

2023 대한심장혈관흉부외과학회

# 제55차 추계학술대회 & APELSO 2023

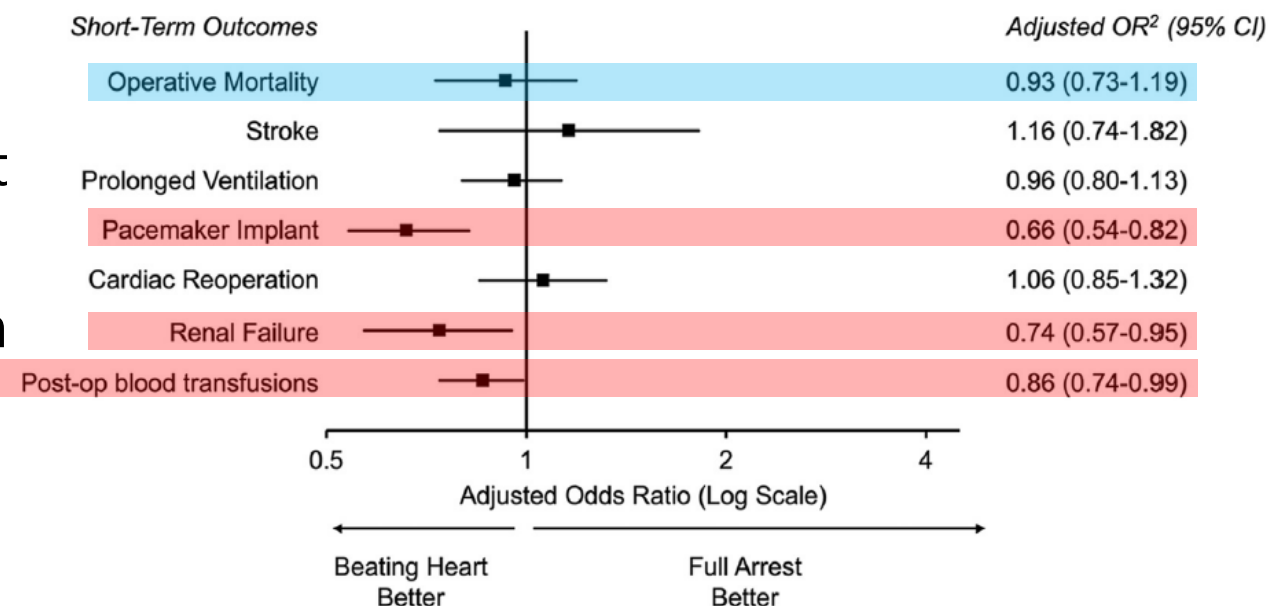
2023. 11. 02 (Thu) - 11. 04 (Sat), 그랜드 인터컨티넨탈 파르나스 서울

## Comparison of Clampless and Arrested Heart Tricuspid Valve Surgery in Mini-thoracotomy Approach



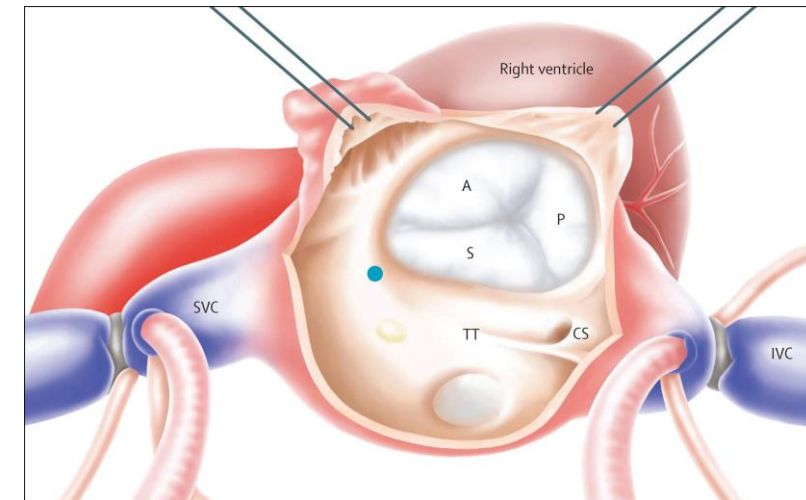
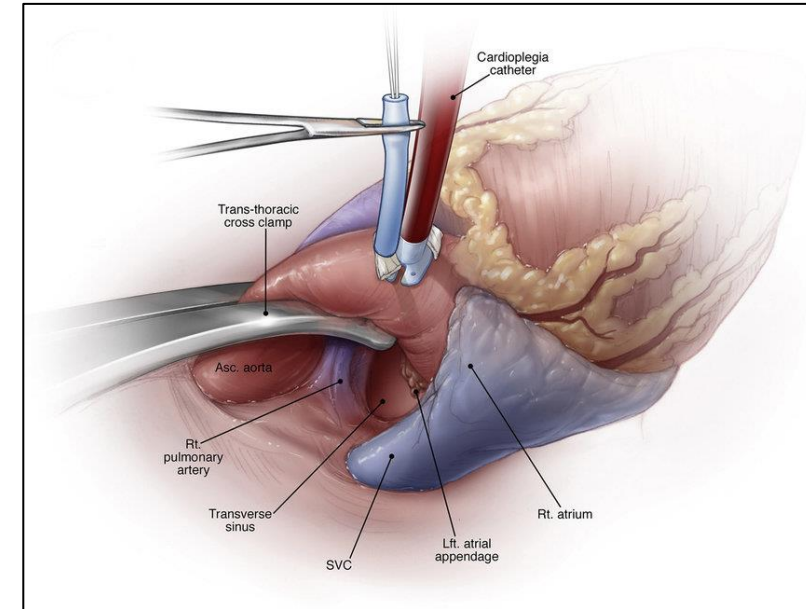
- Recently, tricuspid valve (TV) surgery through right mini-thoracotomy is gaining popularity
- In isolated tricuspid operations, beating heart operation was associated with lower major morbidities<sup>1</sup>
- So, we compare clampless and arrested heart techniques in minimally invasive TV surgery

Beating heart versus full arrest isolated tricuspid surgery



1. Chen et al. Ann Thorac Surg 2023;115:1162-71

- Total 318 TV surgery, between Feb. 2009 and May 2022
- After exclusion of concomitant surgery involving other valves, coronary, and thoracic aorta, 86 isolated TV surgery
- Minimally invasive isolated TV surgery: 79
  - Clampless (CL): 34 patients
  - Arrested heart (AH): 45 patients
- Primary endpoint: operative mortality & morbidity
- Secondary outcome: midterm survival



# Results I: Patient demographics

	Clampless MITVS (N=34)	Arrested MITVS (N=45)	p
Age	67.9 ± 11.2	56.3 ± 13.2	< 0.001
Female	25 (73.5%)	32 (71.1%)	1.000
HTN	23 (67.6%)	15 (33.3%)	0.005
CrCl	46.3 ± 23.3	71.8 ± 29.7	< 0.001
Hb	10.8 ± 2.6	13.4 ± 2.1	< 0.001
PLT	150.4 ± 53.6	222.7 ± 81.1	< 0.001
NYHA IV	10 (29.4%)	5 (11.1%)	0.021
ESII	12.6 ± 10.3	3.8 ± 4.4	< 0.001
CHA2DS2_VASc	3.9 ± 1.7	1.8 ± 1.4	< 0.001
EF0	59.1 ± 11.0	60.7 ± 8.1	0.444
TR_PeakPG0	33.8 ± 16.4	44.2 ± 17.6	0.011
LVEDD0	46.8 ± 7.0	41.1 ± 6.1	< 0.001
Repeated	18 (52.9%)	0 ( 0.0%)	< 0.001
Maze	1 ( 2.9%)	17 (37.8%)	0.001

- Patients in CL were older, had lower creatinine clearance, higher EuroSCORE II, & more reoperations
- CL: 3 fibrillatory arrests, 31 beating heart technique
- AH: blood cardioplegia (n=25), Custodiol (n=12), & Del-Nido cardioplegia (n=8)

# Results II: Operative Outcomes

	Clampless MITVS (N=34)	Arrested MITVS (N=45)	p
Repair	17 (50%)	38 (84.4%)	0.010
Replacement	17 (50%)	7 (15.6%)	
CPB_Time	60.0 ± 21.3	98.5 ± 56.1	< 0.001
ACC_Time	-	64.0 ± 37.2	< 0.001
Stroke	1 ( 2.9%)	1 ( 2.2%)	1.000
ECMO	0 ( 0.0%)	1 ( 2.2%)	1.000
ARF	3 ( 8.8%)	1 ( 2.2%)	0.420
Ventilation, hours	12.4 ± 25.7	8.2 ± 21.3	0.432
Prolong ventilation	4 (11.8%)	6 (13.3%)	1.000
Bleed_12h	404.9 ± 321.1	307.7 ± 314.6	0.182
Reop_Bleeding	3 ( 8.8%)	3 ( 6.7%)	1.000
PPM	1 ( 2.9%)	0 ( 0.0%)	0.896
ICU_Stay	58.0 ± 69.8	37.2 ± 35.9	0.119
Early_Mortality	1 ( 3.2%)	3 ( 7.1%)	0.836

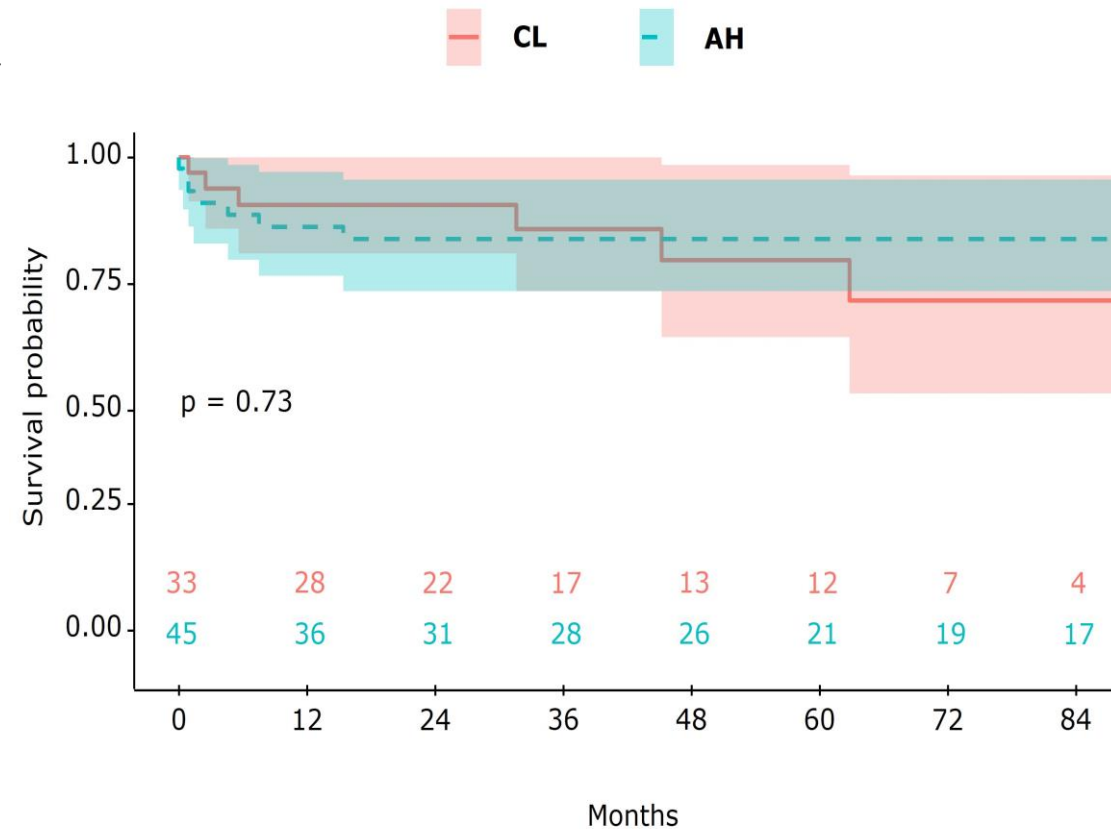


Figure1. Midterm survival after isolated minimally invasive tricuspid valve surgery. CL; clampless, AH; arrested heart



- More TV replacement was performed in CL group d/t more redo
- Despite older and sicker patients in CL group, early mortality and major morbidity were comparable to AH strategy (stroke, ECMO, ARF, bleeding, PPM)
- Midterm survival was similar between groups
- The clampless technique in isolated TV surgery is a reliable option especially during the mini-thoracotomy approach