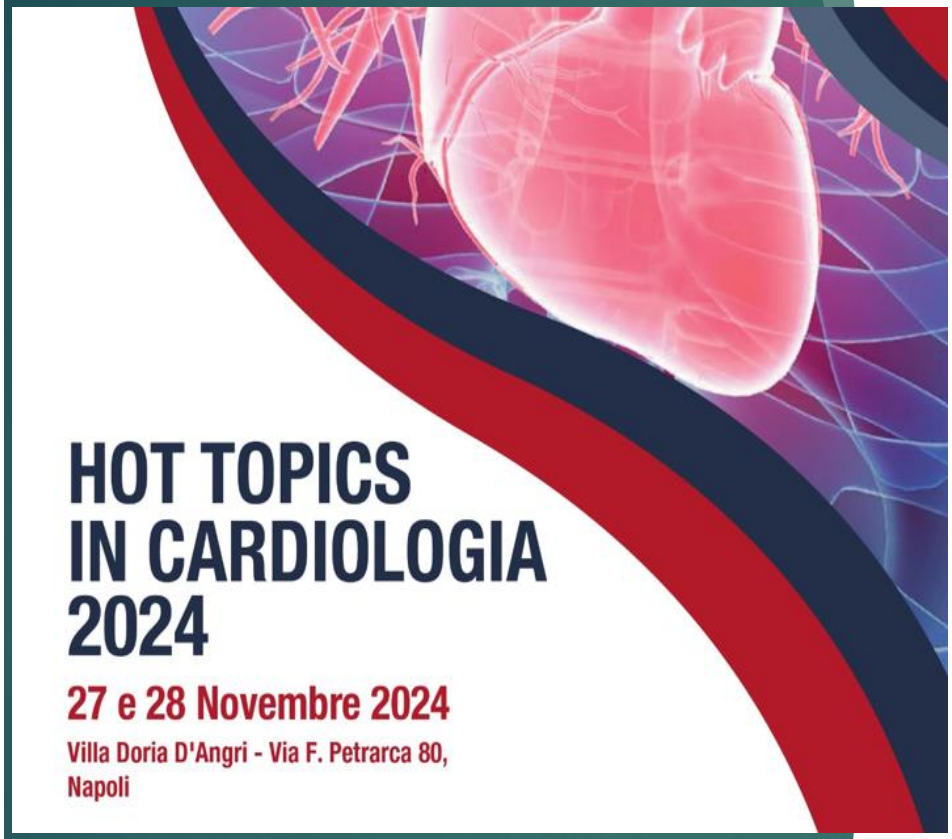


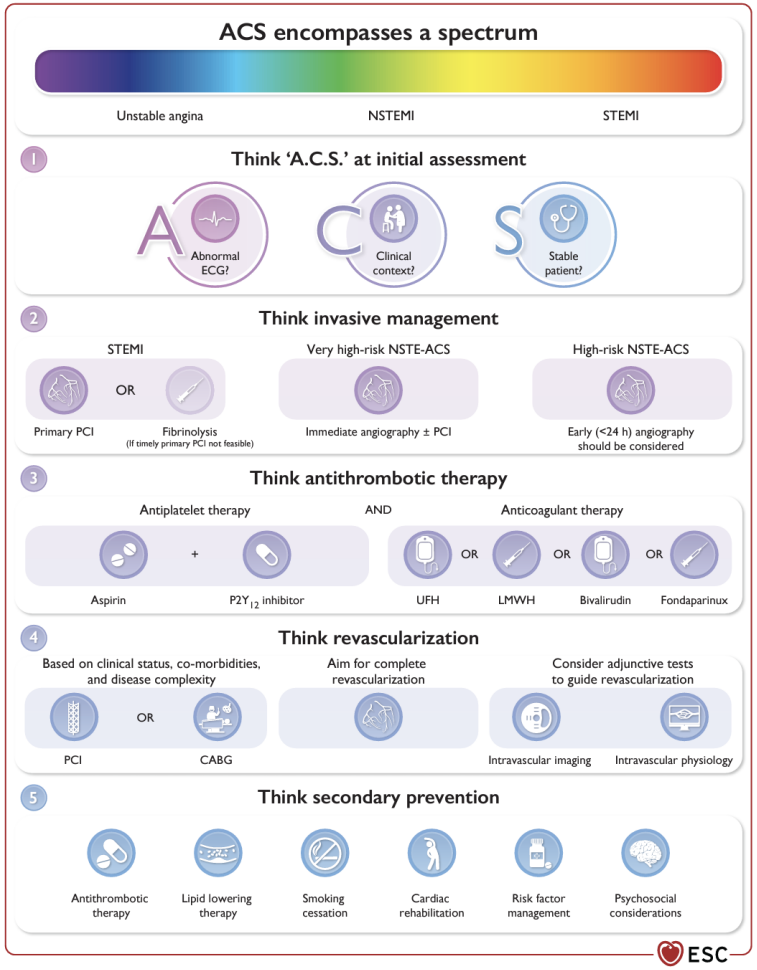
SCA e CCH: Come e quando?

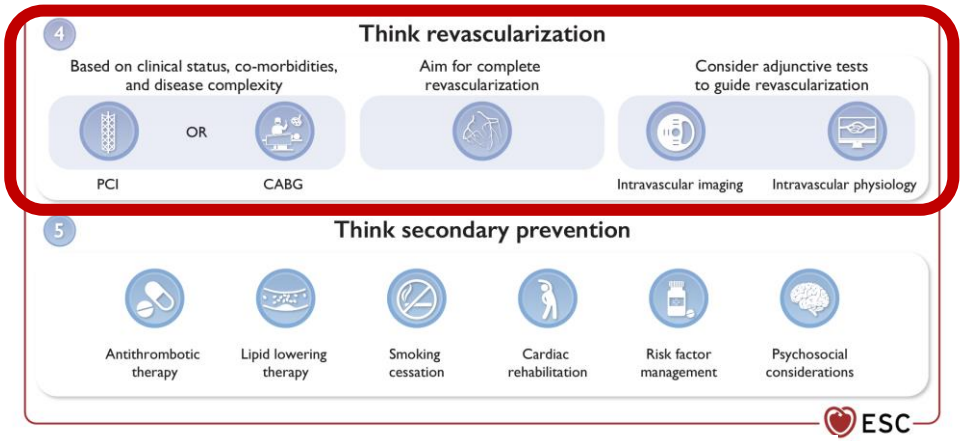
Prof. Pilato Emanuele
Direttore UOC Cardiochirurgia
AOU Federico II - Napoli

Link
profitable solutions

ESC European Society of Cardiology
European Heart Journal (2023) **44**, 3720–3826
https://doi.org/10.1093/eurheartj/ehad191

2023 ESC Guidelines for the management of acute coronary syndromes



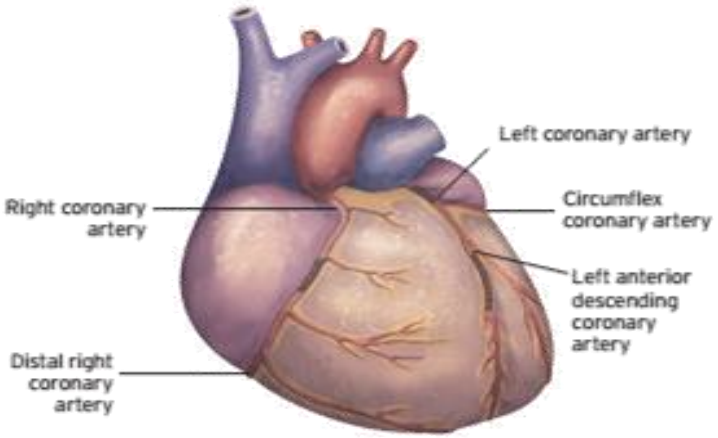


Recommendation Table 12 — Recommendations for management of patients with multivessel disease

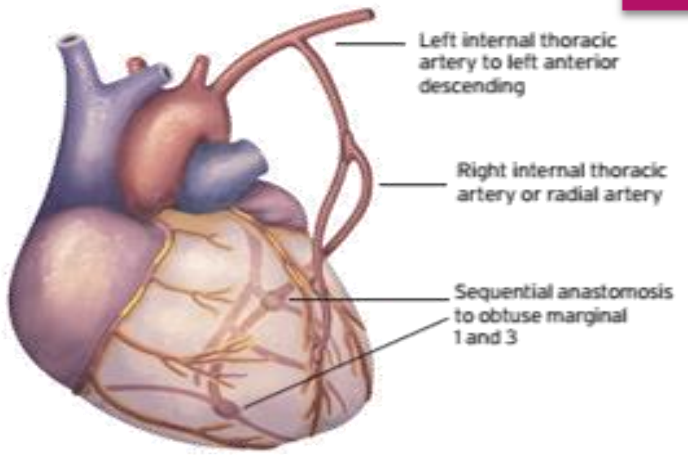
Recommendations	Class[a]	Level[b]
It is recommended to base the revascularization strategy (IRA PCI, multivessel PCI/CABG) on the patient's clinical status and comorbidities, as well as their disease complexity, according to the principles of management of myocardial revascularization.[480,481]	I	B
Multivessel disease in ACS patients presenting in cardiogenic shock		
IRA-only PCI during the index procedure is recommended.[404,505]	I	B
Staged PCI of non-IRA should be considered.[c]	IIa	C

2023 ESC Guidelines for the management of acute coronary syndromes. Eur Heart J. 2023 Oct 12;44(38):3720-3826.

PCI



CABG



FAVOURS PCI

Clinical characteristics

Presence of severe co-morbidity (not adequately reflected by scores)

Advanced age/frailty/reduced life expectancy

Restricted mobility and conditions that affect the rehabilitation process

Anatomical and technical aspects

MVD with SYNTAX score 0–22

Anatomy likely resulting in incomplete revascularization with CABG due to poor quality or missing conduits

Severe chest deformation or scoliosis

Sequelae of chest radiation

Porcelain aorta*

FAVOURS CABG

Clinical characteristics

Diabetes

Reduced LV function (EF ≤35%)

Contraindication to DAPT

Recurrent diffuse in-stent restenosis

Anatomical and technical aspects

MVD with SYNTAX score ≥23

Anatomy likely resulting in incomplete revascularization with PCI

Severely calcified coronary artery lesions limiting lesion expansion

Need for concomitant interventions

Ascending aortic pathology with indication for surgery

Concomitant cardiac surgery

KLink profitable solutions

Recommendation Table 9 — Recommendations for cardiogenic shock

Recommendations	Class[a]	Level[b]
Immediate coronary angiography and PCI of the IRA (if indicated) is recommended in patients with CS complicating ACS.[394,396,404]	I	B
Emergency CABG is recommended for ACS-related CS if PCI of the IRA is not feasible/unsuccessful.[394,395]	I	B
In cases of haemodynamic instability, emergency surgical/catheter-based repair of mechanical complications of ACS is recommended, based on Heart Team discussion.	I	C
Fibrinolysis should be considered in STEMI patients presenting with CS if a PPCI strategy is not available within 120 min from the time of STEMI diagnosis and mechanical complications have been ruled out.[184,354]	IIa	C

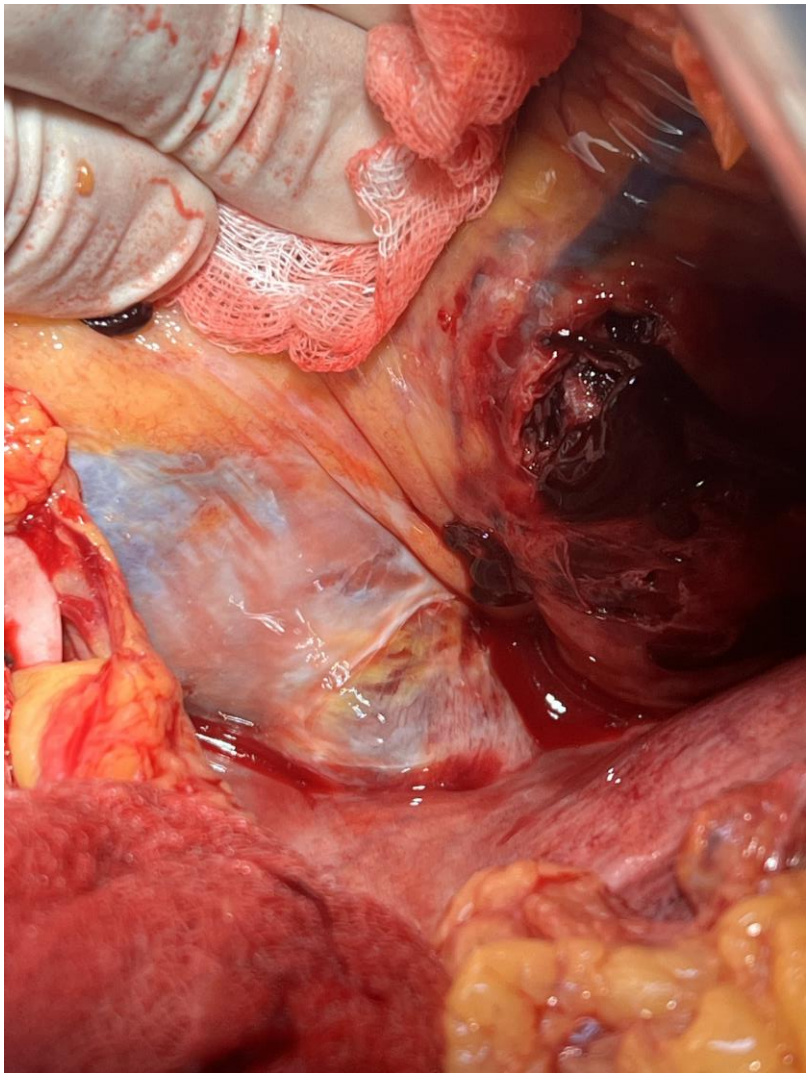
Continued

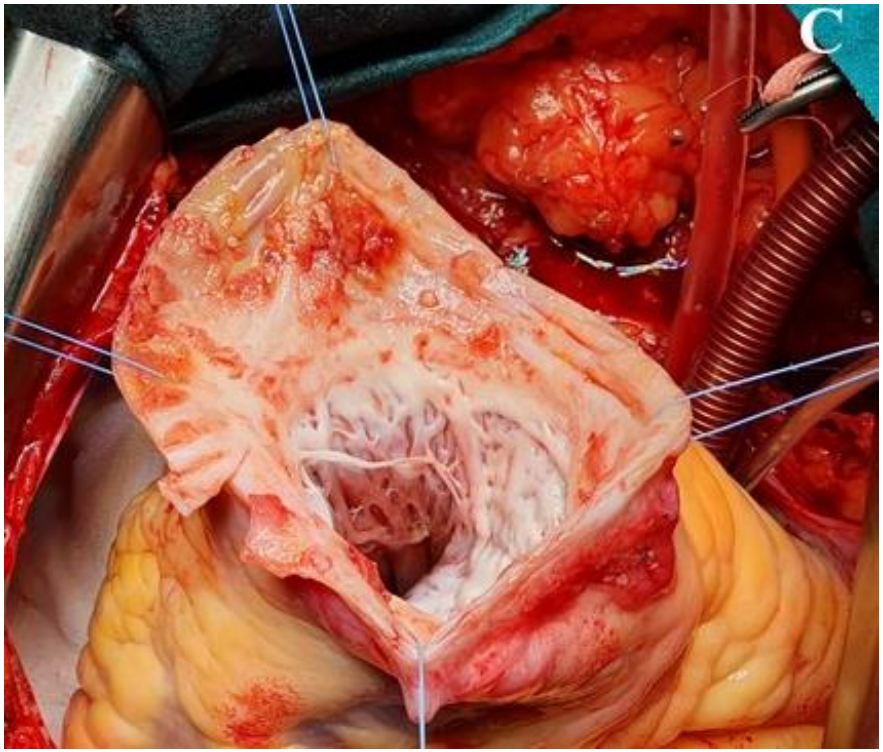
- Papillary muscles ruptures
- Free wall rupture
- Post-AMI Ventricular septal defect
- Very low LVEF

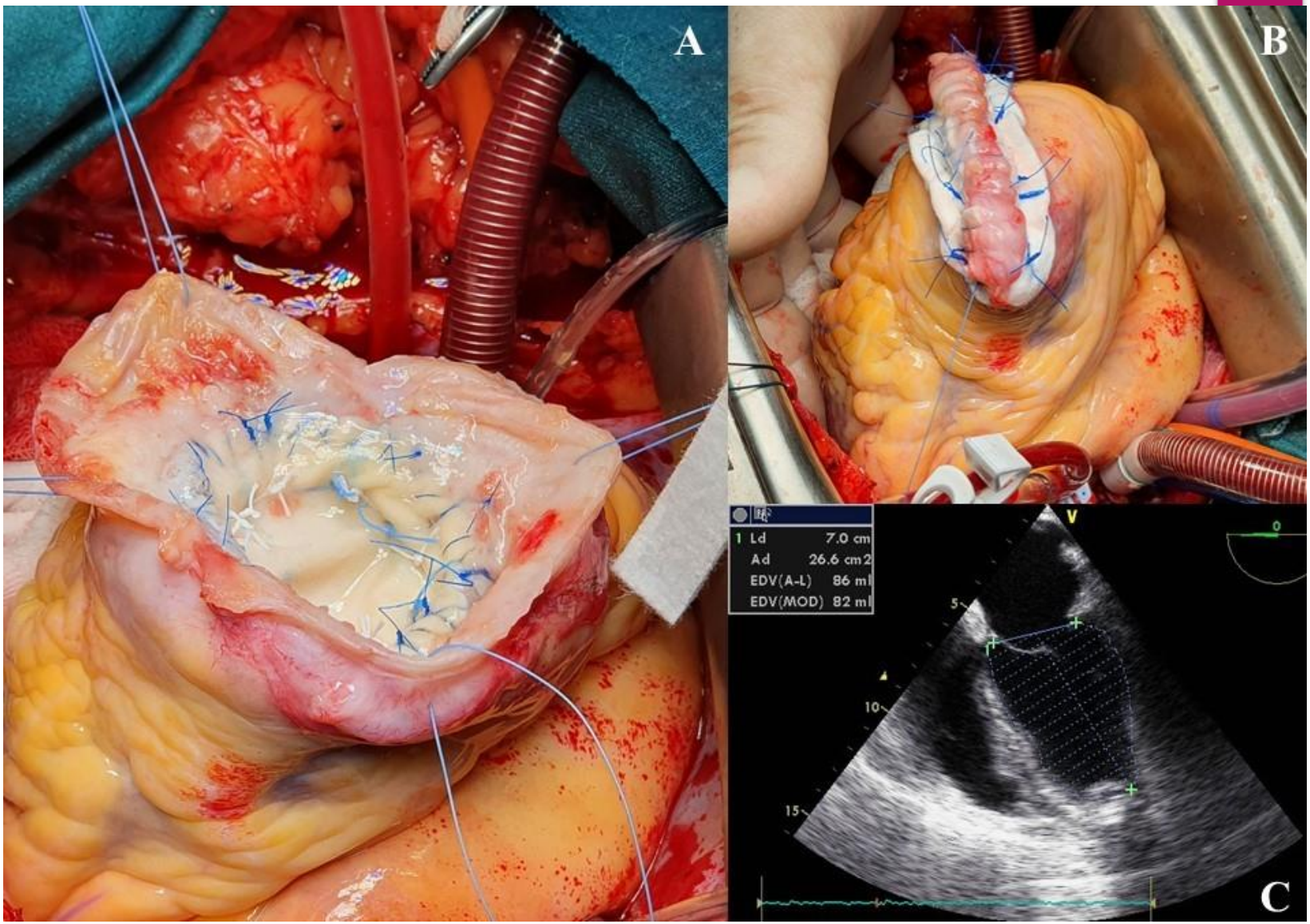
Peri-procedural carefull optimization

- IABP, pVAD
- Inotropic support
- Fluid Balance
- Myocardial Protection

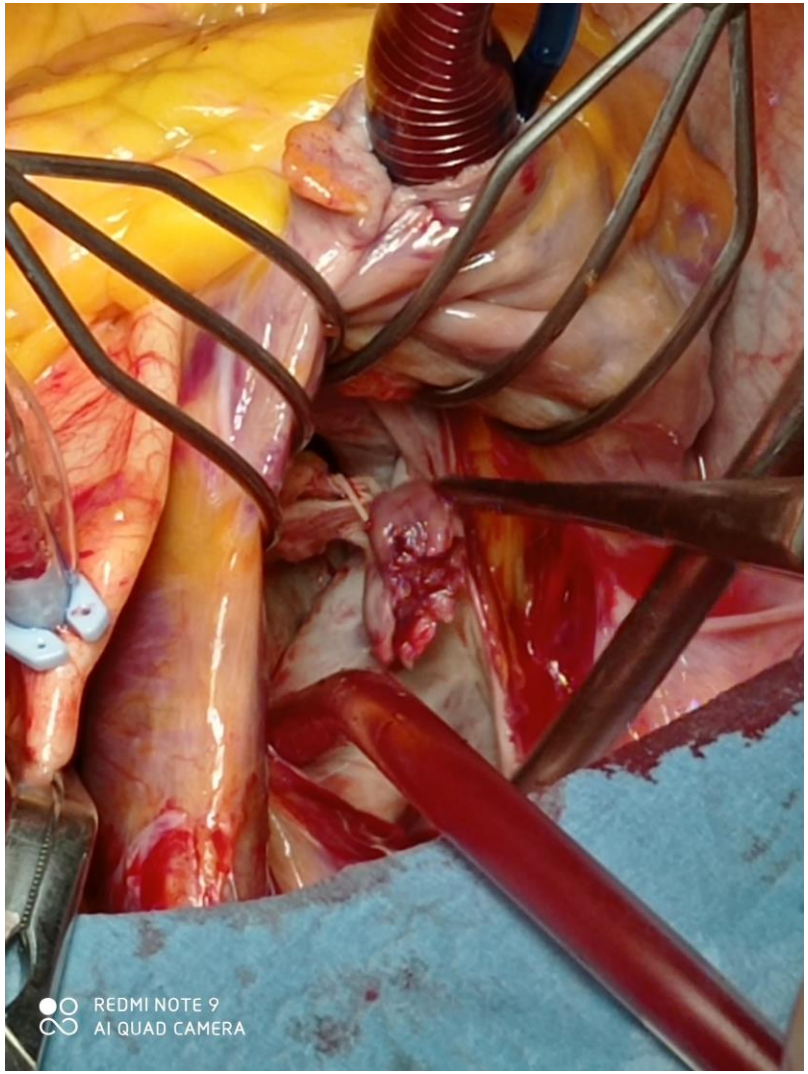
Free Wall Rupture



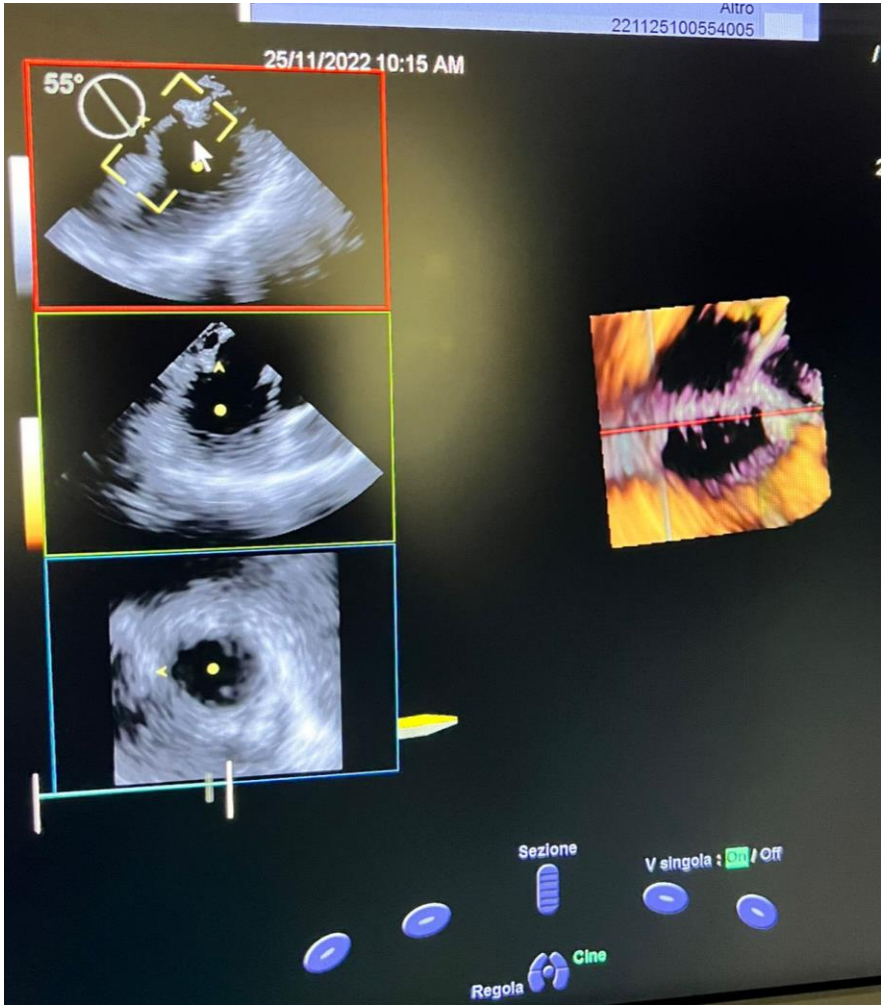


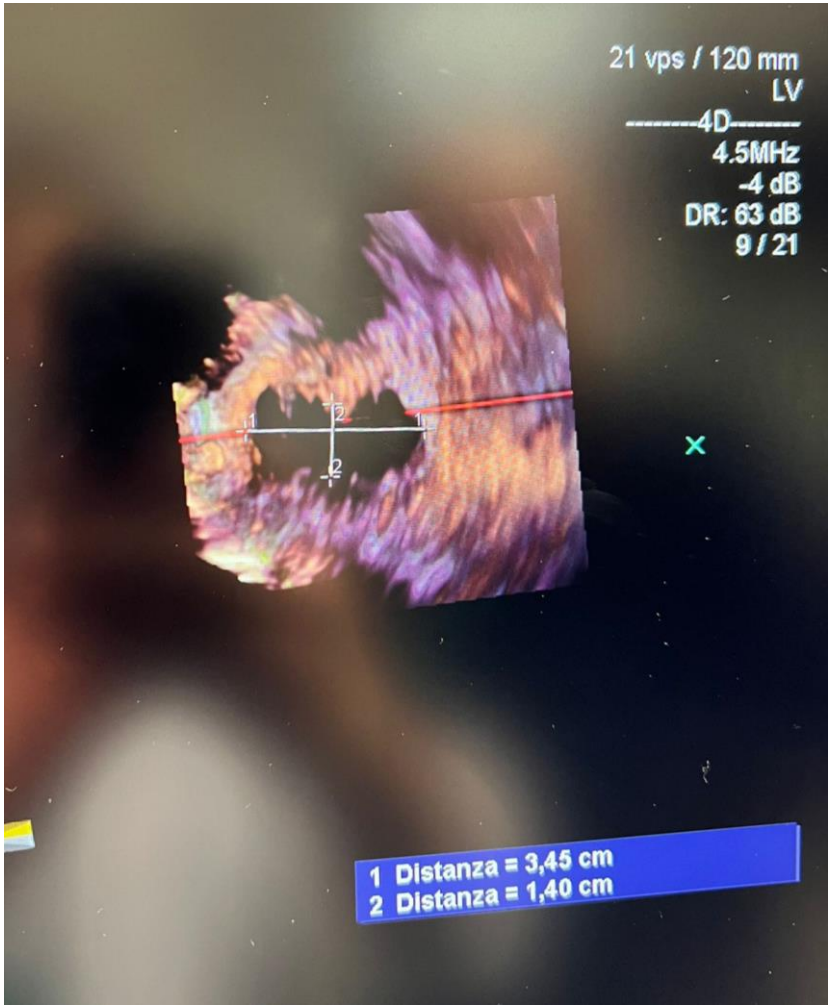

A
B
1 Ld 7.0 cm
Ad 26.6 cm2
EDV(A-L) 86 ml
EDV(MOD) 82 ml
5
10
15
C

Papillary muscles rupture

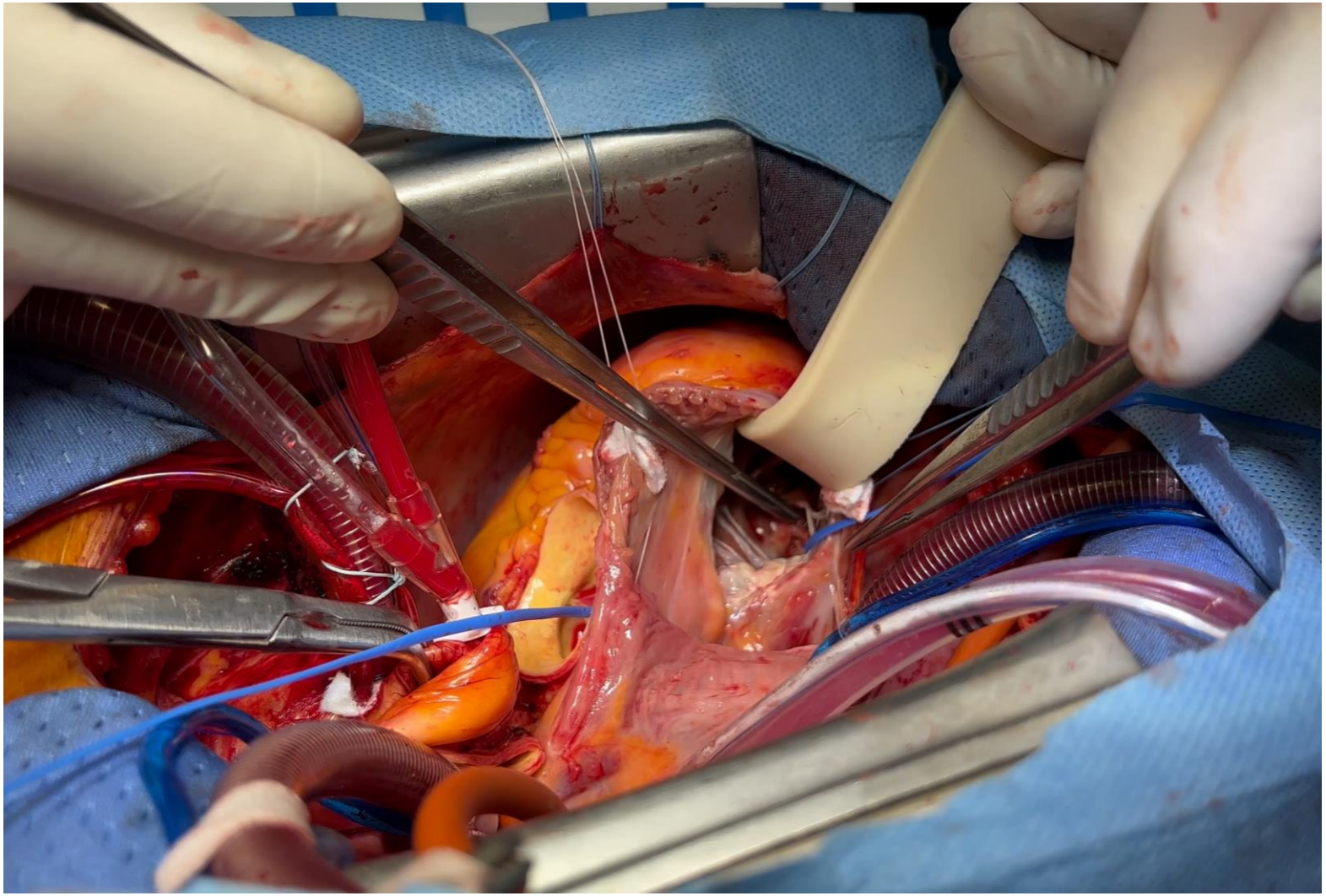


Ventricular septal defect

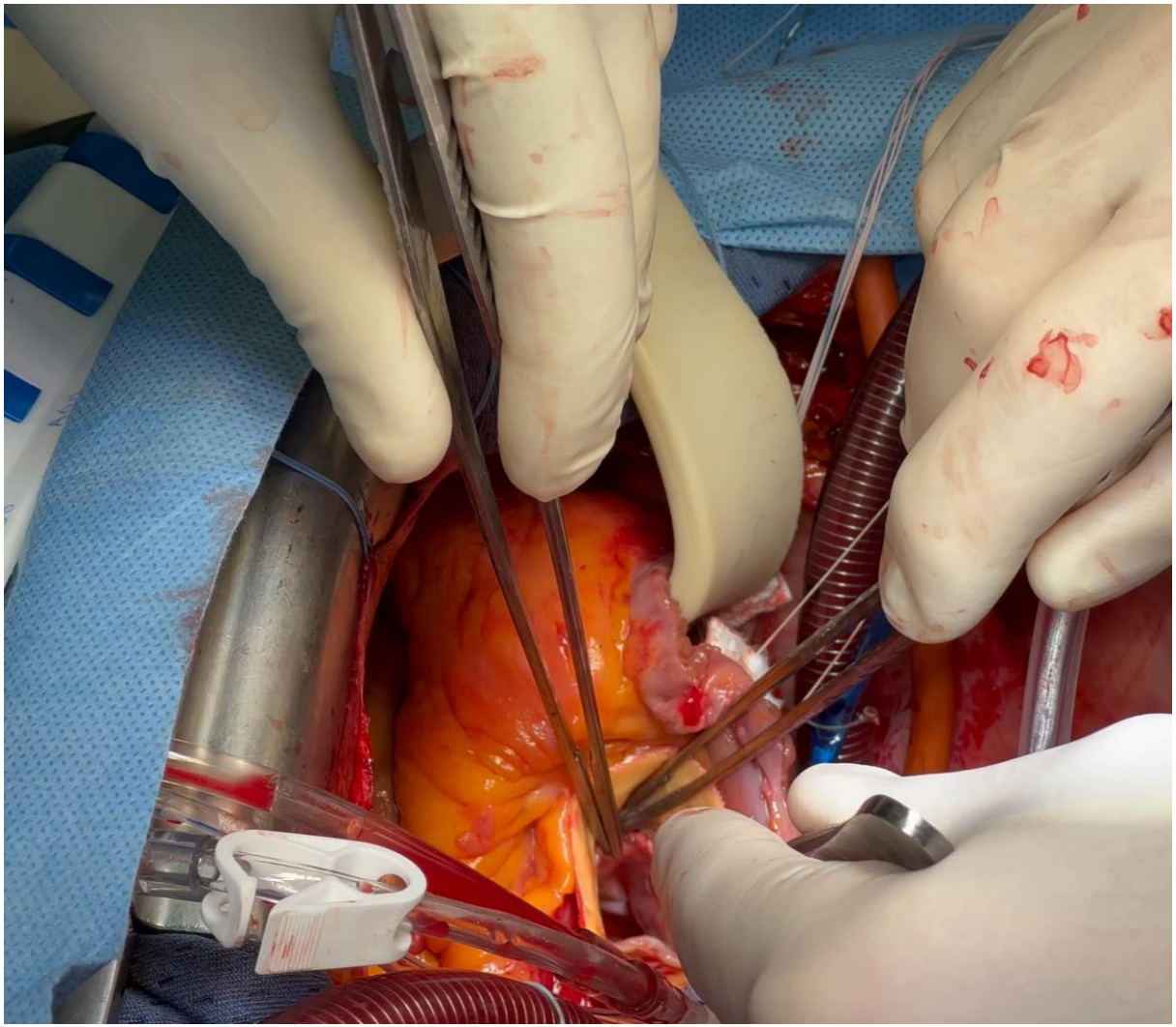


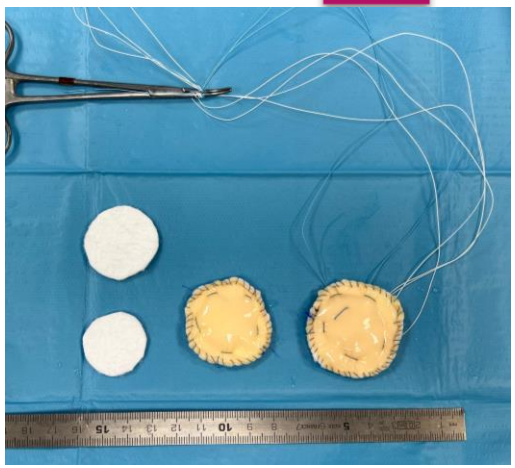


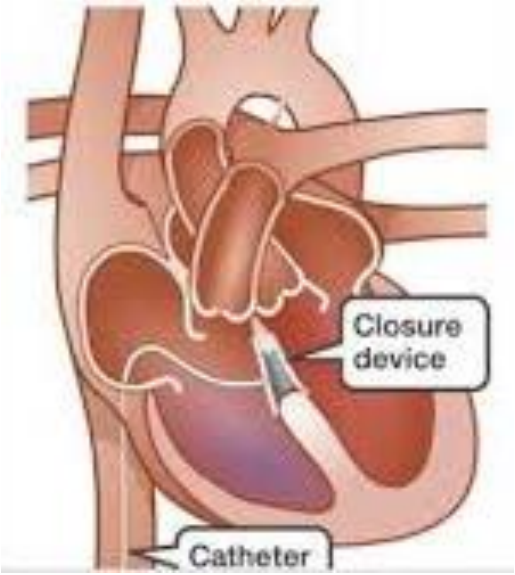
Ventricular septal defect



Ventricular septal defect







Very Low Ejection Fraction

Original Investigation ONLINE FIRST

April 8, 2020

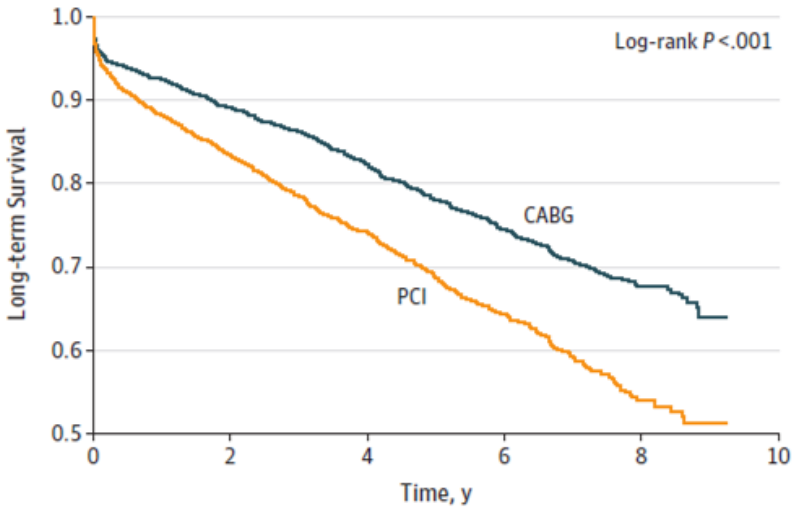
Long-term Outcomes in Patients With Severely Reduced Left Ventricular Ejection Fraction Undergoing Percutaneous Coronary Intervention vs Coronary Artery Bypass Grafting

Louise Y. Sun, MD, SM[1,2,3]; Mario Gaudino, MD[4]; Robert J. Chen, MD[1]; et al

Results A total of 12 113 patients (mean [SD] age, 64.8 (11.0) years for the PCI group and 65.6 [9.7] years for the CABG group; 5084 (72.5%) male for the PCI group and 4229 (82.9%) male for the PCI group) were propensity score matched on 30 baseline characteristics: 2397 patients undergoing PCI and 2397 patients undergoing CABG. The median follow-up was 5.2 years (interquartile range, 5.0-5.3). Patients who received PCI had significantly higher rates of mortality (hazard ratio [HR], 1.6; 95% CI, 1.3-1.7), death from cardiovascular disease (HR 1.4, 95% CI, 1.1-1.6), MACE (HR, 2.0; 95% CI, 1.9-2.2), subsequent revascularization (HR, 3.7; 95% CI, 3.2-4.3), and hospitalization for MI (HR, 3.2; 95% CI, 2.6-3.8) and heart failure (HR, 1.5; 95% CI, 1.3-1.6) compared with matched patients who underwent CABG.

Sun LY, et al. *JAMA Cardiol.* Published online April 08, 2020

Figure 1. Estimated Long-term Survival After Percutaneous Coronary Intervention (PCI) vs Coronary Artery Bypass Grafting (CABG)



Conclusions and Relevance In this study, higher rates of mortality and MACE were seen in patients who received PCI compared with those who underwent CABG. The findings may provide insight to physicians who are involved in decision-making for these patients.

KLink profitable solutions

The Del Nido Cardioplegia

Contents lists available at ScienceDirect

Heart & Lung

journal homepage: www.heartandlung.com

The role of Del Nido Cardioplegia in reducing postoperative atrial fibrillation after cardiac surgery in patients with impaired cardiac function

Giuseppe Comentale, MD[a,*], Valentina Parisi, MD[b], Vittoria Fontana, MD[a], Rachele Manzo, MD[a], Maddalena Conte, MD[b], Anna Nunziata, MD[a], Giovanna Bevilacqua, MSc[a], Mariarita Buono, MSc[a], Shadi Hamameh, MD[a], Emanuele Pilato, MD[a]

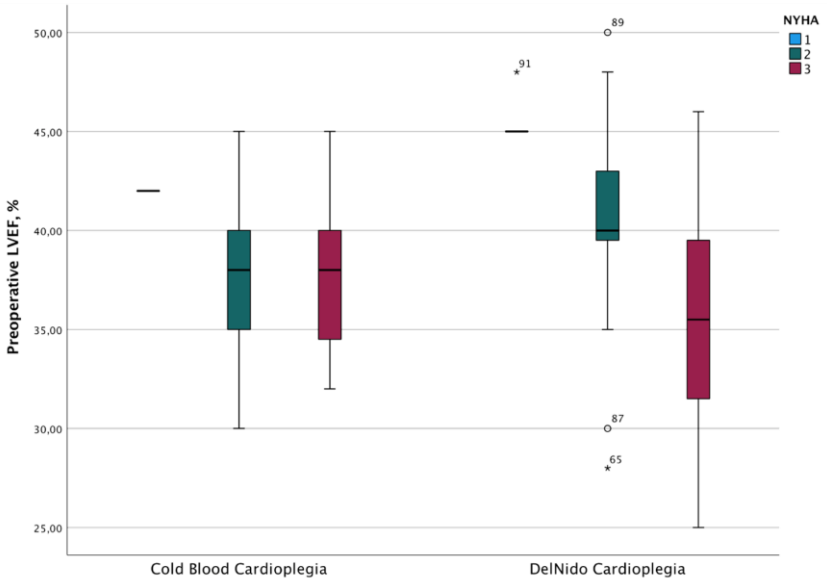
to evaluate **the role of Del Nido Cardioplegia on myocardial protection and perioperatives outcomes** of patients with reduced left ventricle ejection fraction undergoing CABG surgery

Single-Center Retrospective analysis

4 years data: **- Cardiac Surgery Unit, AOU Federico II**

Study Population: 93 CABG patients with LVEF ≤ 50%

- 49 pts - Cold Blood Cardioplegia (Group 1)
- 44 pts - Del Nido Cardioplegia (Group 2)



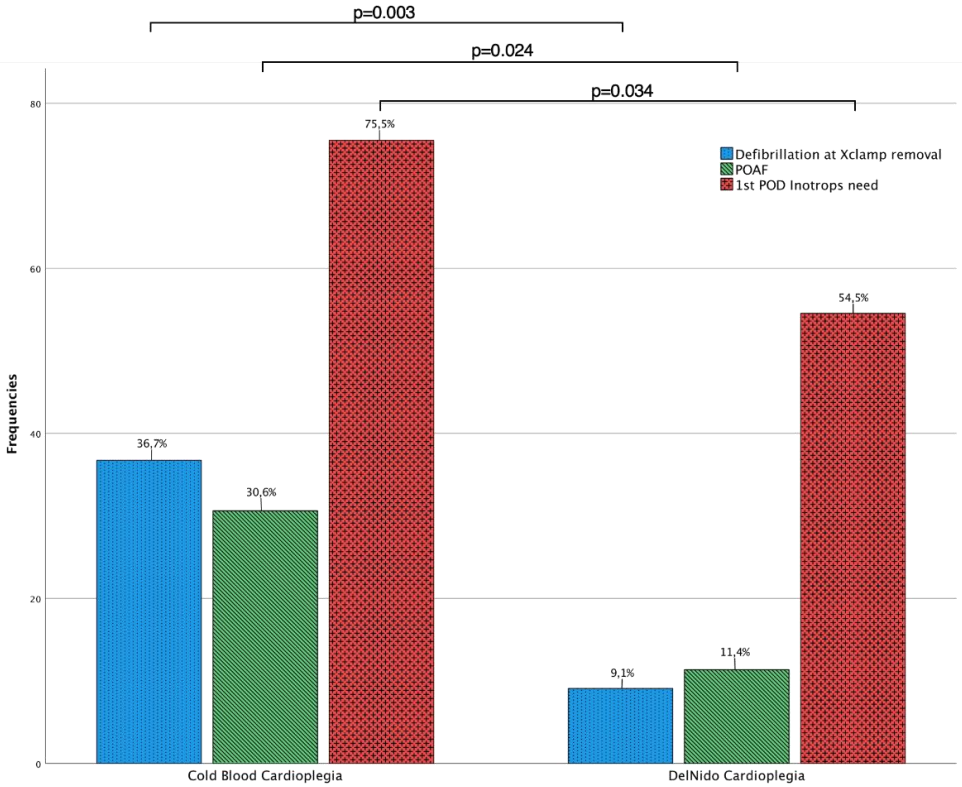
Primary outcomes:

- Ventricular Fibrillation rate at Xclamp removal
- Perioperative Inotropic need
- Postoperative iTroponine release

Variables	Overall (n=93)	Cold Blood Cardioplegia (n= 49, 52.7%)	Del Nido Cardioplegia (n= 44, 47.3%)	P-value
pp3SAlb, g/dL	3.1 [2.9; 3,3] (2 to 3.7)	3,06 [2,85; 3,2] (2 to 3,63)	3,2 [2,9; 3,4] (2,2 to 3,7)	0.01
pp3SNa⁺, mmol/l	141.5 [139.4;143] (128.6 to 152)	142 [140.8; 144] (136 to 152)	140.8 [138.8; 142] (128.6 to 146.7)	0.002
pp3SK⁺, mmol/l	4.3 [4.1;4.5] (3.1 to 5.4)	4.36 [4.2;4.51] (4 to 5.3)	4.2 [4;4.4] (3.2 to 5.4)	0.009
Postoperative sLactate peak, mmol/l	3.1 [2.9;5.1] (0.9 to 12.6)	3.4 [1.77; 5.29] (0.9 to 9.8)	2.5 [1.7;4.8] (1.09 to 12.6)	0.46
Postoperative sTroponin I peak, mmol/l	1708 [1104; 3176] (140 to 27560)	2181 [1155.5; 6945.5] (500 to 27560)	1312 [847.3;2090] (140 to 16494]	0.01
1st POD Epinephrine need, n (%)	61 (65.6)	37 (75.5)	24 (54.5)	0.034
1st POD Epinephrine dose, µg/Kg/min	0.02 [0;0.04] (0 to 0.1)	0.04 [0; 0.05] (0 to 0,1)	0 [0;0.02] (0 to 0.06)	0.005
1st POD VIS score, n	3 [0;6] (0 to 16)	5 [2;7.5] (0 to 16)	2 [0;4] (0 to 12)	<0.001
Inotropic drugs length, days	1 [0;2] (0 to 9)	2 [1;3] (0 to 9)	0 [0;1] (0 to 2)	<0.001
ICU death, n (%)	1 (1.1)	0	1 (2.3)	0.47
ICU stay, n (%)	3 [3;4] (0 to 11)	3 [3;4] (2 to 22)	3 [3;4] (2 to 6)	0.190
Total Packed RC, n (%)	3 [3;4] (2 to 22)	3 [2;5] (0 to 11)	2,5 [1;3] (0 to 7)	<0.001
Total Hospital stay, n (%)	8 [7;9] (4 to 42)	8 [7; 12] (6 to 42)	7 [6;8] (4 to 12)	<0.001
In-Hospital Death, n (%)	1 (1.1)	0	1 (2.3)	0.47

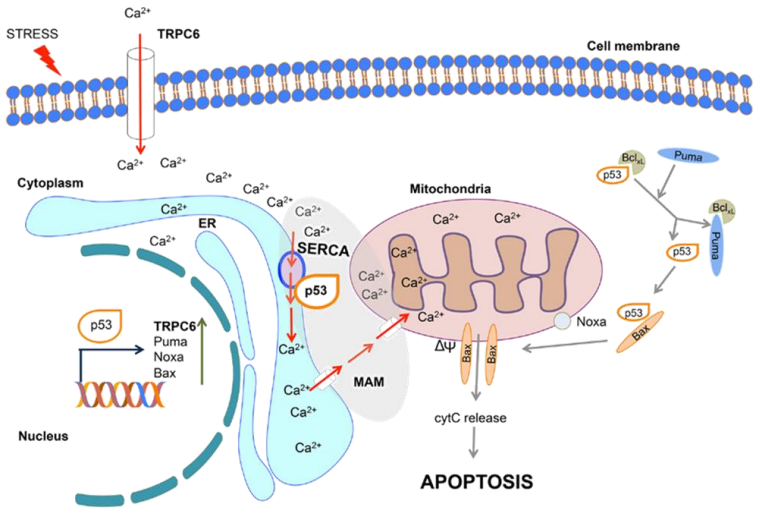
Atrial Fibrillation rate

4 or more	2 (2.2)	2 (4.1)	0	
Defibrillation at reperfusion, n (%)	22 (23.7)	18 (36.7)	4 (9.1)	0.003
Postoperative Epinephrine, µg/kg/min	0.02 [0; 0.05] (0 to 0.1)	0.05 [0; 0.08] (0 to 0.1)	0 [0; 0.02] (0 to 0.05)	<0.001
Postoperative Norepinephrine, µg/kg/min	0.04 [0.02; 0.06] (0 to 0.1)	0.05 [0.035; 0.07] (0 to 0.1)	0.02 [0; 0.04] (0 to 0.06)	<0.001
Postoperative VIS score, n	6 [4; 11] (0 to 25)	11 [7; 14.5] (2 to 25)	4 [2; 5.75] (0 to 8)	<0.001
IABP need, n (%)	2 (2.2)	1 (2)	1 (2.3)	0.939
Serum K^+ at Xclamp removal, mmol/l	4.8±0.8 (3.5 to 6.8)	5.2±0.6 (3.8 to 6.8)	4.4±0.6 (3.5 to 6.2)	0.009
Serum Na^+ at Xclamp removal, mmol/l	133.2±3.3 (124 to 143)	132.6±3.7 (124 to 143)	133.9±2.5 (128 to 139)	<0.001
Serum Ca^{++} at Xclamp removal, mmol/l	4.8 [4.6; 5] (4 to 8.3)	4.9 [4.75;5] (4.3 to 8.3)	4.6 [4.5; 5] (4 to 5.3)	0.004

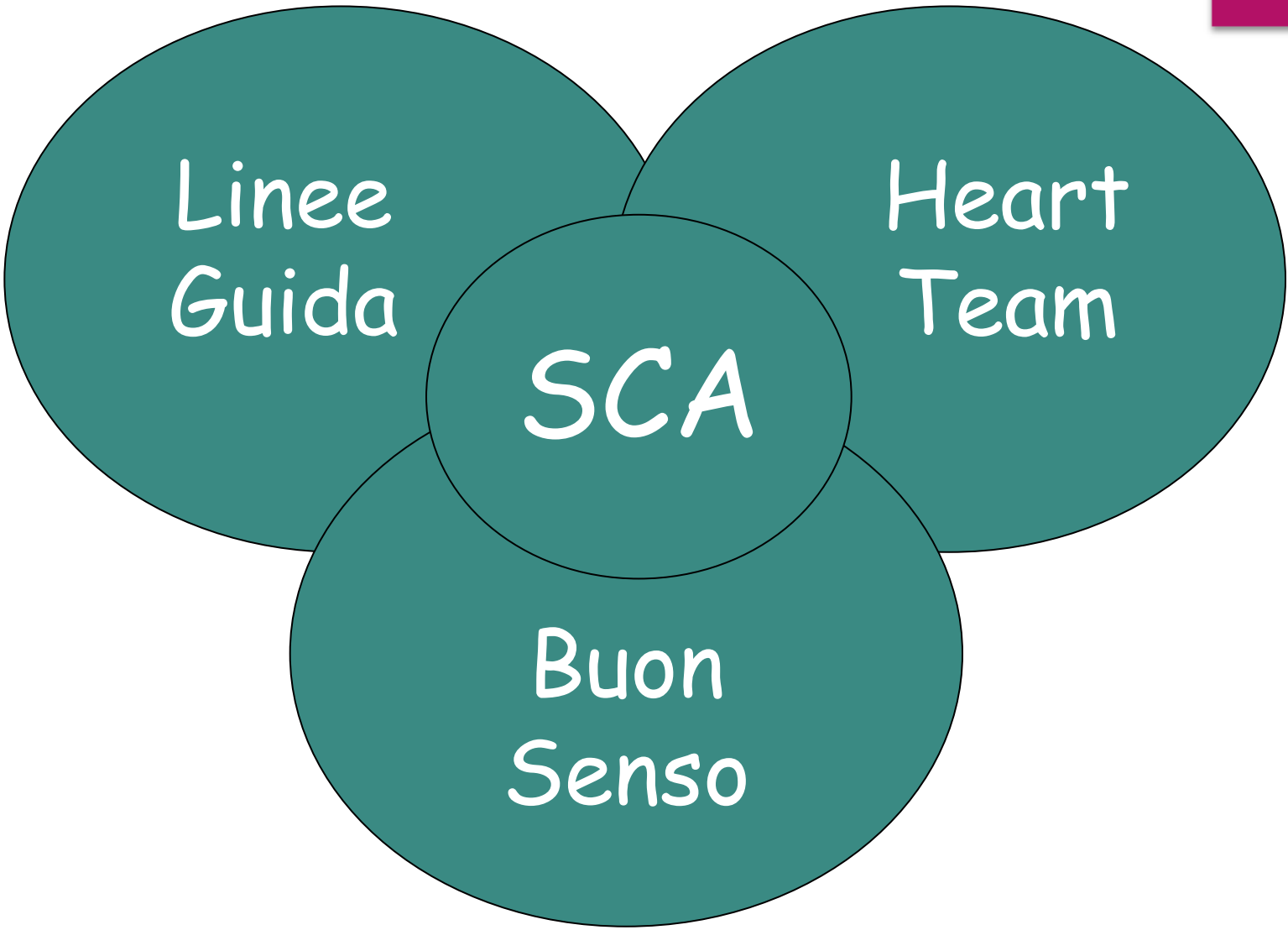


Reduced Calcium means

Reduced Apoptotic Activation!



Conclusions



THANK YOU

EmanuelePilato

emanuele.pilato@unina.it

I.R.D.E.N.

cardiochirurgia.adulti@unina.it

I.R.De.N. registry: