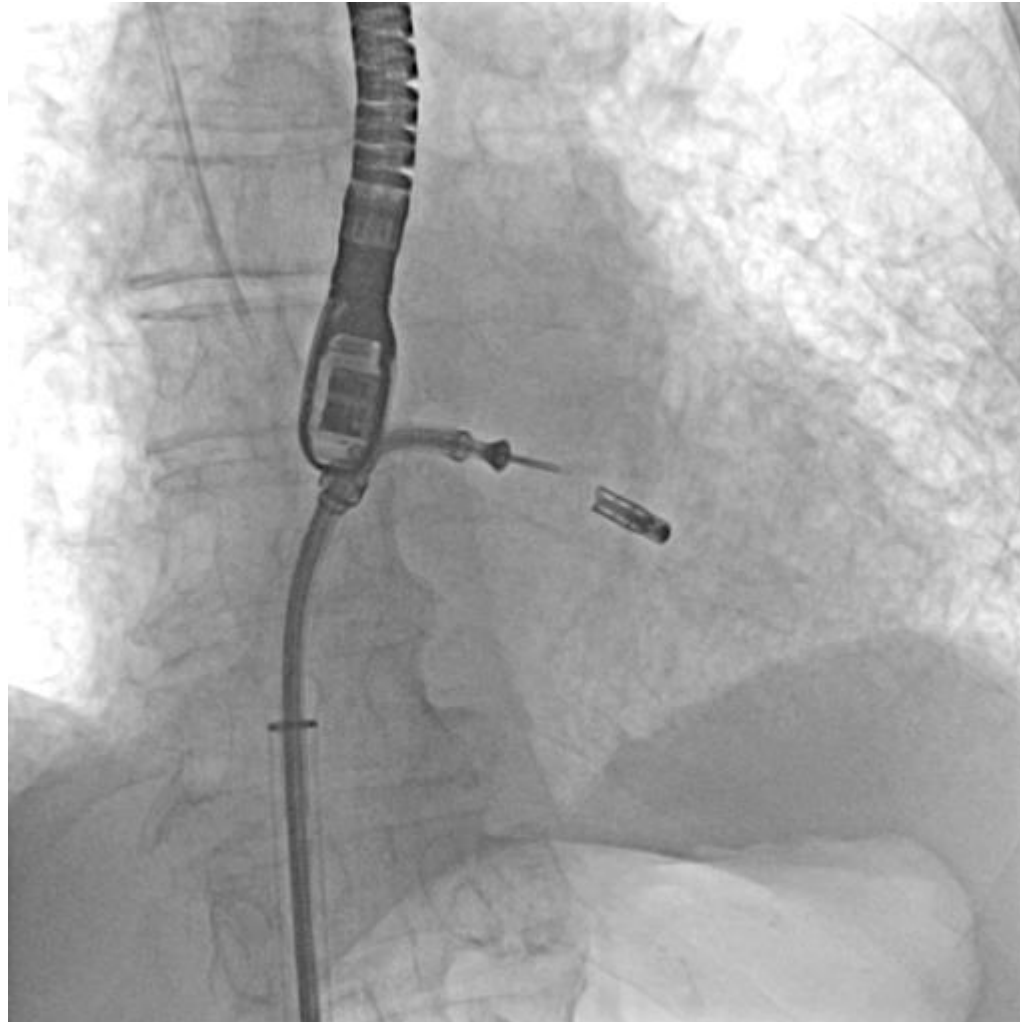


Pomeriggio: Sessioni parallele

8 – TRICKS per gestire le complicanze

Clip detachment – chordal entrapment

EMOCLINIC SYMPOSIUM CARDIOFOCUS SULLE SPONDE DEL TICINO



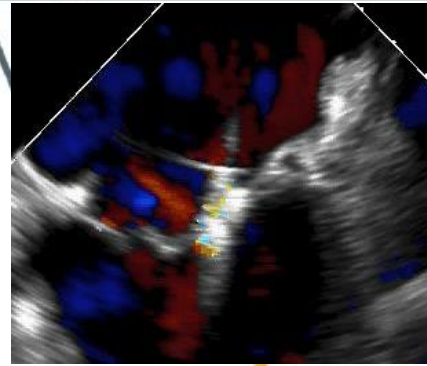
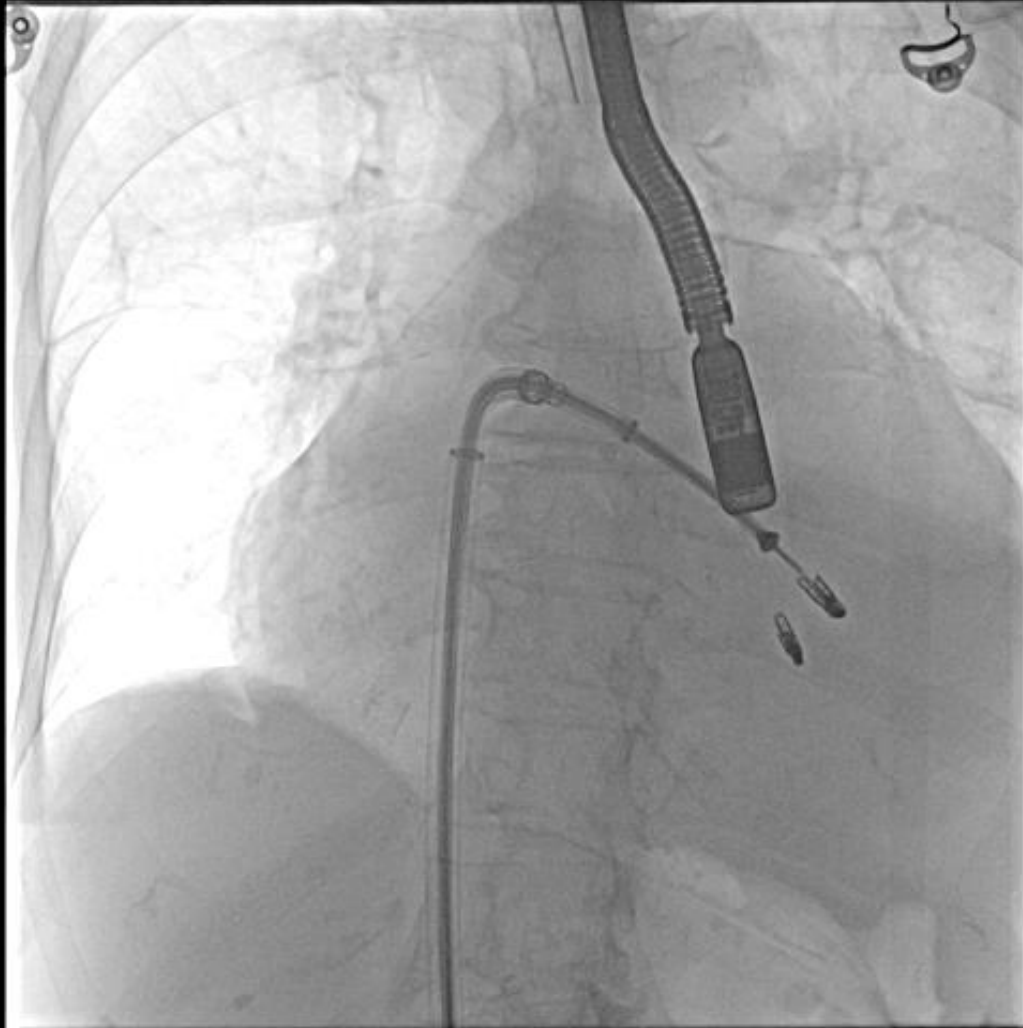
Pomeriggio: Sessioni parallele

EMOCLINIC SYMPOSIUM CARDIOFOCUS SULLE SPONDE DEL TICINO

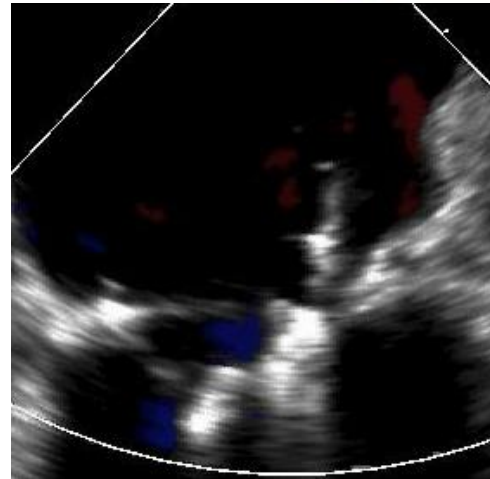


Pomeriggio: Sessioni parallele

EMOCLINIC SYMPOSIUM CARDIOFOCUS



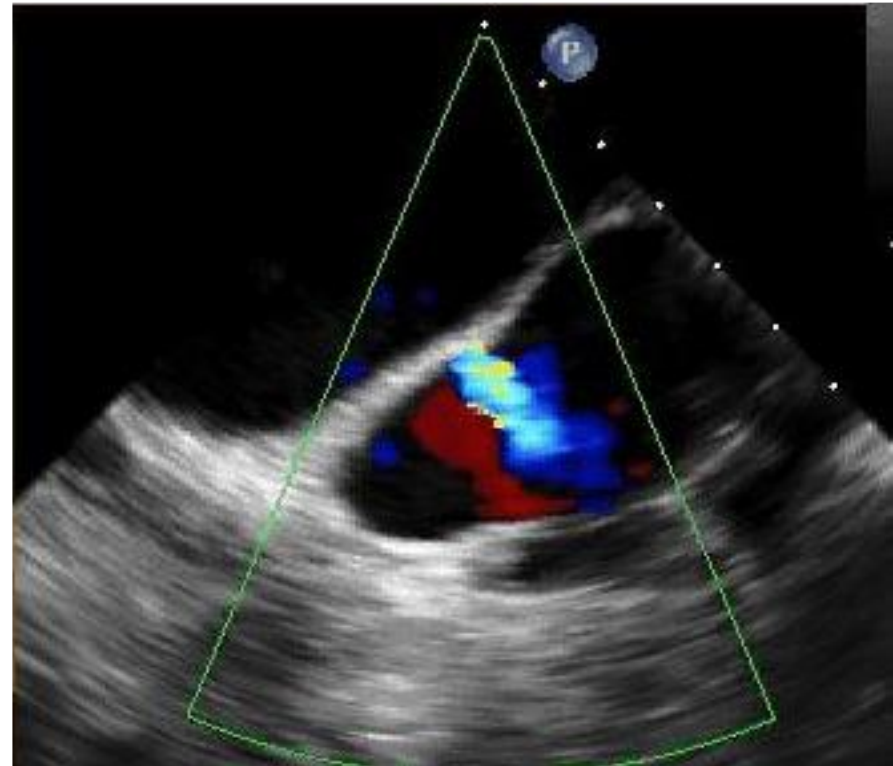
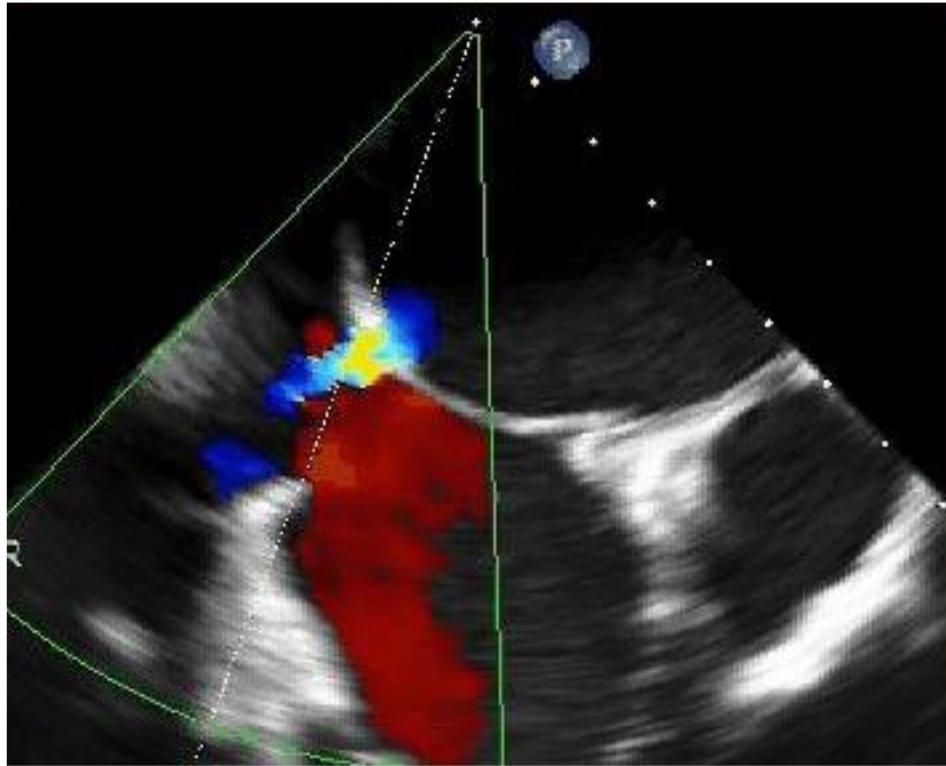
Rotazione di proposito della clip sulle corde



Pomeriggio: Sessioni parallele

9 – ASD iatrogeno

EMOCLINIC SYMPOSIUM CARDIOFOCUS SULLE SPONDE DEL TICINO



Tips on shunt management:
Left to Right shunt: leave it alone
Right to Left: close it

Pomeriggio: Sessioni parallele

10 – FU dedicato

Ambulatorio congiunto CI - CCH:

- Visita a **30-40 giorni**

(ottimizzazione terapia, valutazione clinica)

- ECOCCG a **30-40 giorni**

(valutazione clip x detachment e IM)

Successive visite ed ECOCCG a **6 o 12 mesi**

Possibilità aggancio ad ambulatorio per lo scompenso cardiaco

EMOCLINIC SYMPOSIUM CARDIOFOCUS SULLE SPONDE DEL TICINO

Grazie per l'attenzione

Pomeriggio: Sessioni parallele

