המרכז הרפואי האוניברסיטאי סורוקה
Soroka University Medical Center

Sinus Node Dysfunction and Risk of Pacemaker Implantation after Trans septal Approach to Mitral valve Surgery

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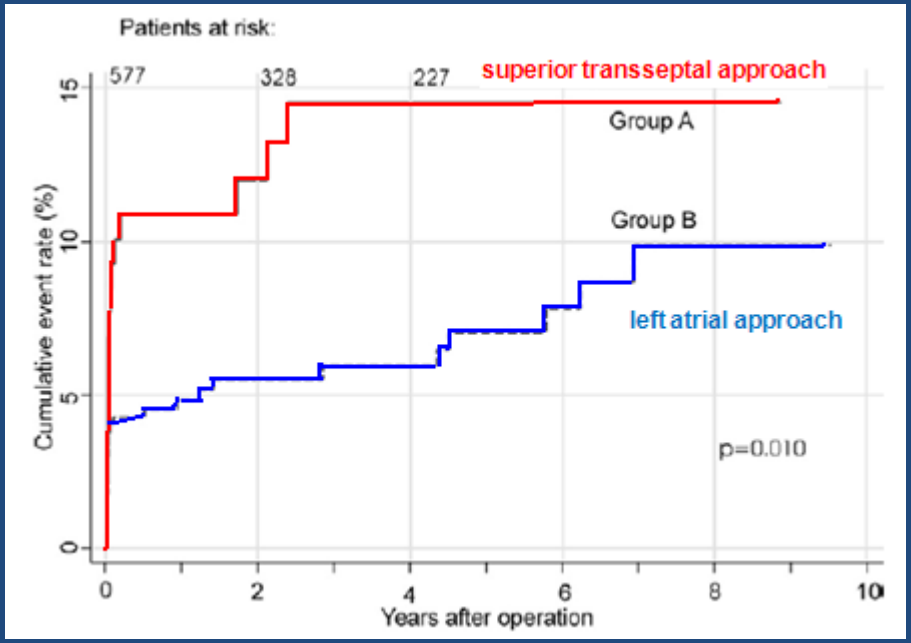
Objective:

- The transatrial septal approach may enhance exposure of the MV especially in cases involving :
  - Small LA
  - Redo MVR
  - When additional TVR is required

Objective:

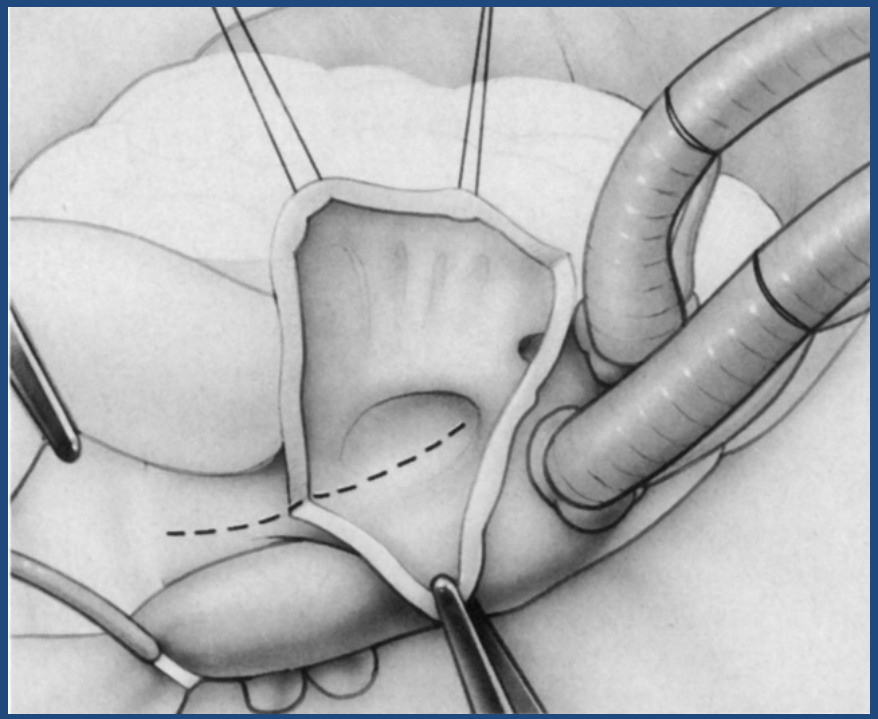
- High incidence of sinus node dysfunction (SND) and subsequent pacemaker implantation
- Probably related to in advert division of the sinus node artery (SNA).

Cumulative rates of pacemaker implantation.

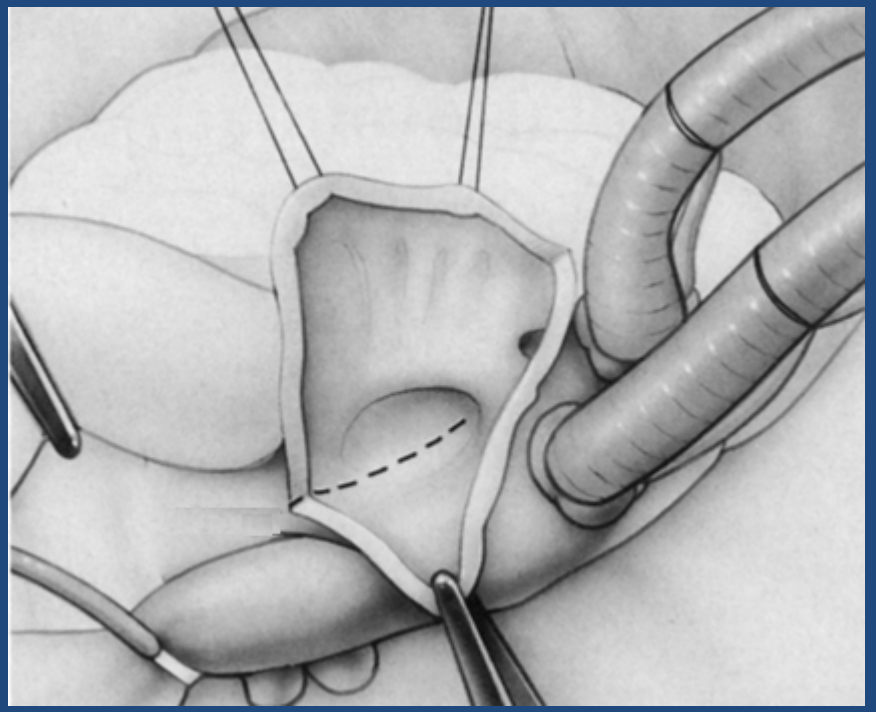


Ann Thorac Surg 2007;83:77– 82

Surgical technique - transseptal



Extended superior approach



Restricted approach

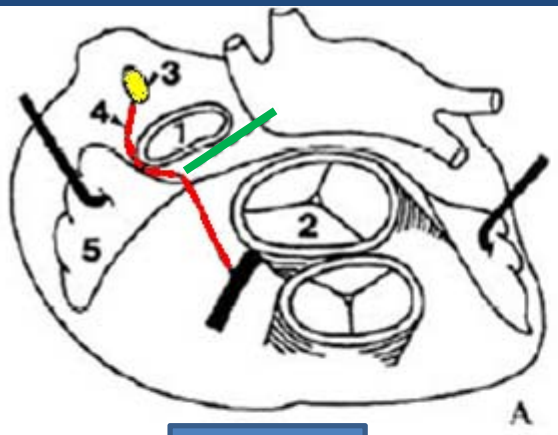
The Clinical Anatomy of the Sinus Node Artery

50 human hearts

66% - right SNA

Ann Thorac Surg 2003;76:732–6

The Clinical Anatomy of the Sinus Node Artery



superior transseptal approach

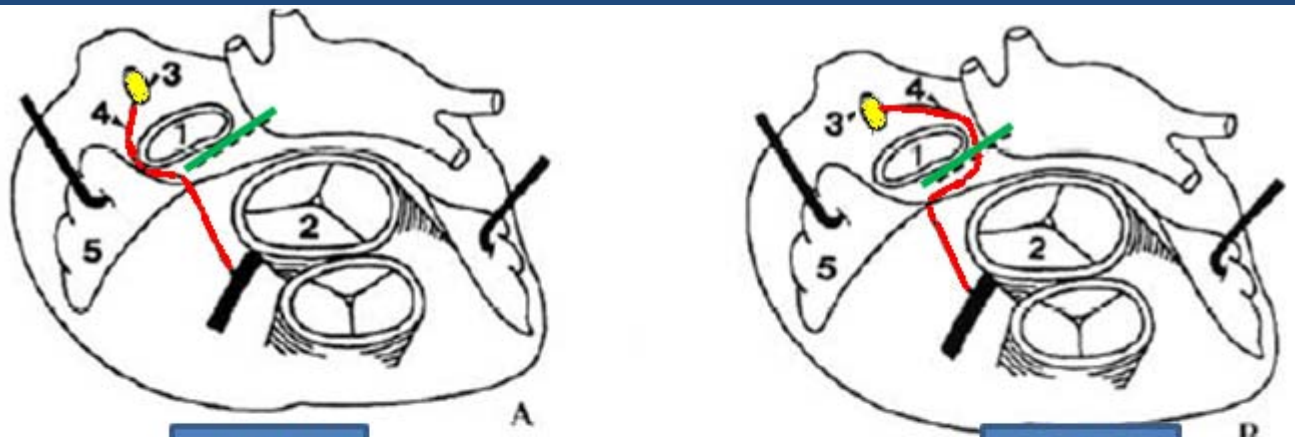
50 human hearts

19/33

66% - right SNA

Ann Thorac Surg 2003;76:732–6

The Clinical Anatomy of the Sinus Node Artery



19/33

10/33

66% - right SNA

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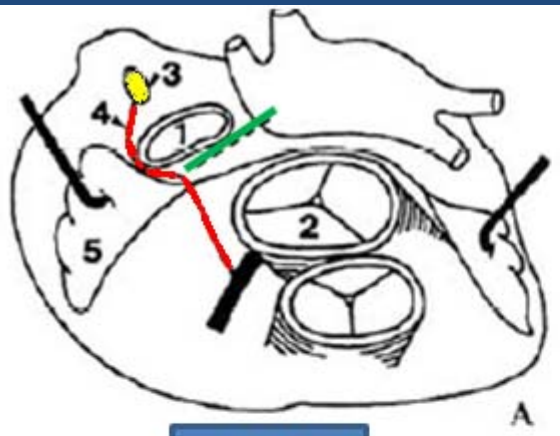
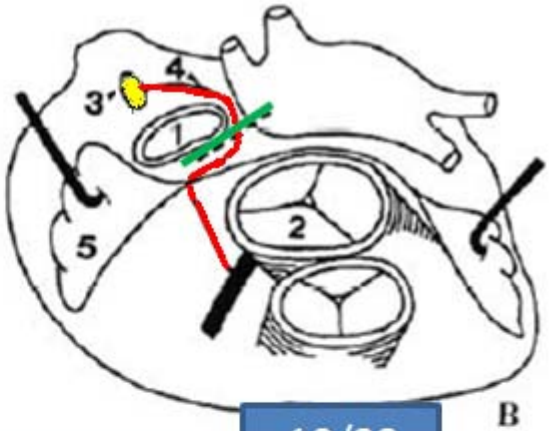
The Clinical Anatomy of the Sinus Node Artery

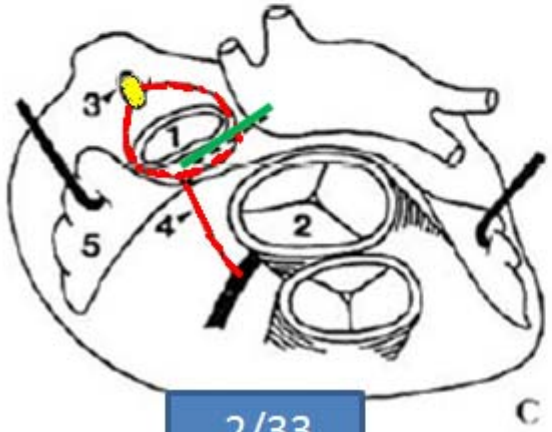


19/33



10/33

66% - right SNA

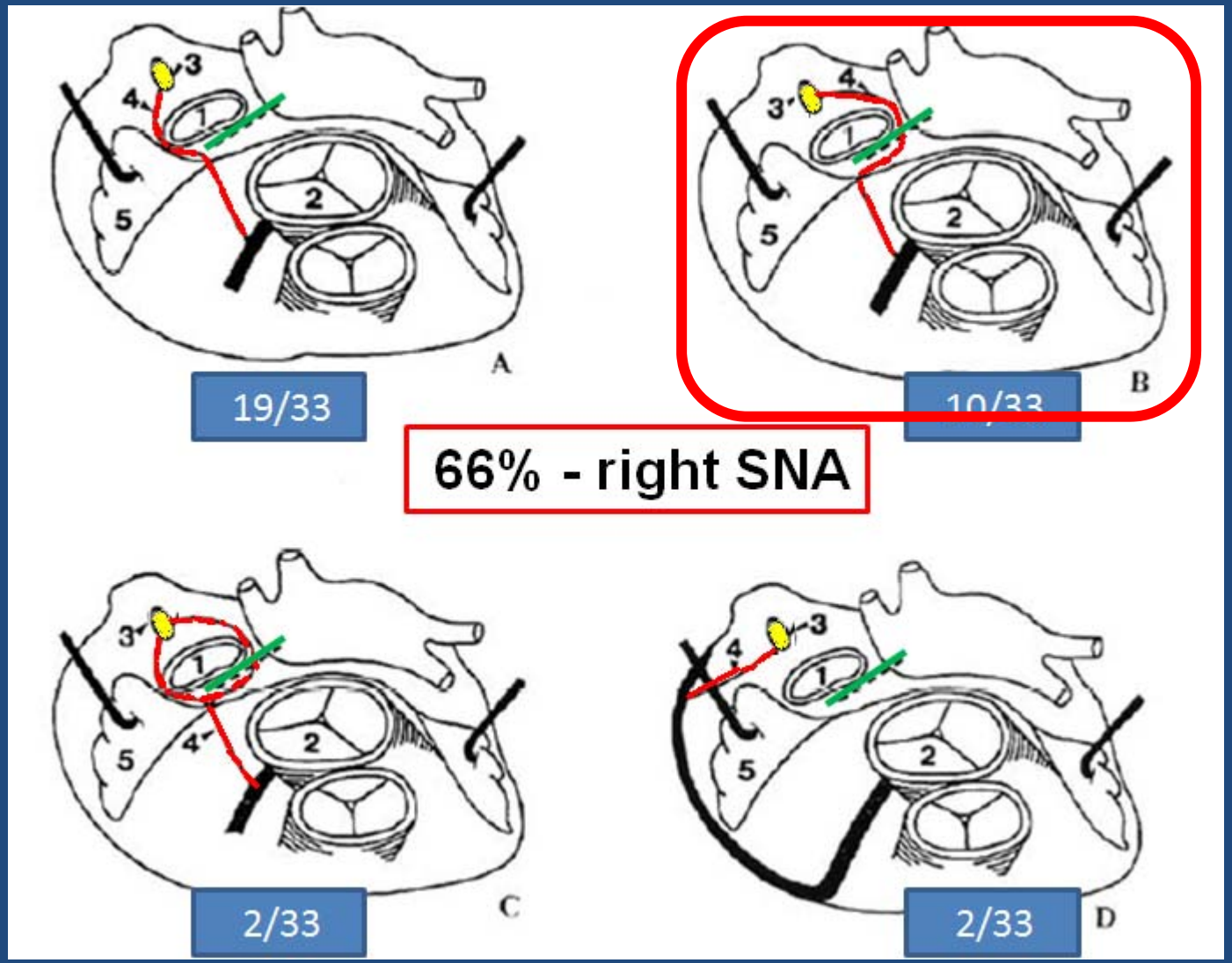


2/33

50 human hearts

Ann Thorac Surg 2003;76:732–6

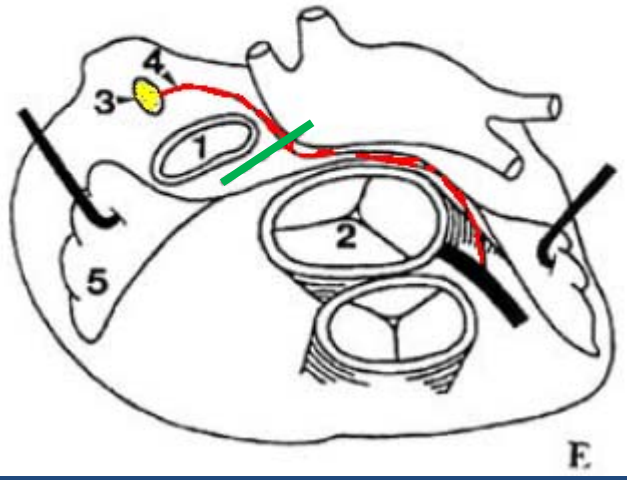
The Clinical Anatomy of the Sinus Node Artery



50 human hearts

Ann Thorac Surg 2003;76:732–6

34% - Left SNA



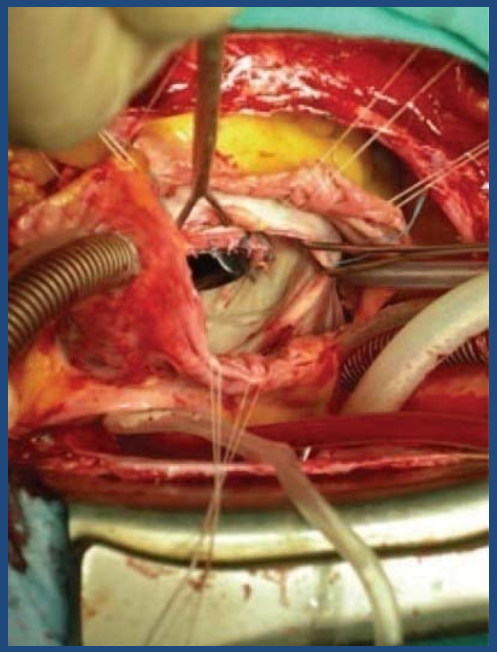
Superior transseptal approach - 54% sinus node artery (SNA) division

Restricted transseptal approach can preserved the sinus node blood supply

Ann Thorac Surg 2003;76:732–6

AIM :

- To review sinus node dysfunction and risk of pacemaker implantation after **restricted** trans septal approach to Mitral valve Surgery.



Methods :

Study Design :

- Retrospective clinical trial
- 141 consecutive patients
- Jan 2006- April 2012
- Median follow up – 27mo (5-64)

Table 1. Baseline + Surgical Characteristics of 141 Patients

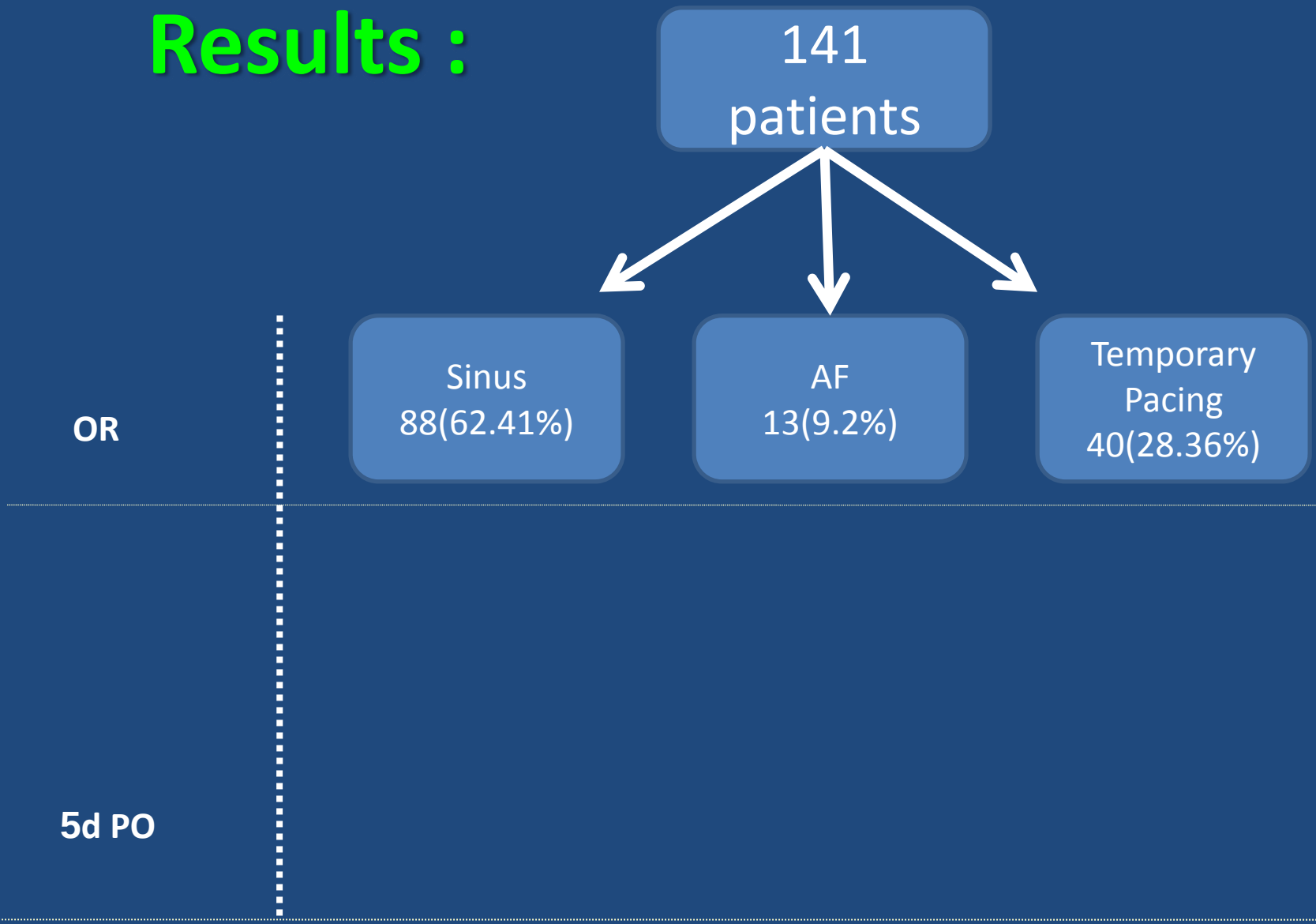
Age — yr		58.84±13.1
Female sex — (%)		47 (33)
Euroscore		4.83± 4.15
Mitral valve pathology (%)	**degenerative** **rheumatic** **ischemic** **endocarditis** **other**	59 (42.45) 35 (25.18) 29 (28.86) 10 (07.19) 6 (04.32)
Redo operation (%)		19 (13.47)
Additional procedures(%)	**CABG**	40 (28.36)
	TVR	57 (40.42)
Pre OP AF- Chronic\PAF(%)		26 (18.43)

Results :

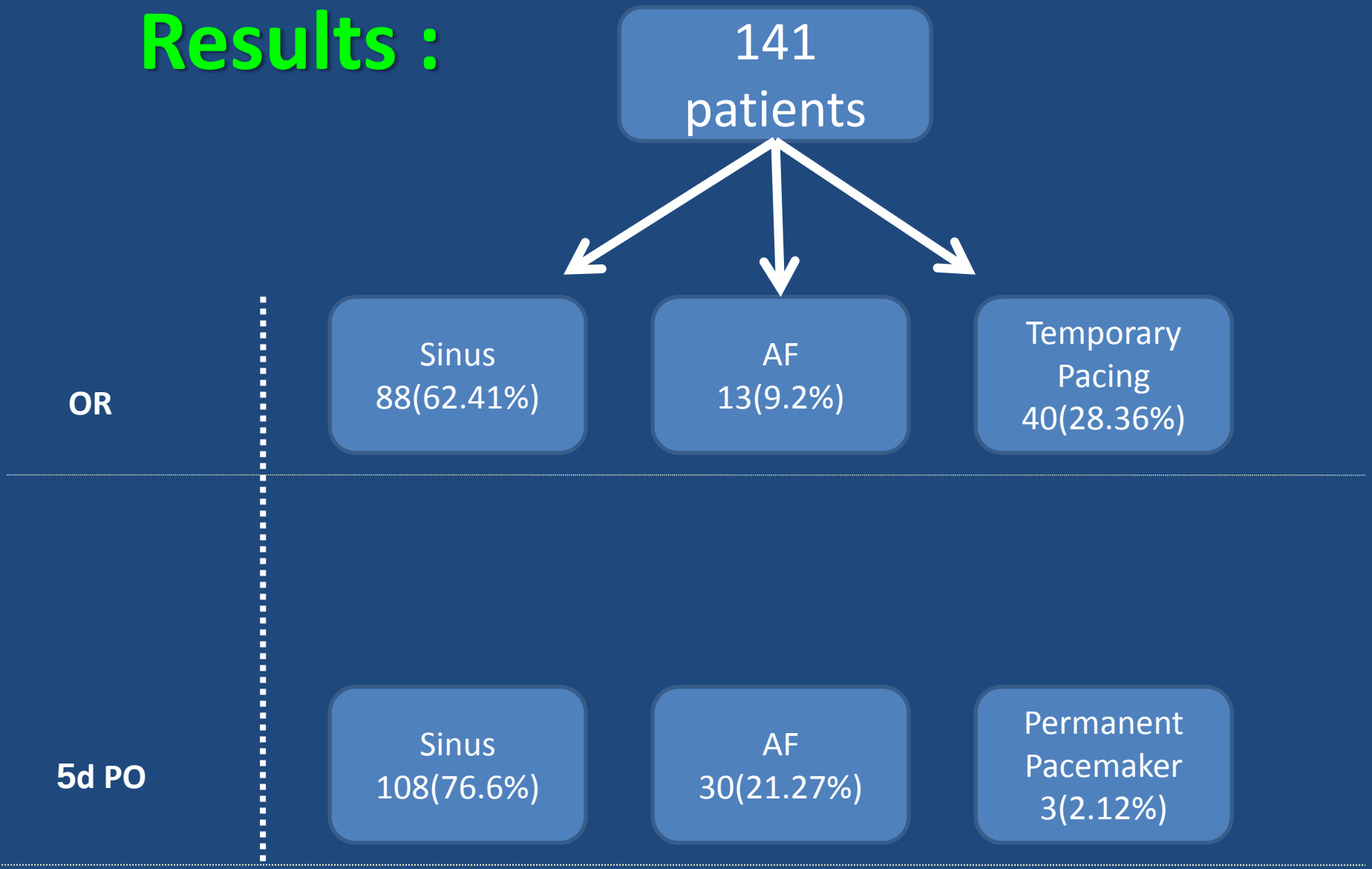
OR

5d PO

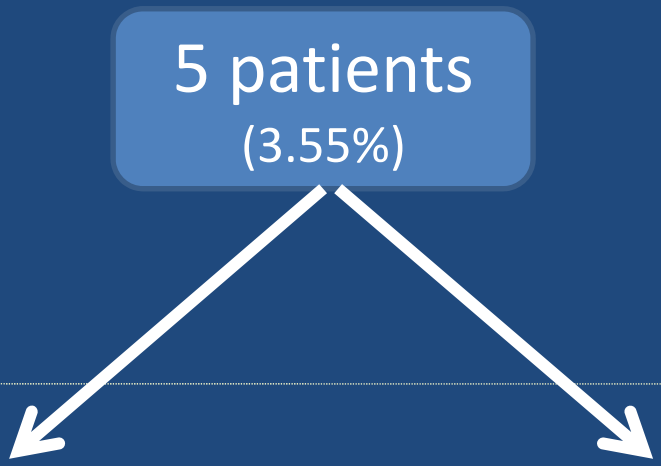
Results :


141 patients
Sinus 88(62.41%)
AF 13(9.2%)
Temporary Pacing 40(28.36%)
OR
5d PO

Results :


141 patients
OR
Sinus 88(62.41%)
AF 13(9.2%)
Temporary Pacing 40(28.36%)
5d PO
Sinus 108(76.6%)
AF 30(21.27%)
Permanent Pacemaker 3(2.12%)

Results – permanent pacemaker implantation (N=141) :



Late
Median
27mo (5-64)

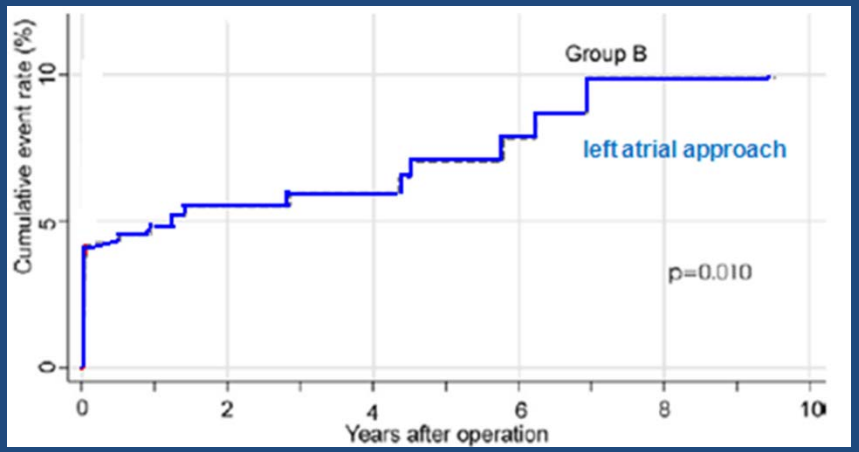
Results – permanent pacemaker implantation (N=141) :

5 patients
(3.55%)

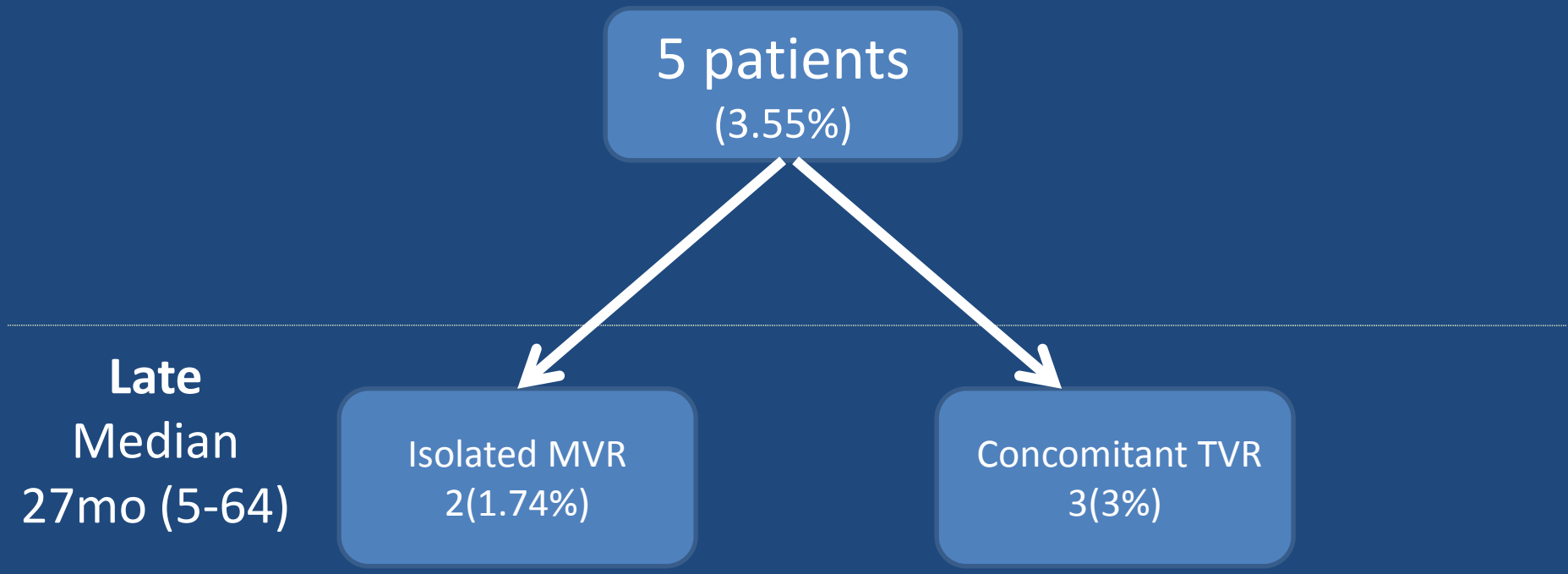
Late
Median
27mo (5-64)

Isolated MVR
2(1.74%)

Concomitant TVR
3(3%)



Results – permanent pacemaker implantation (N=141) :



The incident of residual interatrial septal defects was 1.42 %(n=2)

Conclusions

- **Restricted** transseptal MV approach is feasible and reproducible.
- Sinus node dysfunction is predominantly temporary and does not alter early outcome.
- The risk of pacemaker implantation compares favorably with the reported in the literature for alternative approaches.