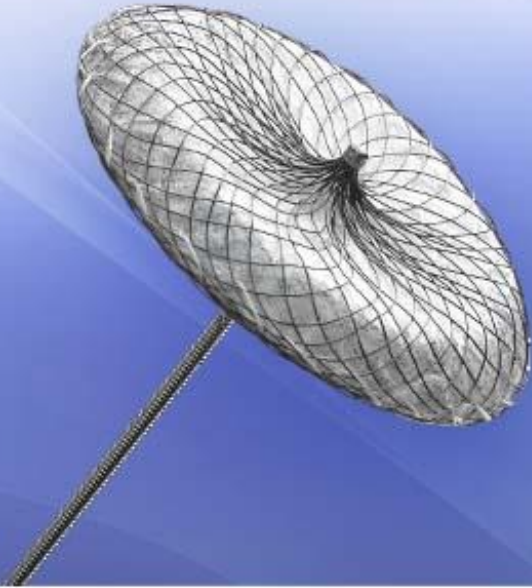
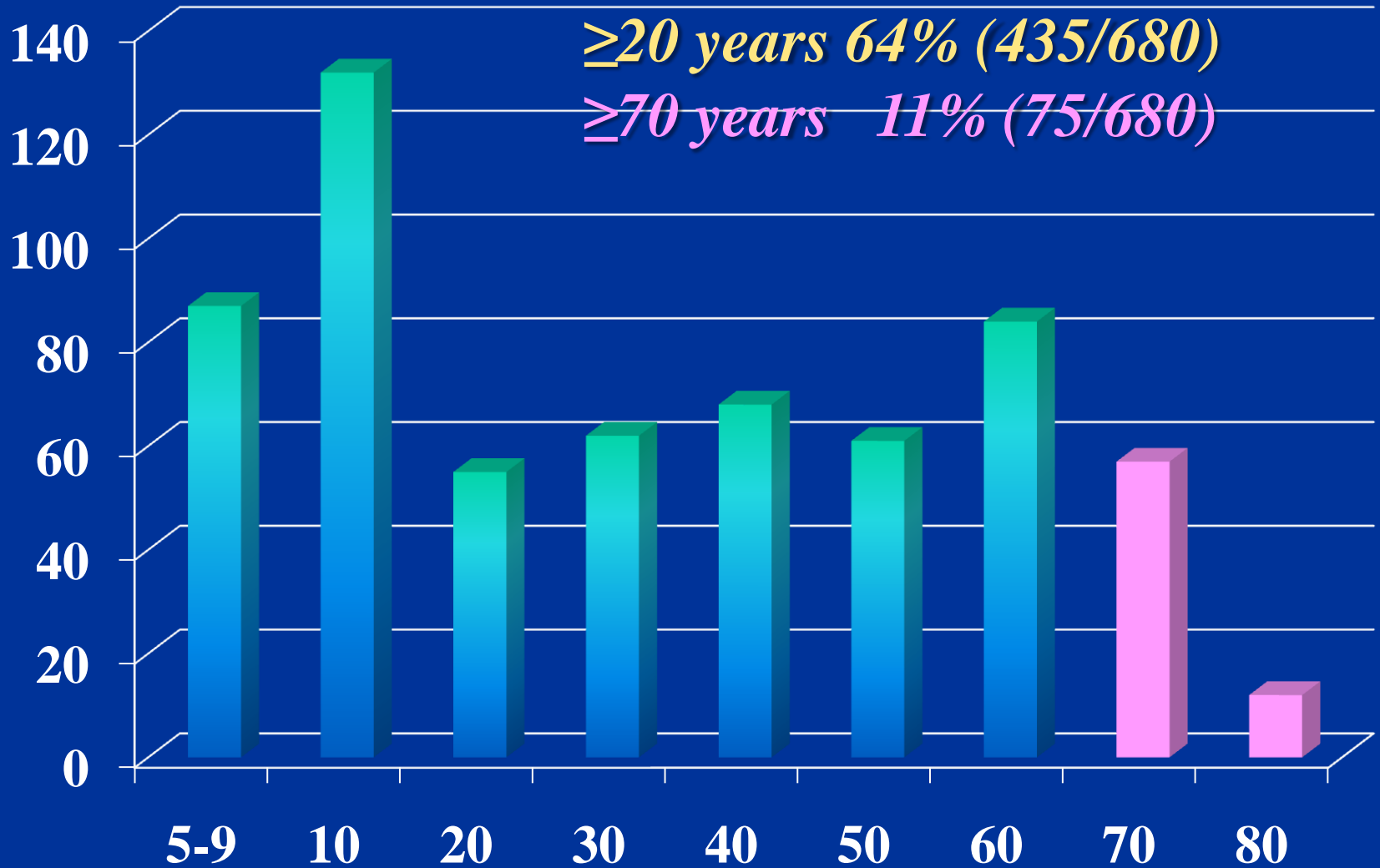


Elderly Patients with Atrial Fibrillation and/or Pulmonary Hypertension



Teiji Akagi, MD, FACC, FSCAI
Cardiac Intensive Care Unit
Okayama University

Age distribution (n=680)

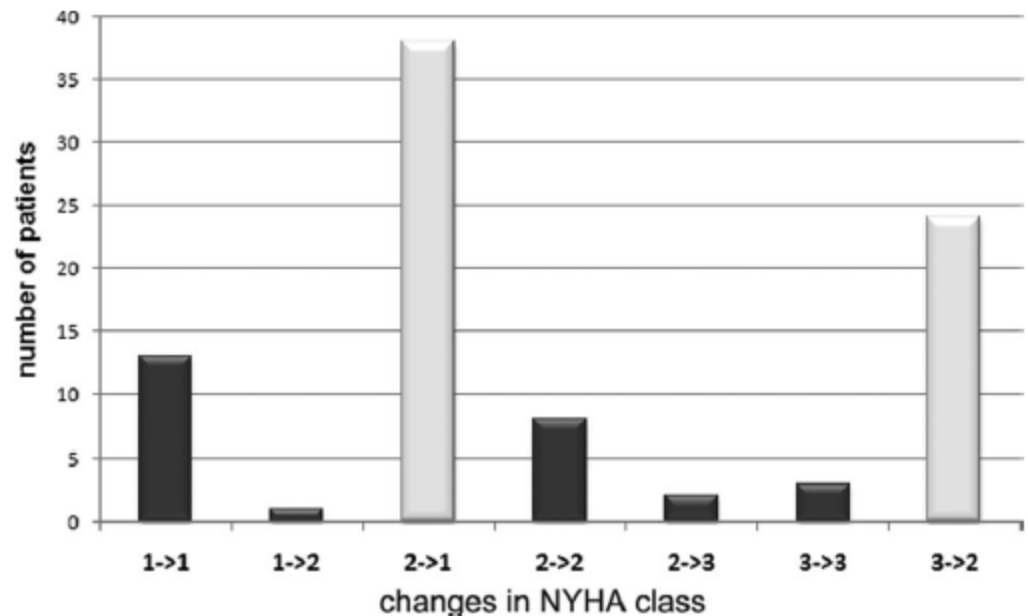


Percutaneous Closure of Atrial Septal Defects

Echocardiographic and Functional Results in Patients Older Than 60 Years

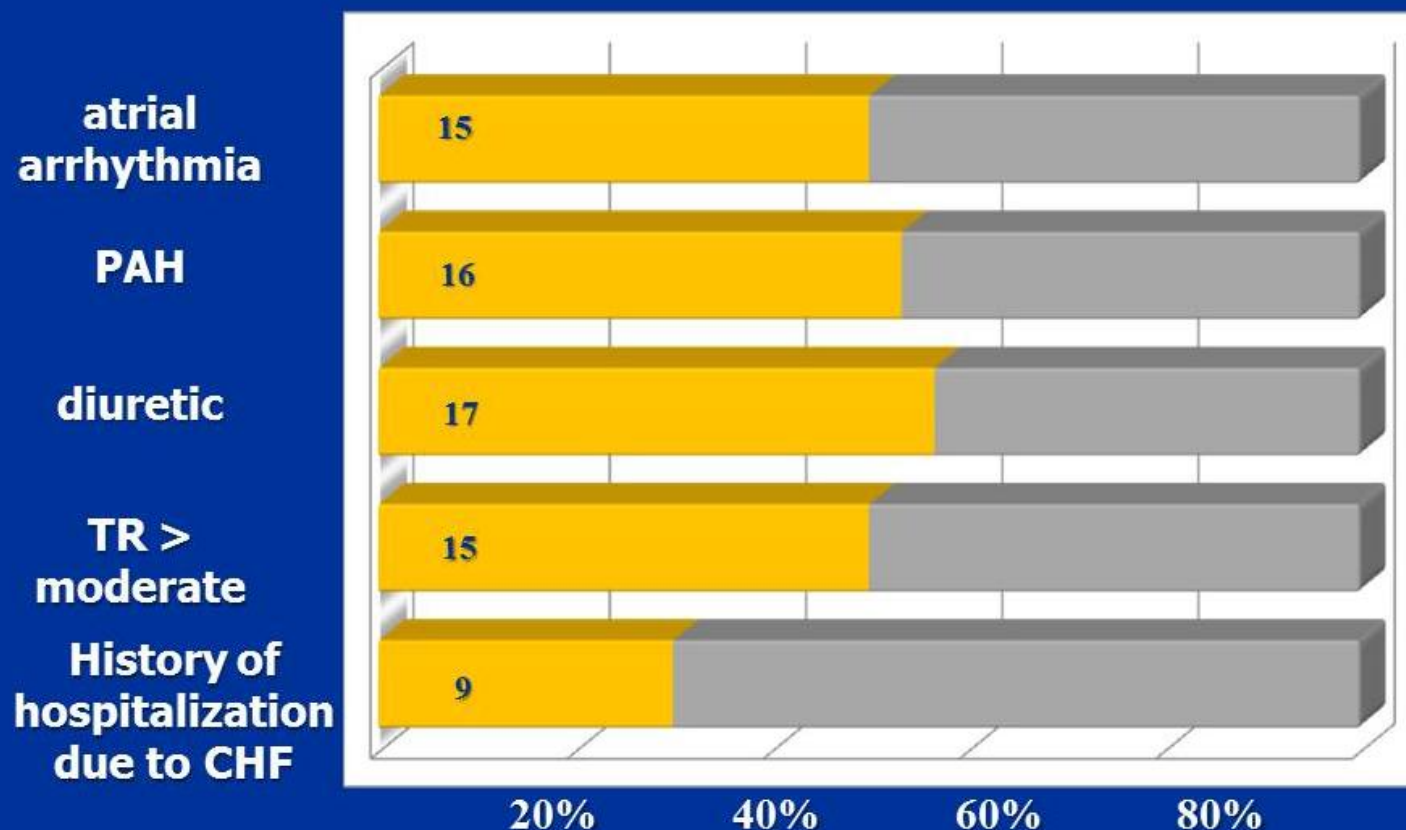
Smita Jategaonkar, MD; Werner Scholtz, MD; Henning Schmidt, MD;
Dieter Horstkotte, MD, PhD, FESC

	Patient Group (n=96)
Age, years	69.9±5.3
Gender, female/male	66/30
Weight, kg	73.7±14.5
Height, cm	166.5±9.3
Shunt volume, % of Q _p	48.7±12.6
Balloon sizing diameter, mm	20.8±5.8
Native diameter, mm	14.8±5.8
Fluoroscopy time, minutes	8.4±5.1



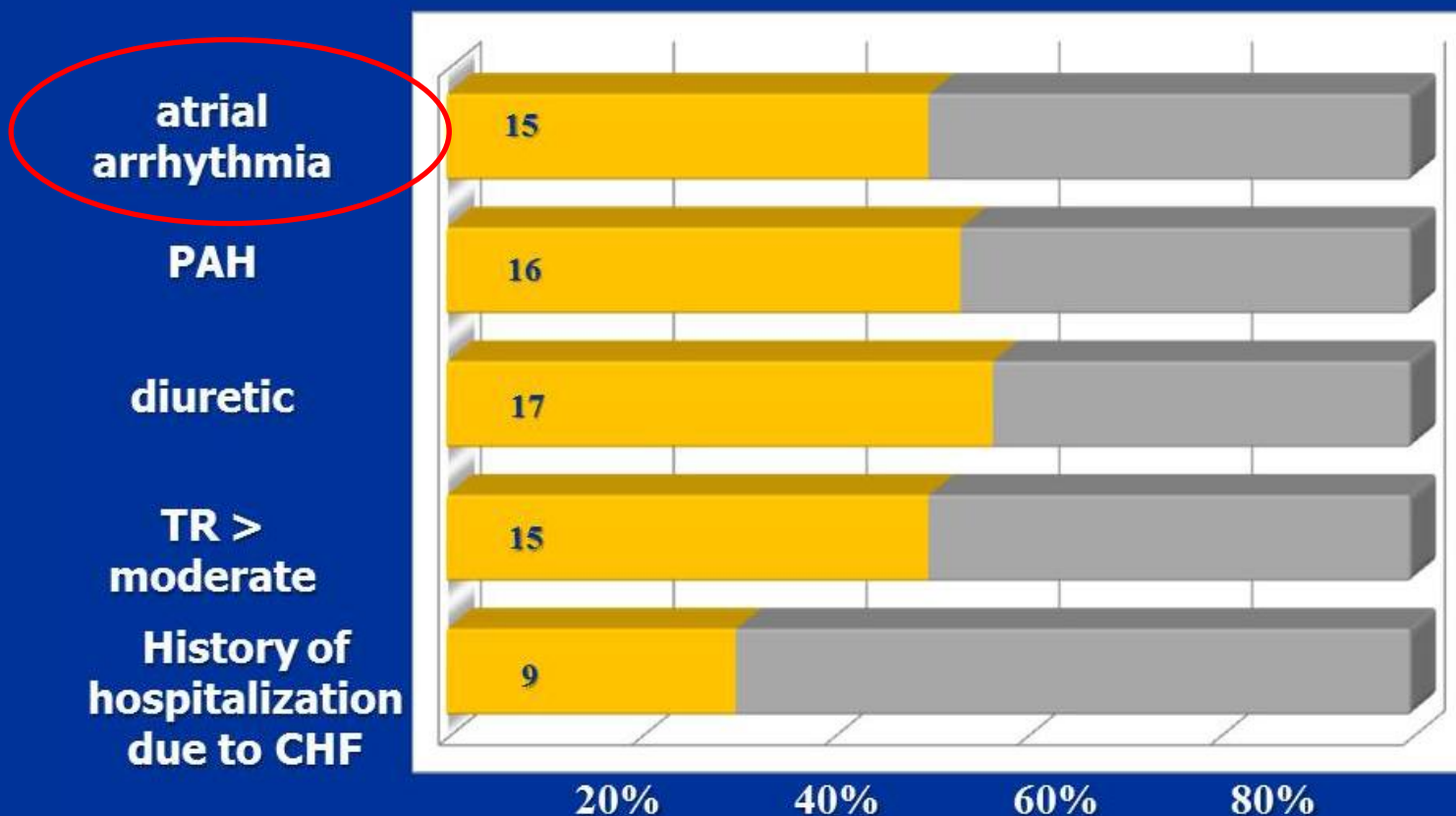
Transcatheter Closure of Atrial Septal Defect in a Geriatric Population

Koji Nakagawa,¹ MD, Teiji Akagi,^{2*} MD, PhD, FSCAI, Manabu Taniguchi,² MD, PhD,
Yasufumi Kijima,¹ MD, Keiji Goto,³ MD, PhD, Kengo F. Kusano,¹ MD, PhD,
Hiroshi Itoh,¹ MD, PhD, and Shunji Sano,⁴ MD, PhD



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Hiroshi Itoh,¹ MD, PhD, and Shunji Sano,⁴ MD, PhD



Case: 75 years Male

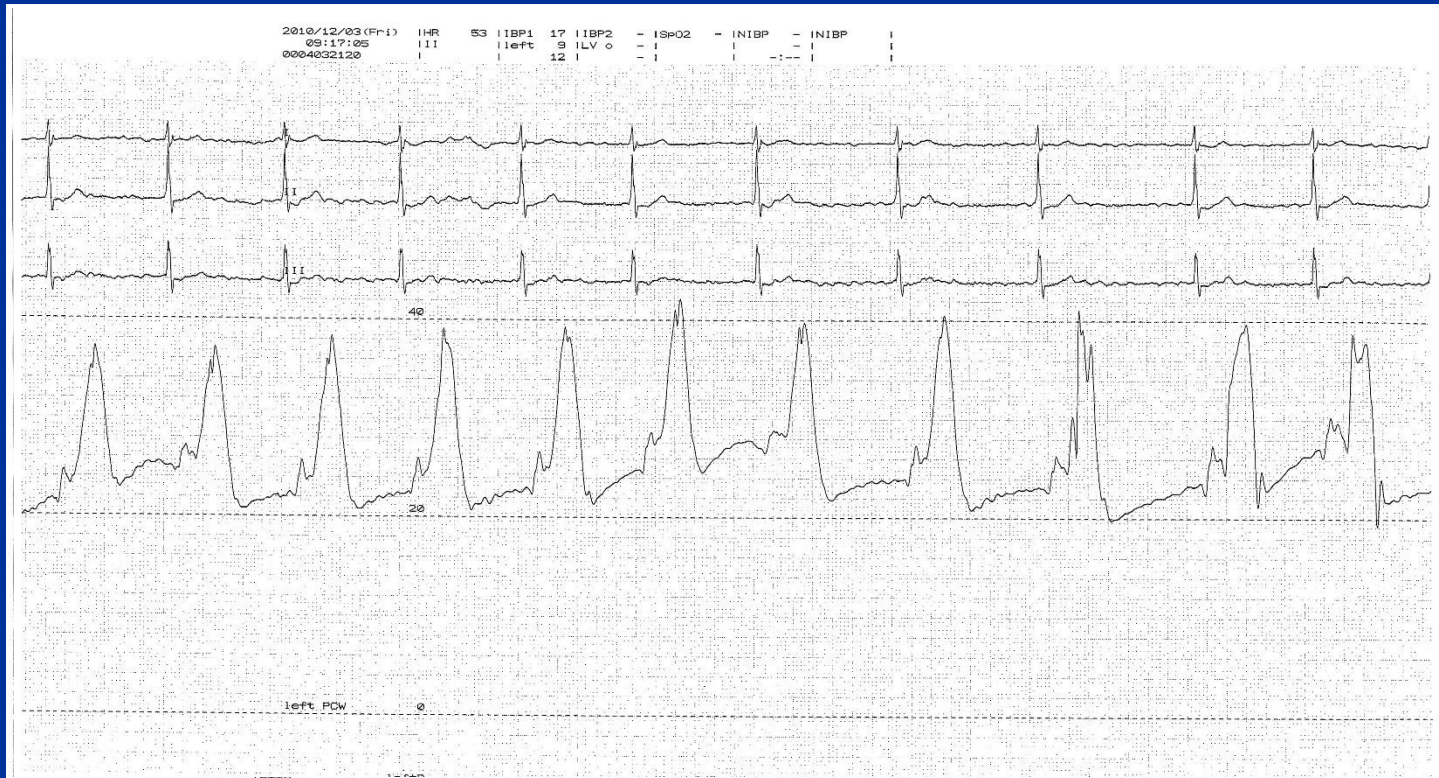
- ✓ *ASD diameter: 24mm*
- ✓ *Mitral regurgitation (mild)*
- ✓ *Qp/Qs: 3.18*
- ✓ *Hypertension, permanent Afib, CKD*
- ✓ *NYHA class III HF despite medication*
- ✓ *PA pressure: 57/19/32 mmHg*
- ✓ *BNP 351 pg/ml*

Chest X-ray



Change in PCWP

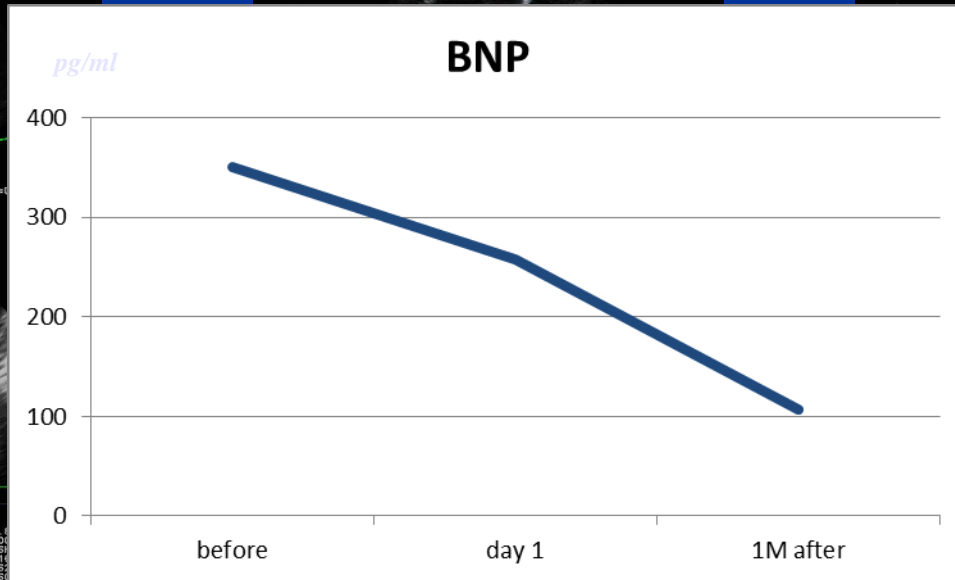
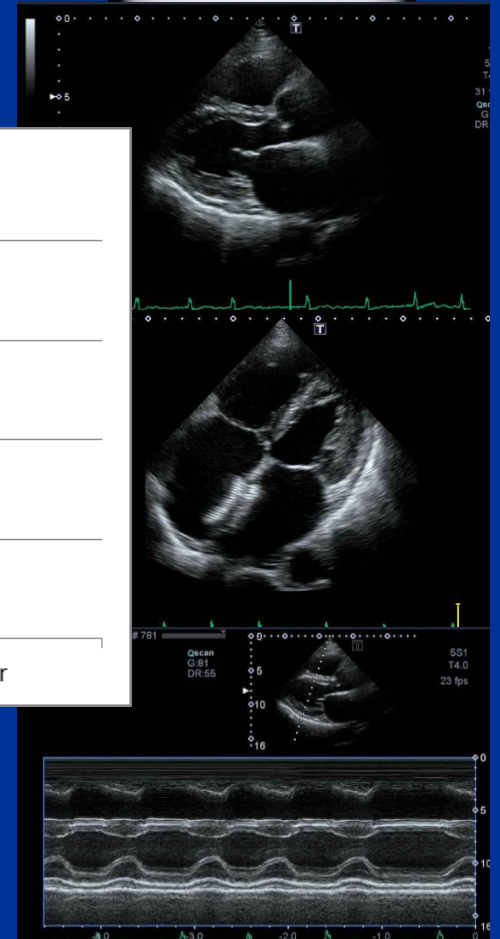
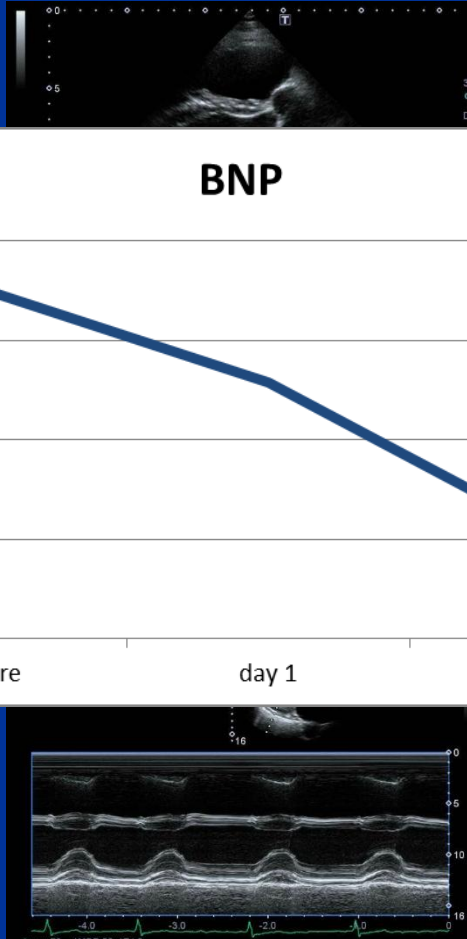
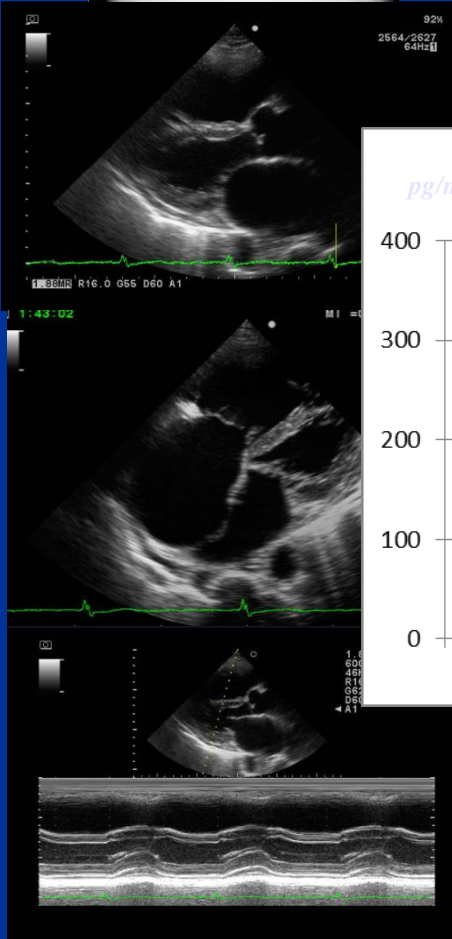
by test balloon occlusion



before

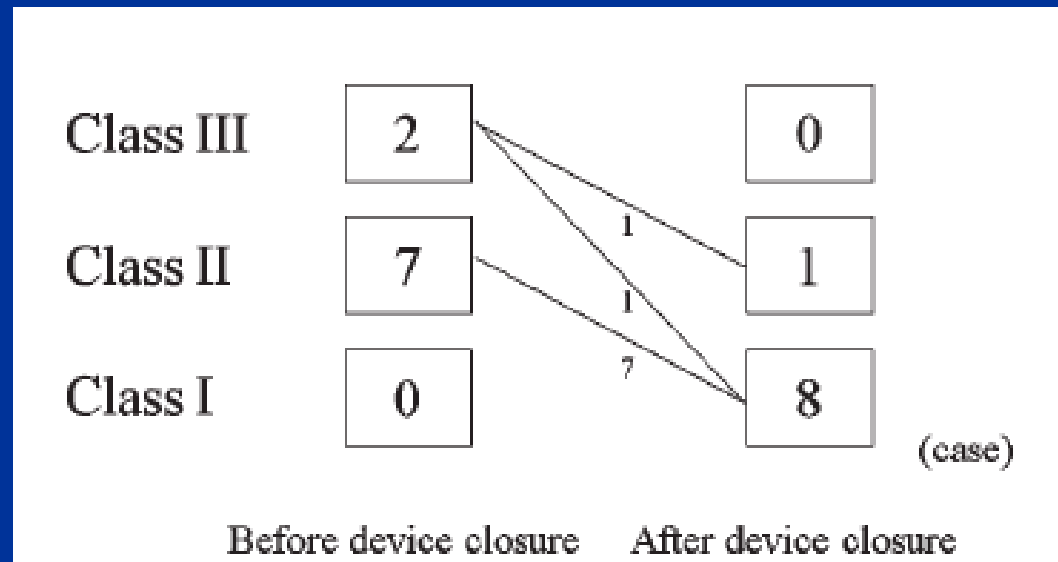
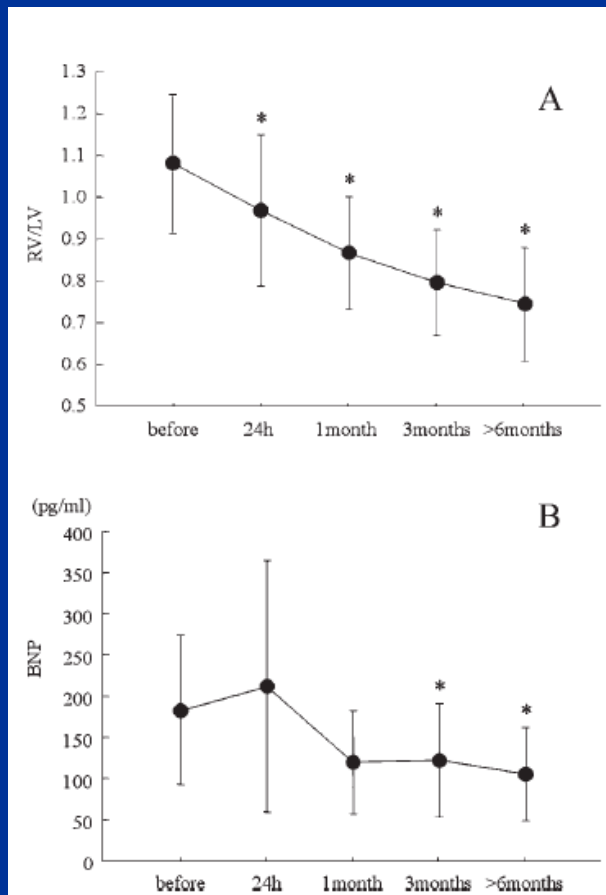
day 1

1M after



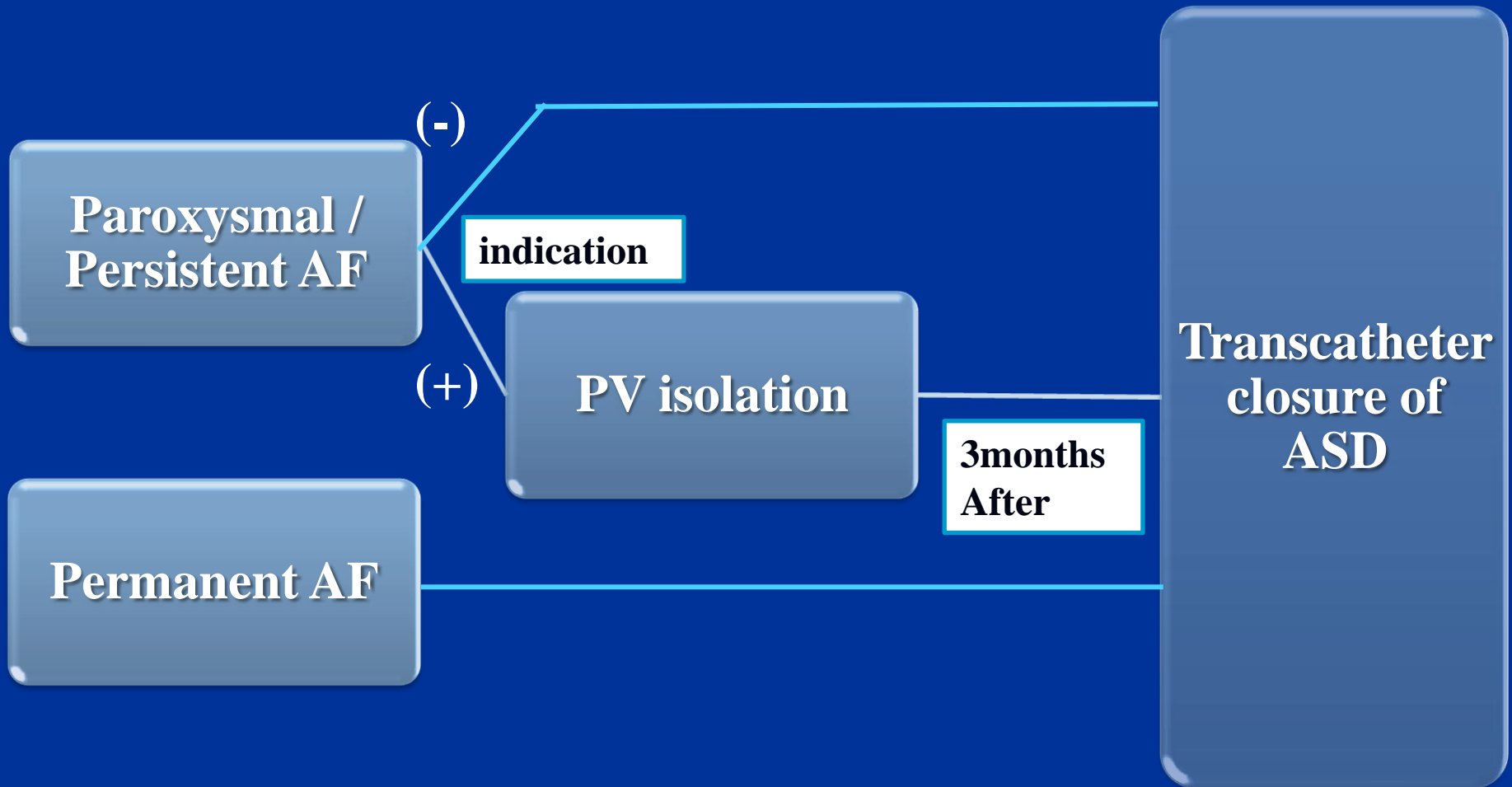
Transcatheter Closure of Atrial Septal Defect in Elderly Patients With Permanent Atrial Fibrillation

Manabu Taniguchi,^{1*} MD, Teiji Akagi,¹ MD, Shinichi Ohtsuki,² MD, Yoshio Okamoto,² MD, Yasuharu Tanabe,³ RDCS, Nobuhisa Watanabe,³ RDCS, Koji Nakagawa,⁴ MD, Norihisa Toh,⁴ MD, Kengo Kusano,⁴ MD, and Shunji Sano,¹ MD



(Catheter Cardiovasc Interv 2009; 73: 682–686.)

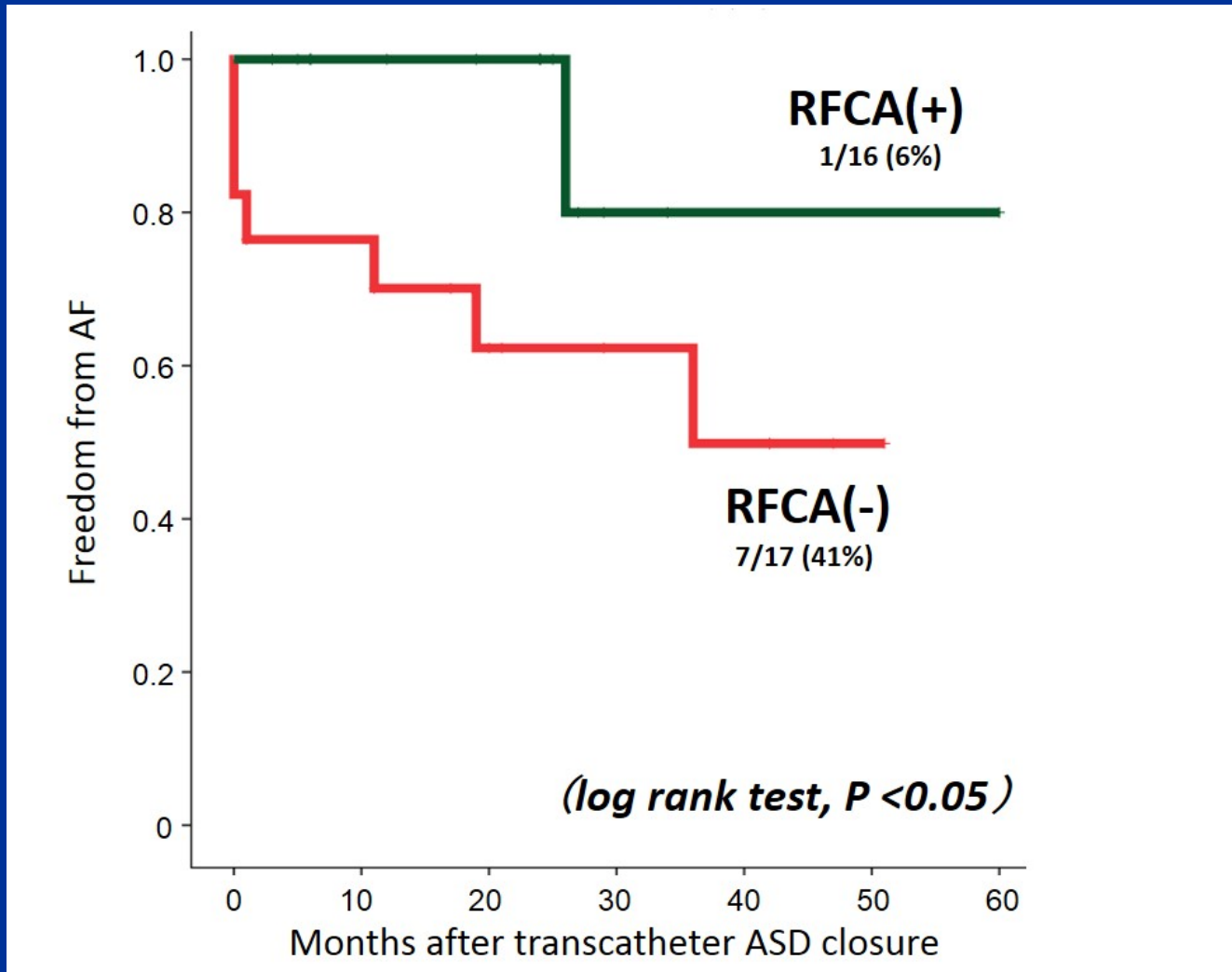
Strategy for adult ASD patients with AF



ASD with paroxysmal or persistent AF

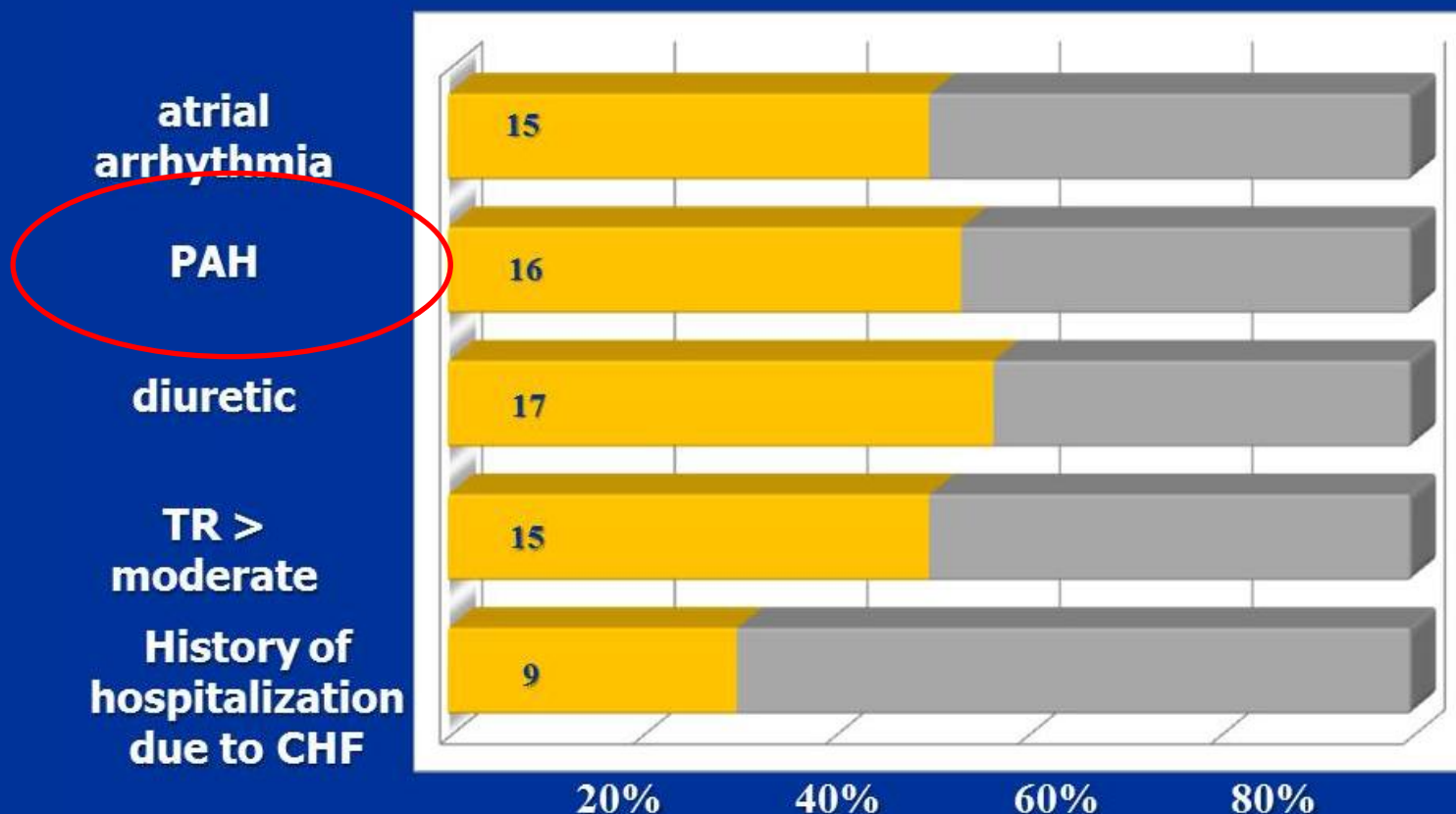
	RFCA (-) n=17	RFCA (+) n=16	<i>P value</i>
Age, y	67 ± 12	56 ± 15	<0.05
Gender (male)	9 (53%)	8 (50%)	NS
ASD diameter (mm)	19 ± 9	17 ± 5	NS
Qp/Qs	2.7 ± 0.9	2.7 ± 0.8	NS
Hypertension	6 (35%)	2 (13%)	NS
Pulmonary hypertension	4 (6.6)	10 (16.4)	NS
LA dimension (mm)	41 ± 6	40 ± 6	NS
anti-arrhythmic agent	5 (29%)	1 (6%)	NS

Recurrence rate of AFib after ASD closure



Transcatheter Closure of Atrial Septal Defect in a Geriatric Population

Koji Nakagawa,¹ MD, Teiji Akagi,^{2*} MD, PhD, FSCAI, Manabu Taniguchi,² MD, PhD,
Yasufumi Kijima,¹ MD, Keiji Goto,³ MD, PhD, Kengo F. Kusano,¹ MD, PhD,
Hiroshi Itoh,¹ MD, PhD, and Shunji Sano,⁴ MD, PhD

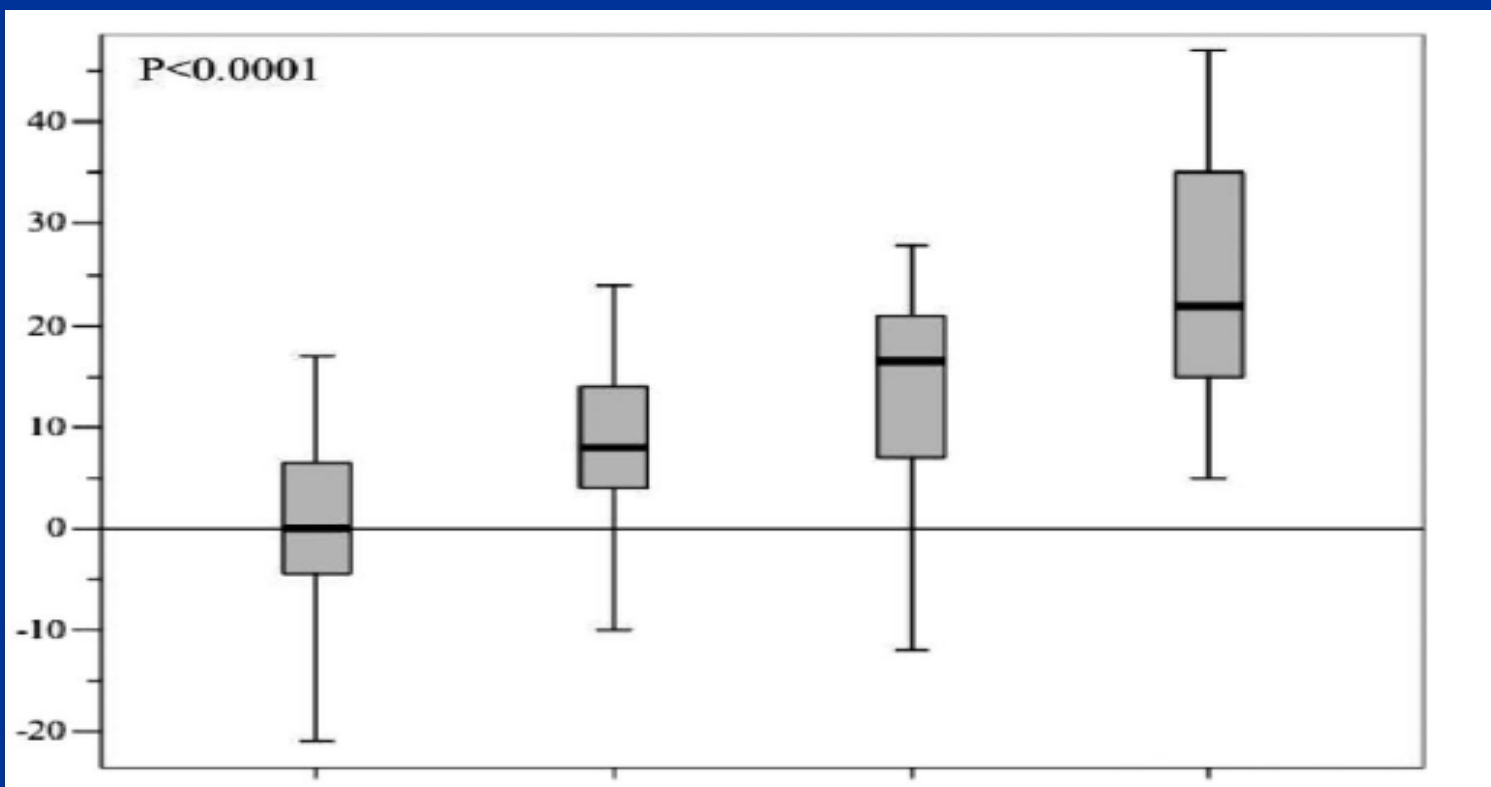


Pulmonary Arterial Hypertension in Patients With Transcatheter Closure of Secundum Atrial Septal Defects

A Longitudinal Study

Gerald Yong, MBBS; Paul Khairy, MD, PhD; Pierre De Guise, MD; Annie Dore, MD; Francois Marcotte, MD; Lise-Andree Mercier, MD; Stephane Noble, MD; Reda Ibrahim, MD

% reduction of PA pressure



<40

40-49

50-59

≥ 60

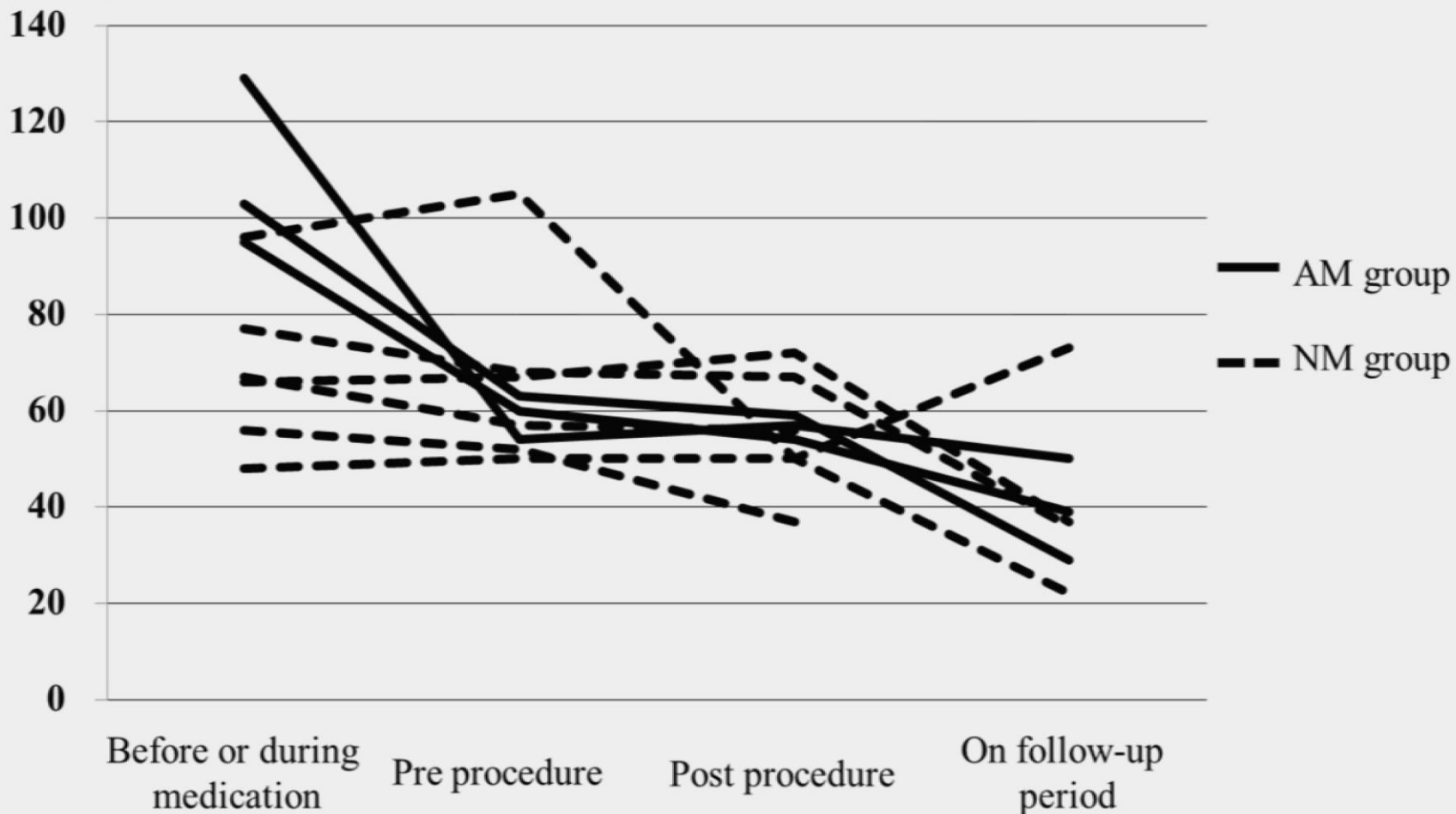
SPAP (mmHg)

(Circ Cardiovasc Intervent 2009)

Catheter closure of ASD and severe PH

Clinical course of tricuspid regurgitation pressure gradient (mmHg)

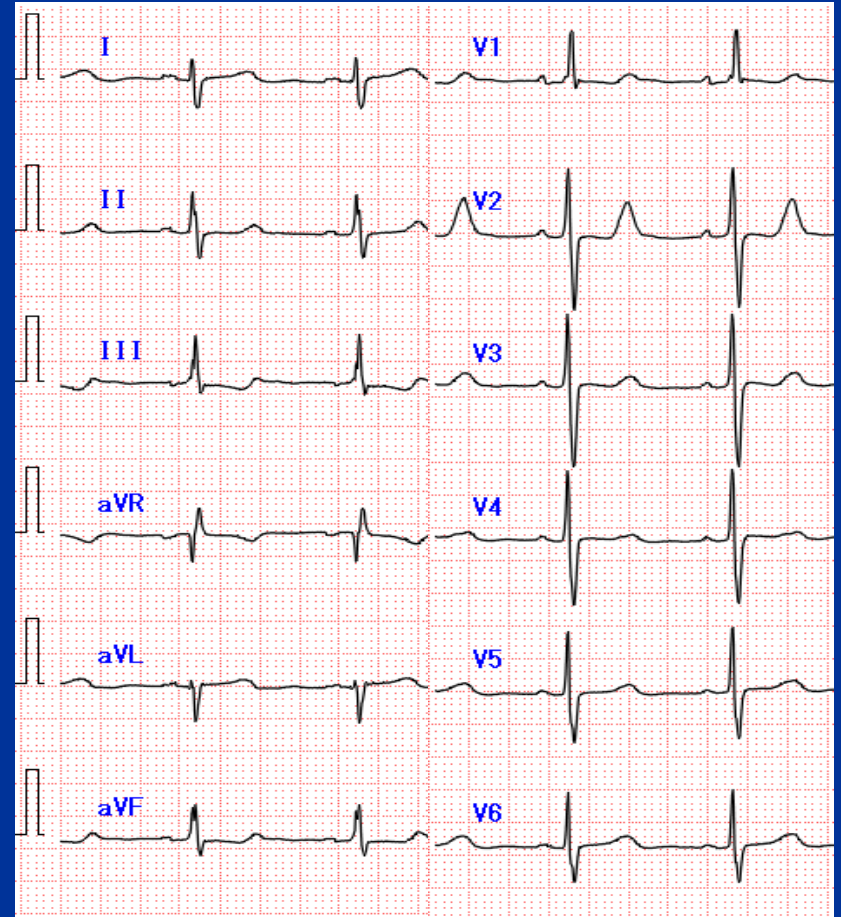
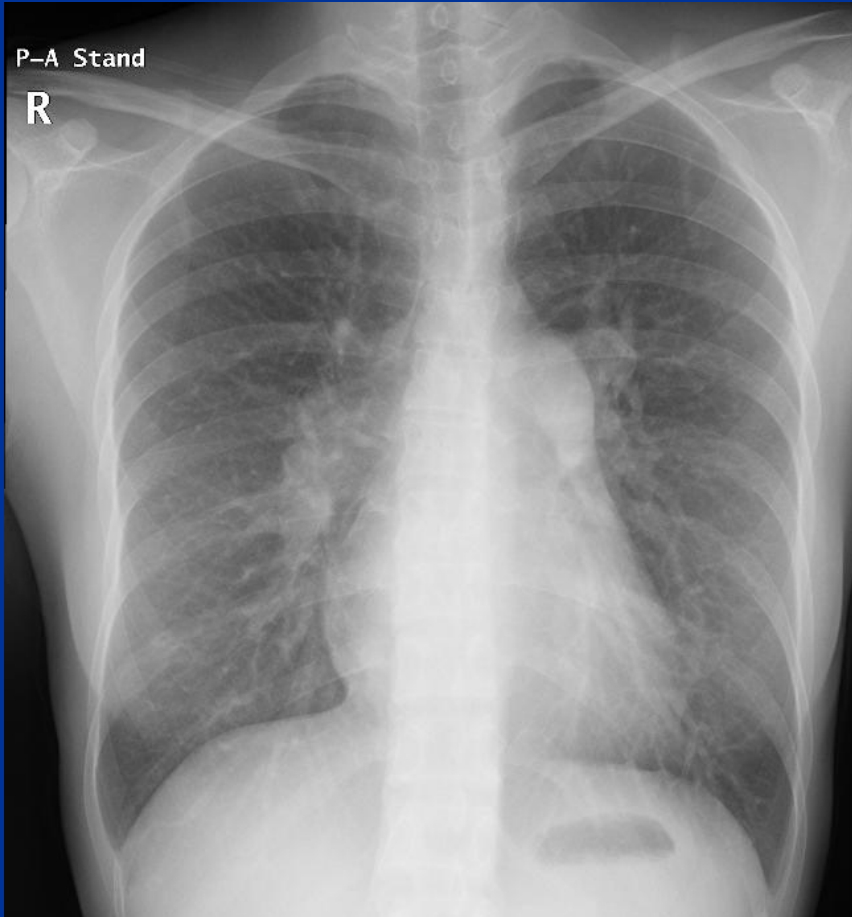
(mmHg)



Conclusions

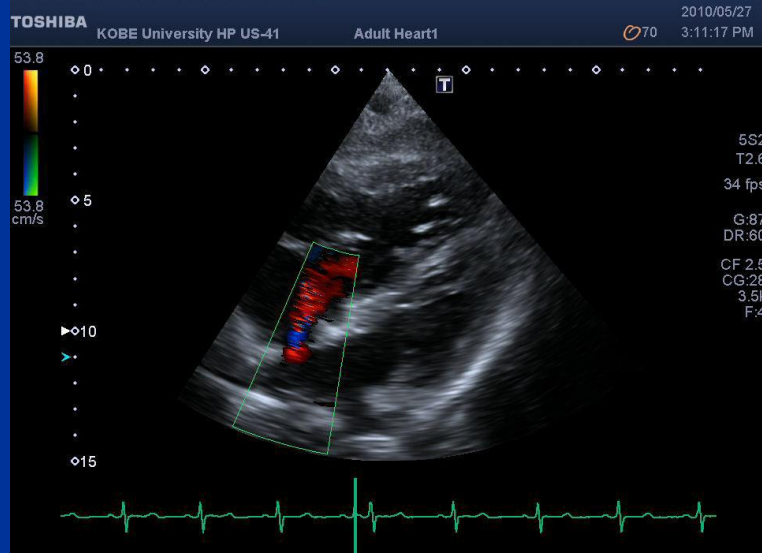
- ◆ Even in elderly patients with ASD who complicated with atrial fibrillation, catheter closure is effective and valuable, contributes to improvement of their daily activities.
- ◆ Not only the technical skills but also peri-procedural management is crucial for good and safe procedural outcome in elderly patients with ASD.

ASD with Severe Pulmonary Hypertension



34 years old female, Dyspnea, Syncope after exercise

ASD + severe PH



Estimated PAP **113/32 mmHg**

RA/RV dilatation

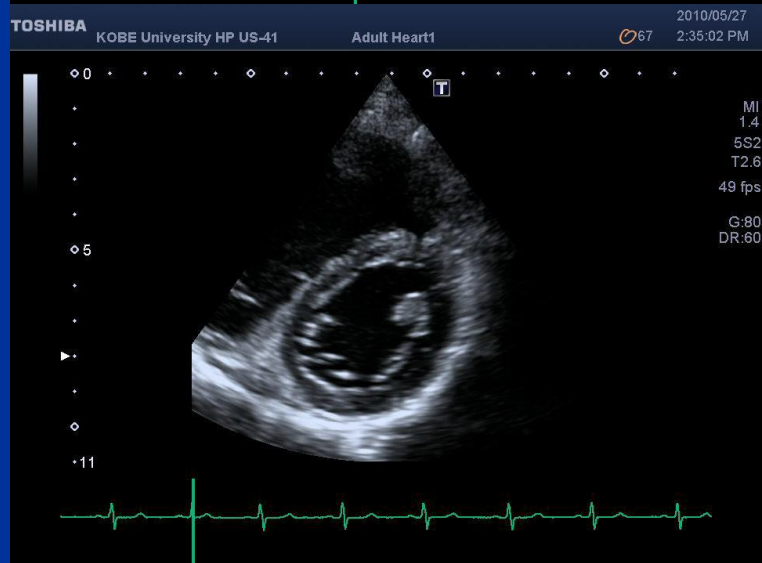
ASD

defect=15 mm x 13.5 mm

L→R shunt (++)

R→L shunt (+)

Qp/Qs = 1.1



Advanced therapy for ASD with PAH

5/26/2010

6MWD 20m

PA 87/30 (57), PVR 697, $Q_p/Q_s=1.32$



bosentan	250mg
sildenafil	60mg

7/26/2010

6MWD 350m

PA 60/21 (35), PVR 291, $Q_p/Q_s=2.19$



10/29/2010

catheter closure of ASD

Clinical Course

WHO FC III

WHO FC II

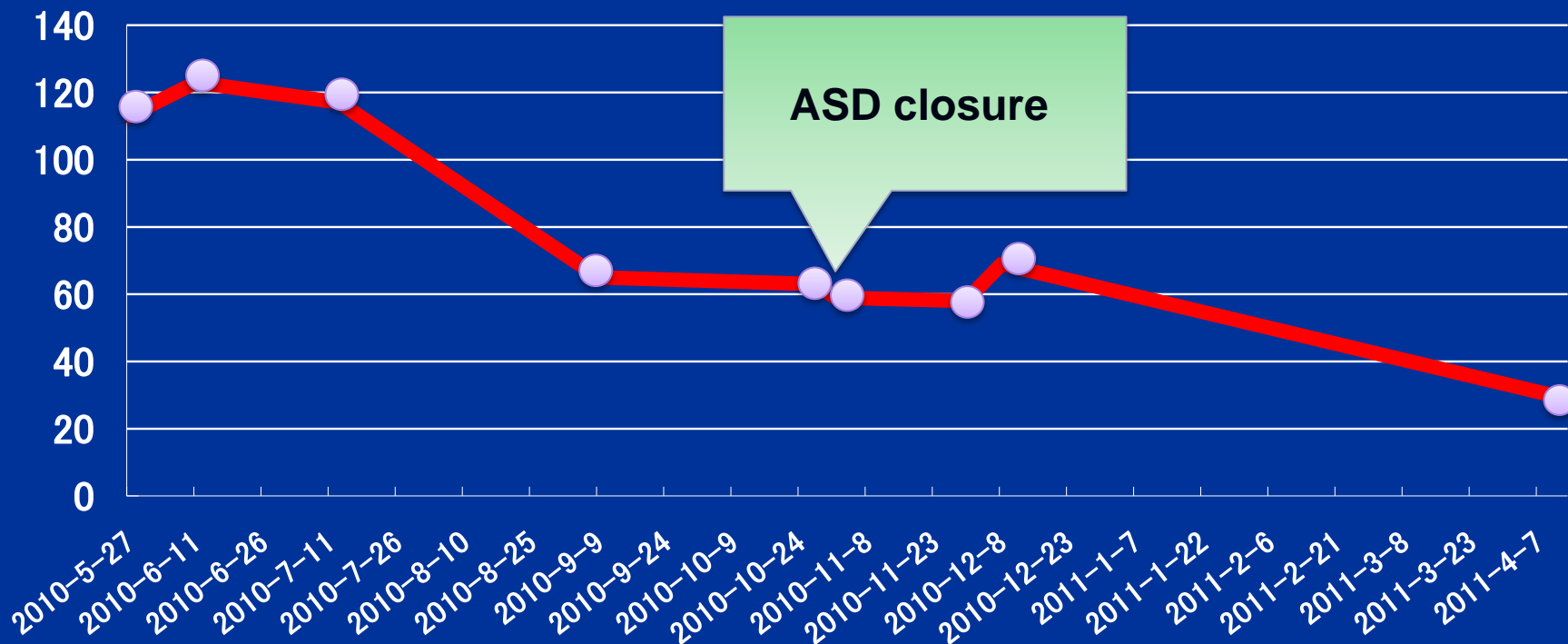
WHO FC I

bosentan 250 mg

sildenafil 60 mg

ASD closure

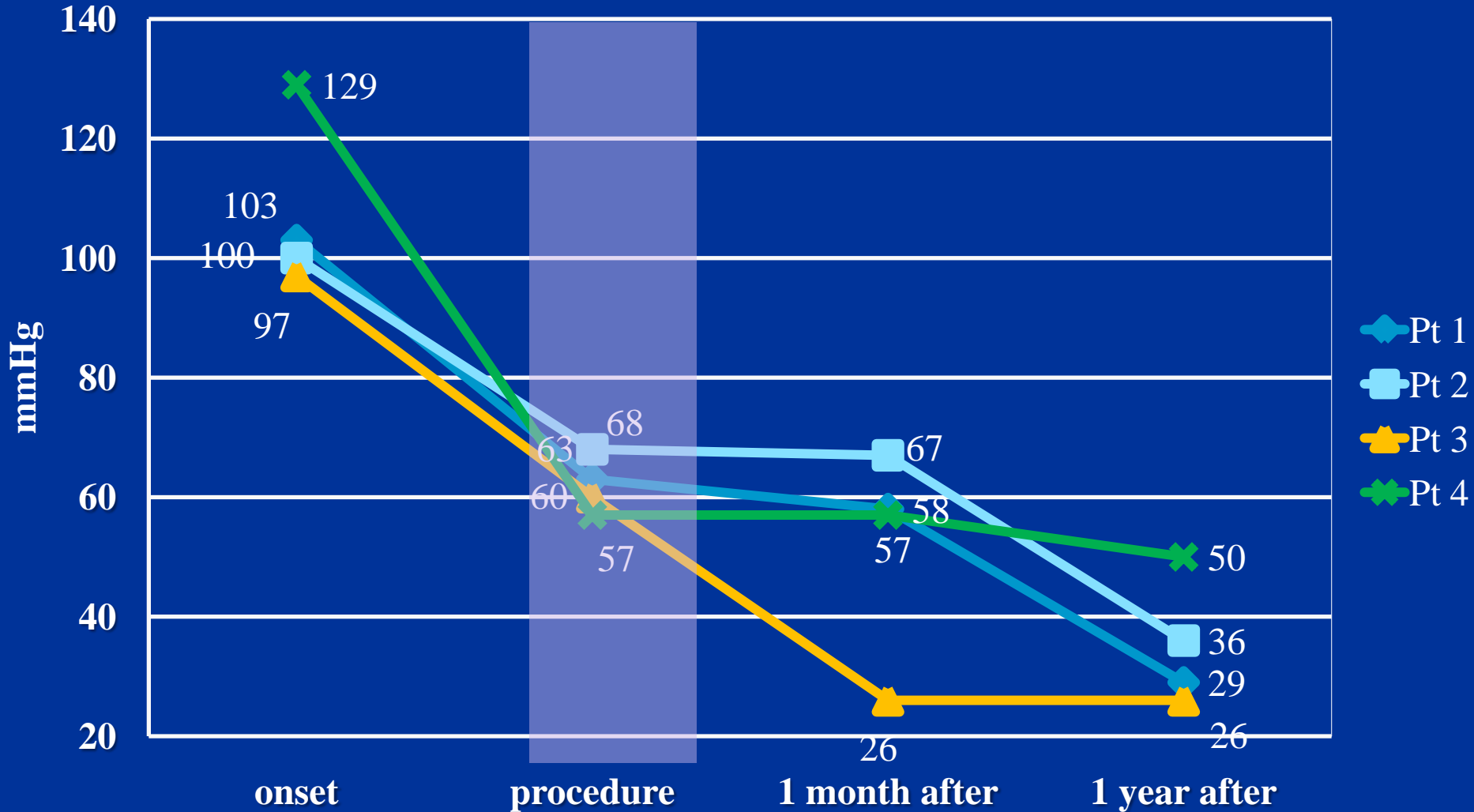
TR-PG
(mmHg)

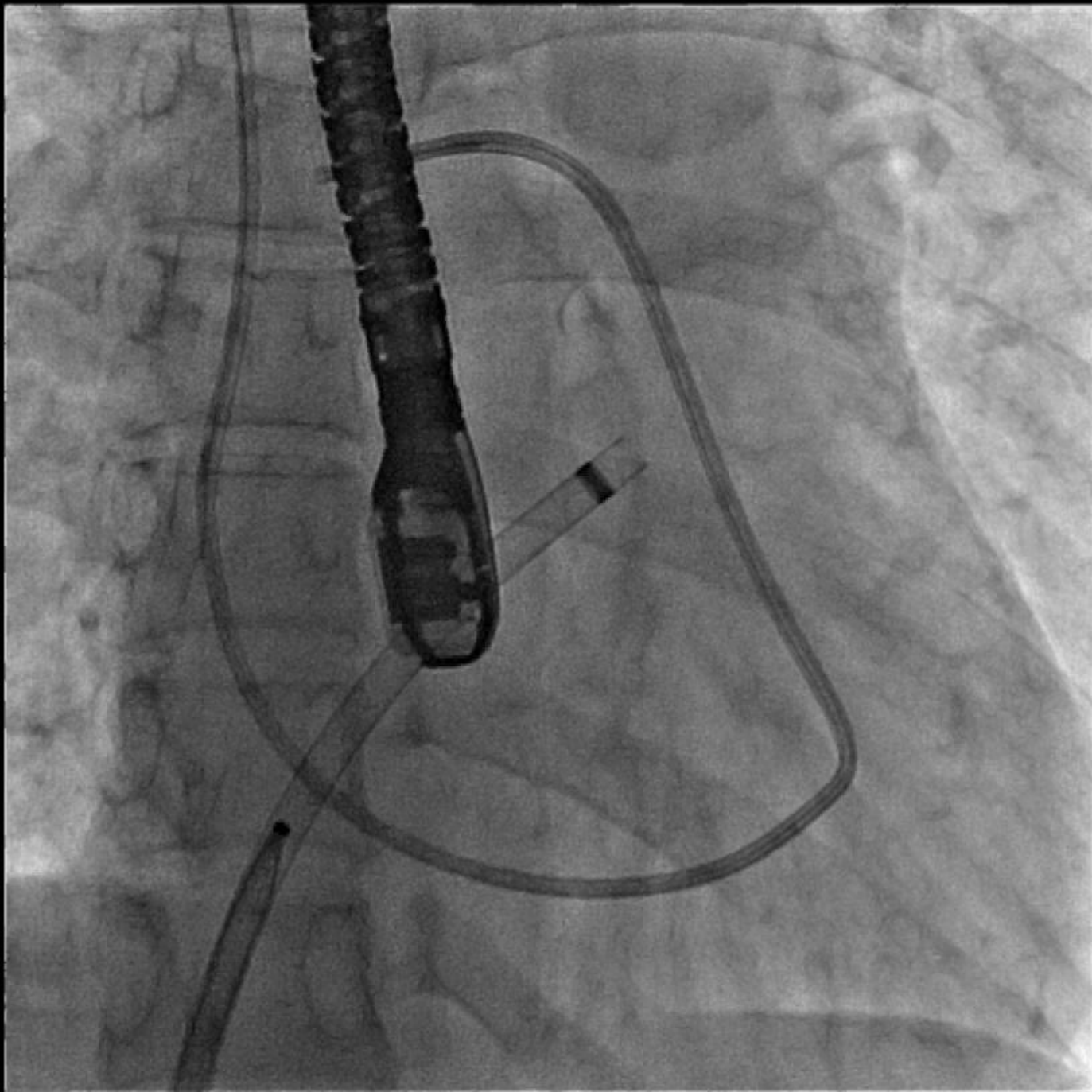


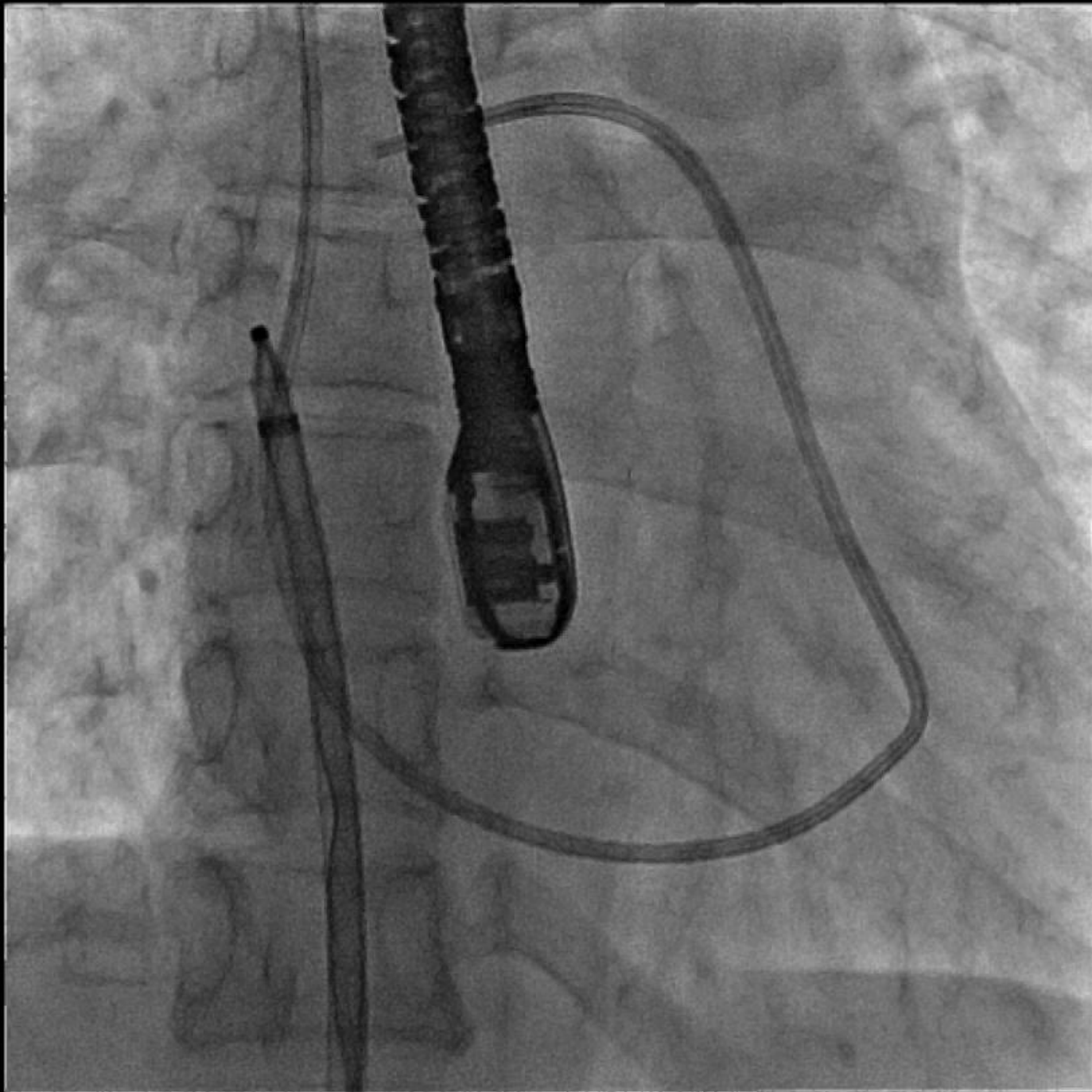
Qp/Qs=1.32
PVR 697
mPAP=57

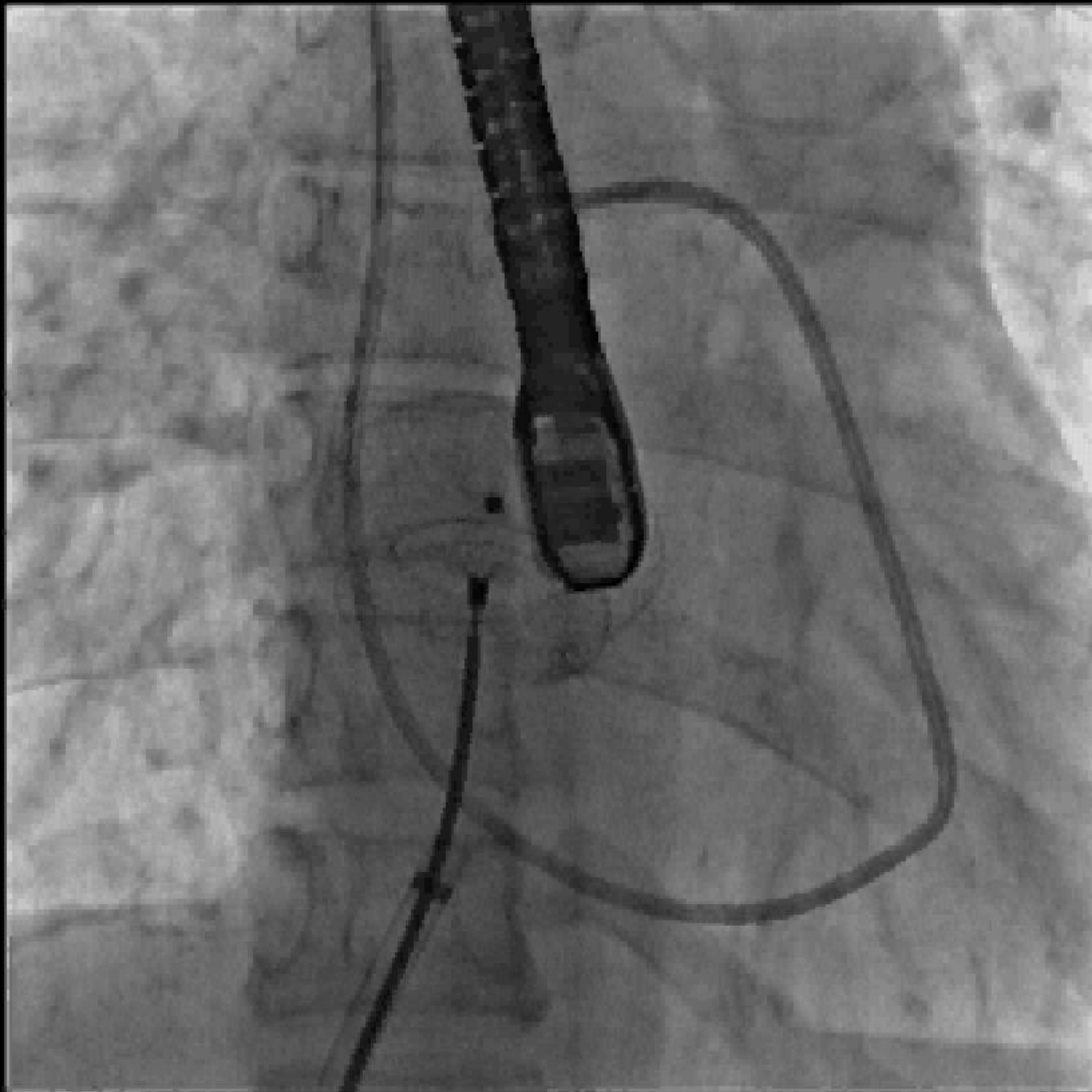
Qp/Qs=2.19
PVR 291
mPAP=35

Follow up data (TR PG)









結果

患者背景(全患者)

Patient number	33
Age (yrs)	62±14
Male / female	17 / 16
Paroxysmal / persistent AF	29 / 4
ASD diameter (mm)	18±7
Qp/Qs	2.7±0.8
Hypertension	16 (55%)
Pulmonary hypertension	8 (55%)
LA dimension (mm)	41±6
Prior RFCA	16 (55%)

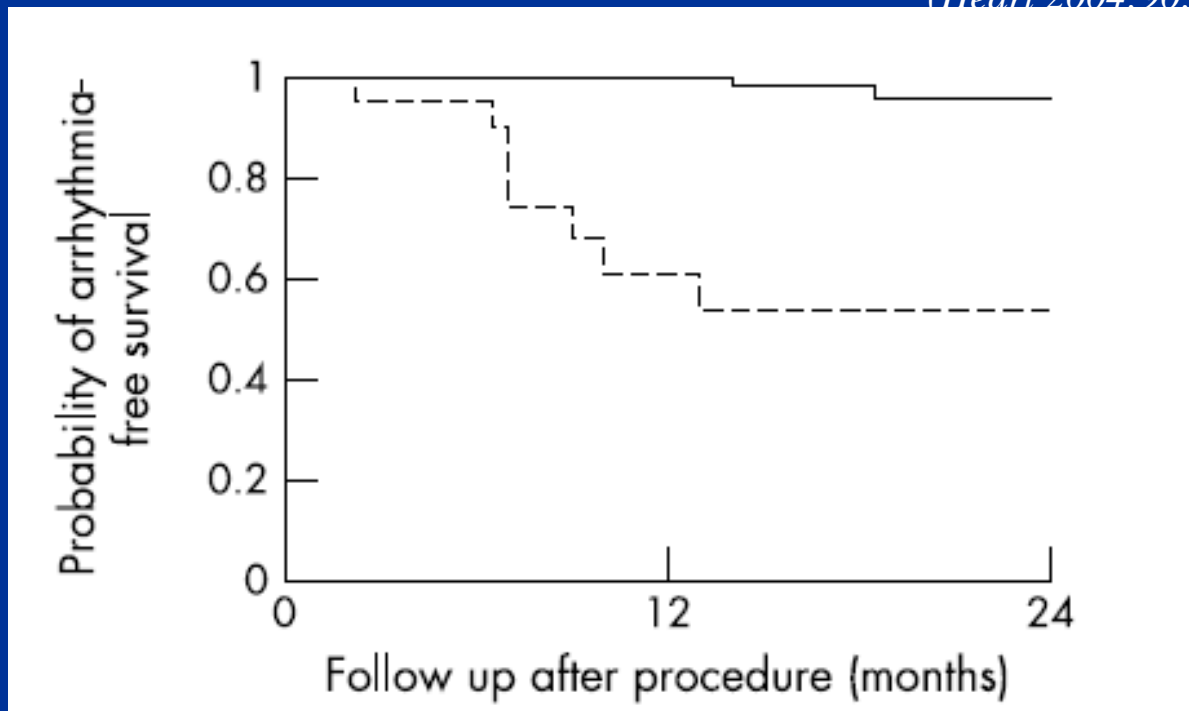
- ✓ ASD閉鎖術後短期～中期では閉鎖前に認められた心房性不整脈が有意に減少する。

(Heart 2010;96:1789-1797)



- ✓ ASD閉鎖前に心房性不整脈の既往がある患者は、術後短期でも心房性不整脈の頻度が高い。

(Heart 2004;90:1194-1198)

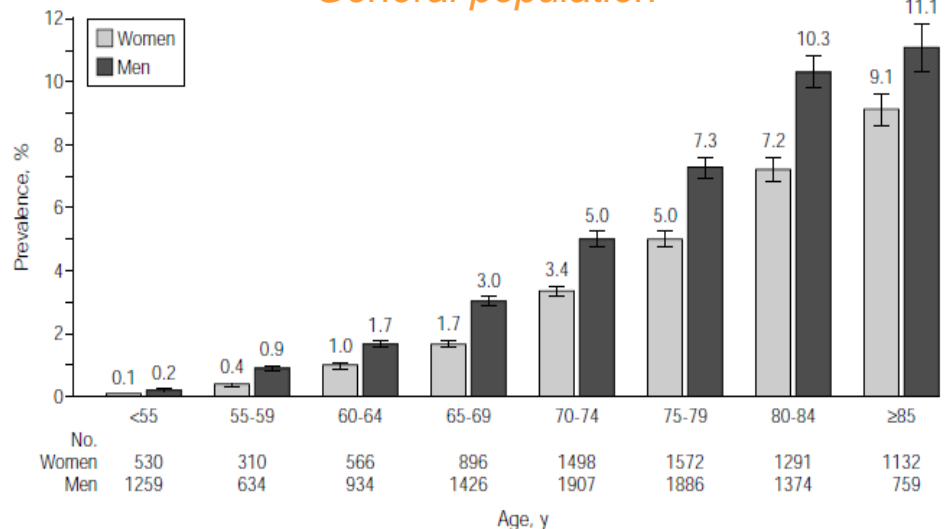


背景

- ✓ 心房細動(Atrial fibrillation: AF)は、特に中高年以降の心房中隔欠損症(Atrial septal defect: ASD)患者において、最も頻度の高い併存症の一つである。
(Gatzoulis MA, et al. N Engl J Med 1999;340:839-846)
- ✓ 心房細動の発症は、ASD患者において心不全やQOL低下をもたらす一因である。

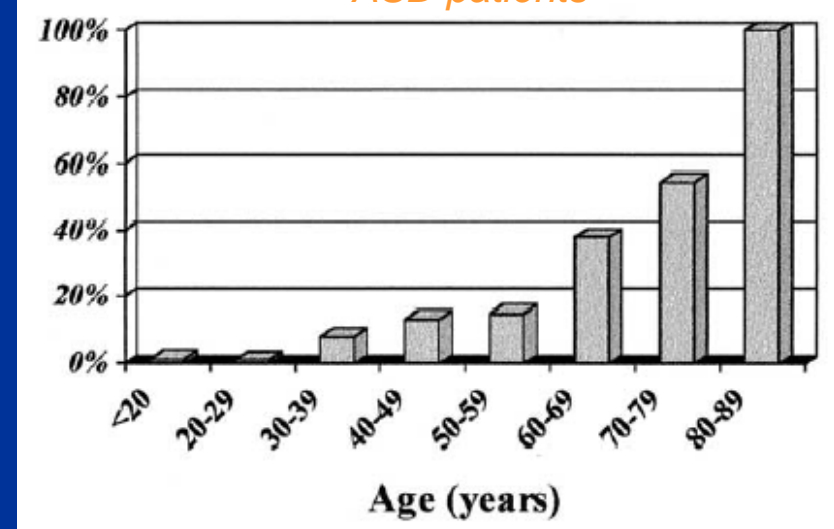
-Prevalence of AF-

General population



(JAMA. 2001;285:2370-2375)

ASD patients



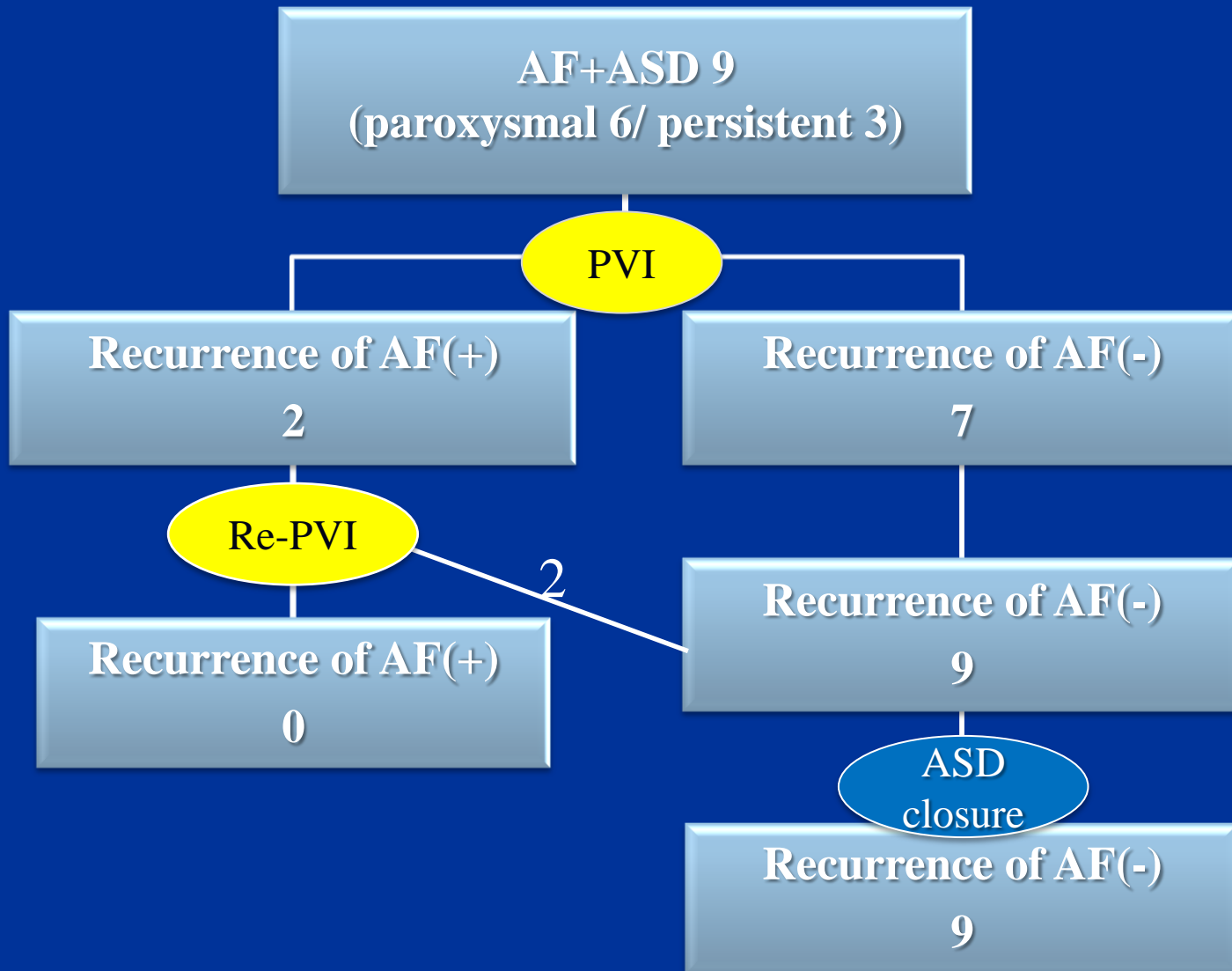
(Am J Cardiol 2002;89:39-43)

結果

患者背景(全患者)

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Pulmonary hypertension	8 (55%)
LA dimension (mm)	41±6
Prior RFCA	16 (55%)

Results



(mean follow-up duration 16.0 ± 4.5 months)

Patient Characteristics

	Patients (n=9)
Age (yrs)	51.1±15.9 (25-74)
Female (n)	3 (33.3%)
Paroxysmal / Persistent (n)	6 / 3
NYHA class I / II / III	6 / 2 / 1
LA dimension (mm)	39.8±6.8 (27-48)
Qp/Qs	2.3±0.5 (1.7-2.9)
ASD diameter (mm)	18.1±3.2 (12-22)
Device size (mm)	21.9±3.6 (16-26)

ESC guidelines for the management of ASD

Indications	Class ^a	Level ^b
Patients with significant shunt (signs of RV volume overload) and PVR <5 WU should undergo ASD closure regardless of symptoms	I	B ²⁶
Device closure is the method of choice for secundum ASD closure when applicable	I	C
All ASDs regardless of size in patients with suspicion of paradoxical embolism (exclusion of other causes) should be considered for intervention	IIa	C
Patients with PVR ≥5 WU but <2/3 SVR or PAP <2/3 systemic pressure (baseline or when challenged with vasodilators, preferably nitric oxide, or after targeted PAH therapy) and evidence of net L-R shunt (Qp:Qs >1.5) may be considered for intervention	IIb	C
ASD closure must be avoided in patients with Eisenmenger physiology	III	C

Continuous Epoprostenol Therapy and Septal Defect Closure in a Patient With Severe Pulmonary Hypertension

Aki Hirabayashi,¹ MD, Katsumasa Miyaji,^{1*} MD, and Teiji Akagi,² MD, FSCAI, FACC

	Before epoprostenol therapy	Before ASD occlusion	Soon after ASD occlusion	1 year after ASD occlusion
PAP (mm Hg)	106/32 (58)	82/31 (51)	53/22 (36)	57/23 (39)
PVR (dyne sec)/cm ⁻⁵)	824	471	N/A	256
Qp/Qs (L/min/m ²)	3.7/2.4	6.8/3.4	N/A	5.5/5.3
Qp/Qs	1.5	2.0	N/A	1.0

PAP, pulmonary artery pressure; PVR, pulmonary vascular resistance; Qp, pulmonary blood flow; Qs, systemic blood flow; N/A, not available.

