

Meet the Experts

(Challenging Issues in Aortic Valve Surgery)
Esfand 96, March 2017

Moderator: Alireza A. Ghavidel MD

- **Panelists:**

- Dr. Jahangiri (London)
- Dr. Lotfi (Aachen)
- Dr. Mandegar (Tehran)
- Dr. Parvizi (Tabriz)



First case

Presentation

- A 78 Yr. Non smoker, hypertensive Gentleman
- Weight 58 kg, BSA 1.6
- Recent Syncope
- FCI
- Physical exam: None

PMH

- CABG 5 graft 14 years ago
- Inf. MI 2 years ago
- Coronary angiography
Occluded PDA & D
patent other grafts

Patient Evaluation

- TTE/TEE

- LVEF 45-50%
- Mild RV dysfunction
- BAV, type I
- Sever calcified AS, Mod AI
- Mild MR
- TVPG 68 mmHg
- TVMG 53 mmHg
- Aortic annulus 19 mm
- Valsalva sinus 27
- STJ 26

Normal lab data



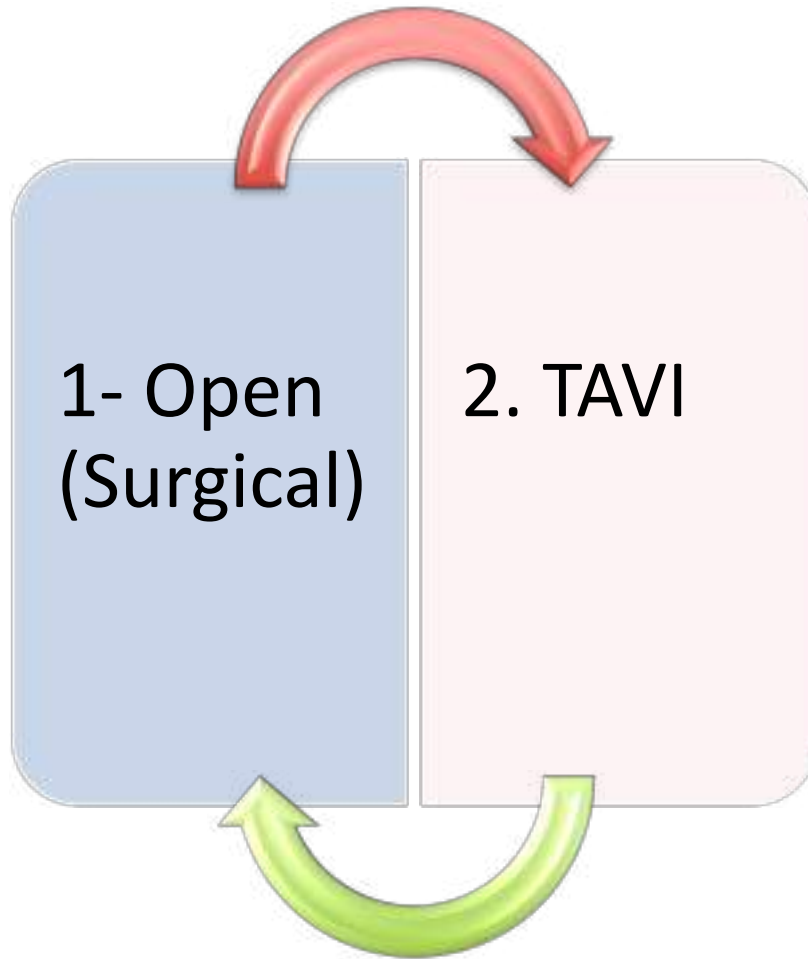


AS pitfall & Key points

Further Evaluations?



**OPEN VS
ENDOVASCULAR APPROACH**





Standard vs Modern valves



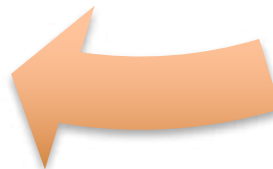
4. Rapid deployment valve (Intuity)



1. Stented bioprosthesis (Bovine-Pericardial)



2. Stentless tissue valve (Solo)



3. Sutureless valve (Perceval)





KEY POINTS FOR RE-DO SURGERY



How to deal with Root size?



1- Mechanical Valve



2- Stented tissue valve without root enlargement



3- Stented tissue valve with root enlargement



4- Stentless valve



5- Perceval



6-Intuity

Second case

Presentation

- A 27 year old gentleman
- BW: 65 BSA: 1.71
- Fever & DOE FC II-III
- Physical Exam No other finding

PMH

- VSD closure 7 yr old
- PPM (Epicardial) 1 month later
- PPM (Endocardial) 17 yrs
- AVR (25 St. Jude) 21yrs

Pace maker lead endocarditis

6 months ago

TTE/TEE

- 11 mm vegetation on ICD lead
- LVEF 20%
- Normal functioning PV
- Blood culture staph +

Conservative management

- 6 week A.B
- Lead extraction rejected by EP man
- Surgery refused by patient
- Discharge with
good status
No veg.
negative culture

Patient Evaluation

- Blood Culture
staph aureous
- CXR Cardiomegaly
- WBC 12000 (PMN:79%)
- Cr 1.3

- TTE/TEE
- Sever PVL (Dehiscence)
- Root & AMIVF abscess
- Mod FMR
- LVEF 15-20%
- LVEDD 71 mm
- Mod-Sever TR
- Mild RV dysfunction
- PAP 33 mmHg



**What is the best treatment
Strategy?**

(Medical or surgical)
Further evaluation ?



1.Surgery

2.Medical
management

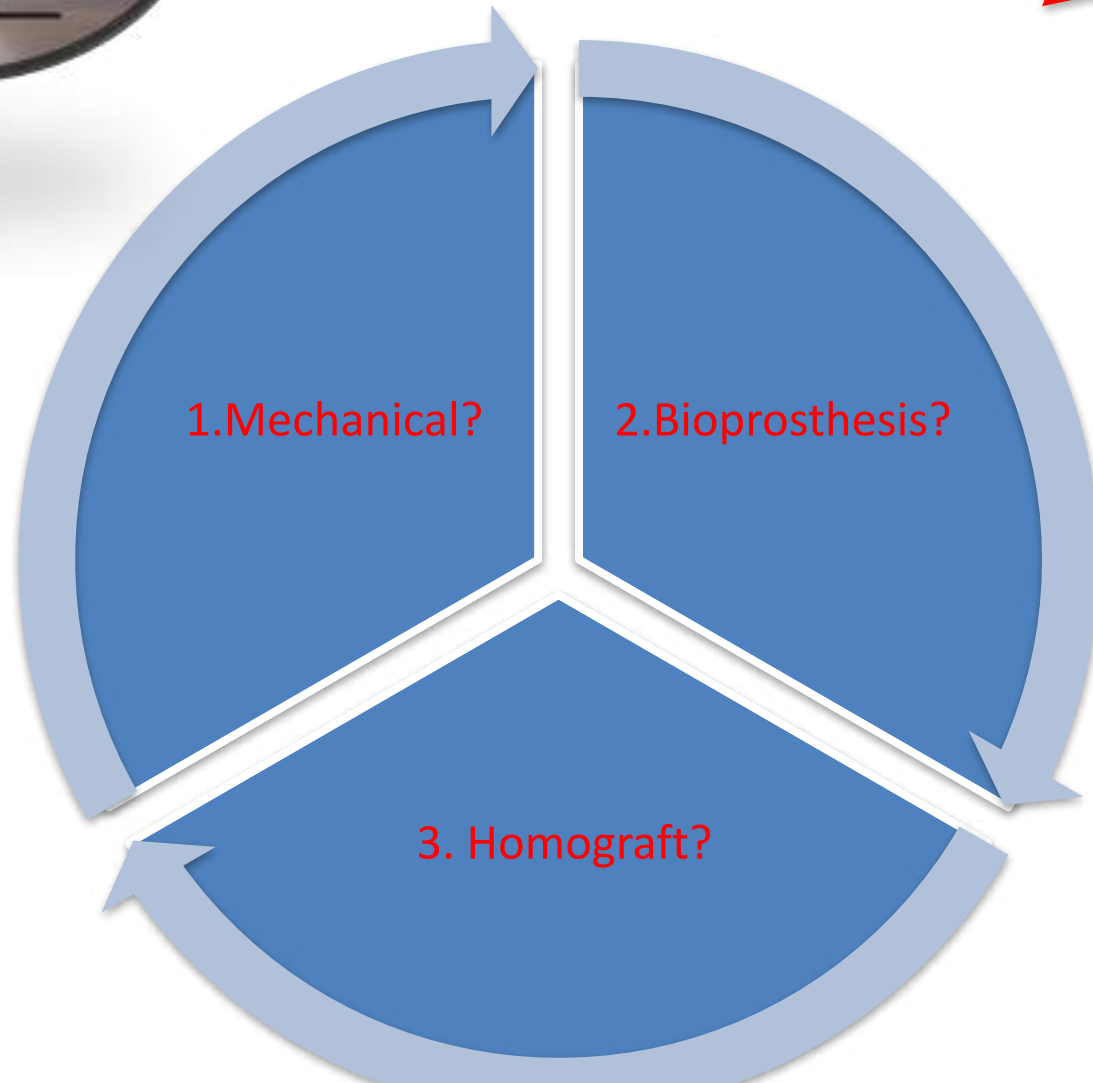


Valve choice?

**MECHANICAL, BIOPROSTHESIS,
HOMOGRAFT?**



Voting
5



1. Mechanical?

2. Bioprosthesis?

3. Homograft?



What should I do for Mitral valve?





Is there Indication for ECMO or
even Heart transplant?



- - **How can I manage the root abscess?**



1. Debridement & simple closure

2. Root replacement with homograft

3. Root replacement with composite graft

4. Root reconstruction with pericardial patch



Voting result

First Case

- Q 1: open(Surgical vs TAVI)
- Q2:
 1. Stented bioprosthesis (Bovine-Pericardial)
 2. Stentless tissue valve (Solo)
 3. Sutureless valve (Perceval)
 4. Rapid deployment valve(Intuity)
- Q3:
 - 1- Mechanical Valve
 - 2- Stented tissue valve without root enlargement
 - 3- Stented tissue valve with root enlargement
 - 4- Stentless valve
 - 5- Perceval
 - 6-Intuity

Second case

- Q1: Surgery or medical management?

1. Surgery

2. Medical

- Q2: 1. Mechanical?

2. Bioprosthesis?

3. Homograft?

Q3: 1. MVR

2. MV repair (Ring annuloplasty

3. MVr (edge-to-edge repair)

4. None

Q4: How can I manage the root abscess?

1. Debridement & simple closure

2. Root replacement with homograft

3. Root replacement with composite graft

4. Root reconstruction with pericardial patch



How did you find this session?

1- Interesting and Scientific
(evidence based)

2- Interesting and Scientific (expert
opinion)

3- Scientific but no Interesting

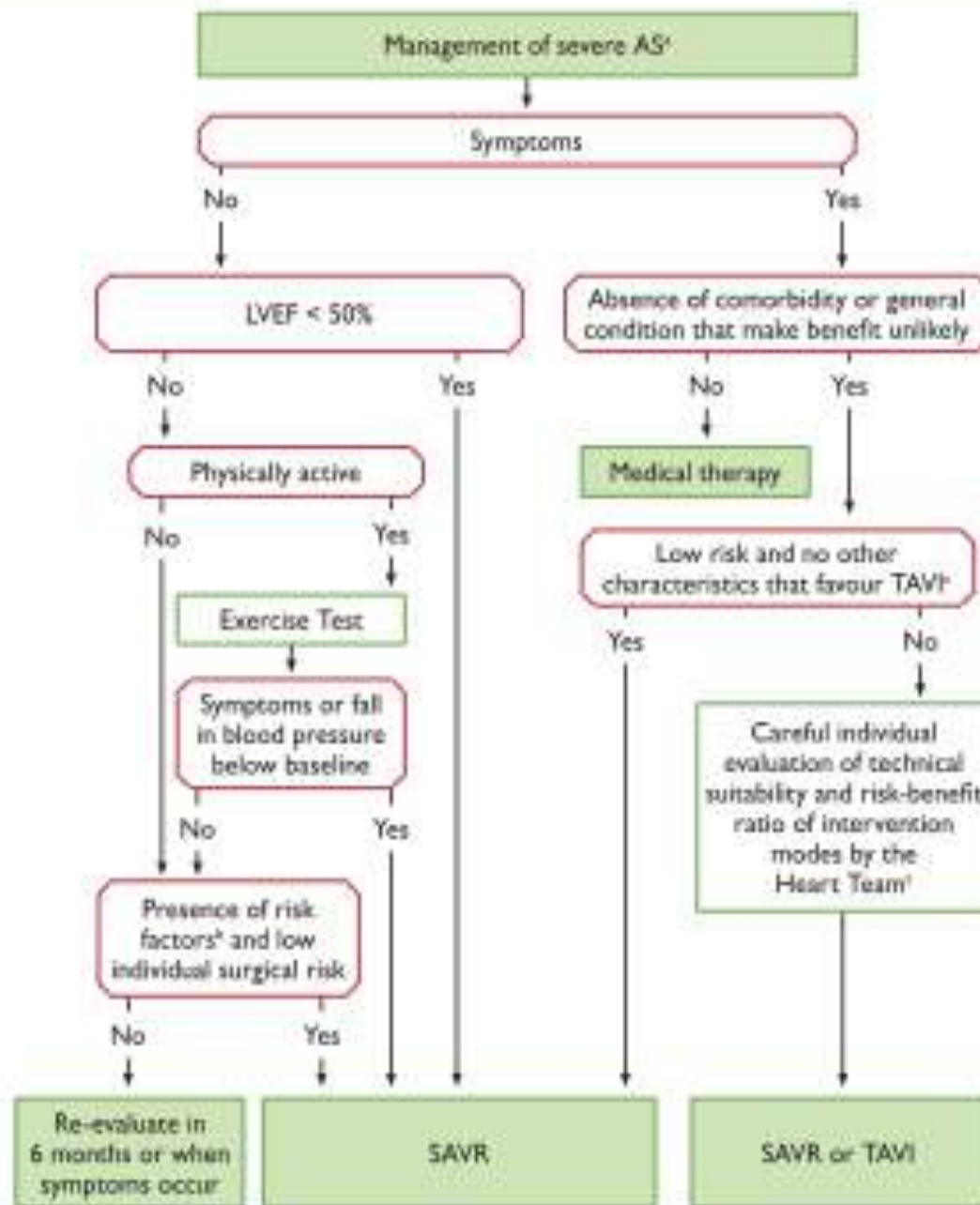
4- Boring and not useful

Voting result

- 1- Interesting and Scientific (evidence based)
- 2- Interesting and Scientific (expert opinion)
- 3- Scientific but no Interesting
- 4- Boring and not useful

Thank You!

The image features the words "Thank You!" in a bold, white, 3D sans-serif font. The text is centered and surrounded by a dense, scattered cloud of small, multi-colored confetti pieces in shades of red, blue, yellow, and green. The entire scene is set against a plain white background, creating a bright and celebratory visual.



Indications for intervention in aortic stenosis and recommendations for the choice of intervention mode

A) Symptomatic aortic stenosis	Class ^a	Level ^b
Intervention is indicated in symptomatic patients with severe, high-gradient aortic stenosis (mean gradient ≥ 40 mmHg or peak velocity ≥ 4.0 m/s). ⁹¹⁻⁹³	I	B
Intervention is indicated in symptomatic patients with severe low-flow, low-gradient (<40 mmHg) aortic stenosis with reduced ejection fraction and evidence of flow (contractile) reserve excluding pseudosevere aortic stenosis.	I	C
Intervention should be considered in symptomatic patients with low-flow, low-gradient (<40 mmHg) aortic stenosis with normal ejection fraction after careful confirmation of severe aortic stenosis ^c (see Figure 2 and Table 6).	IIa	C
Intervention should be considered in symptomatic patients with low-flow, low-gradient aortic stenosis and reduced ejection fraction without flow (contractile) reserve, particularly when CT calcium scoring confirms severe aortic stenosis.	IIa	C
Intervention should not be performed in patients with severe comorbidities when the intervention is unlikely to improve quality of life or survival.	III	C

B) Choice of intervention in symptomatic aortic stenosis

Aortic valve interventions should only be performed in centres with both departments of cardiology and cardiac surgery on site and with structured collaboration between the two, including a Heart Team (heart valve centres).

I

C

The choice for intervention must be based on careful individual evaluation of technical suitability and weighing of risks and benefits of each modality (aspects to be considered are listed in Table 7). In addition, the local expertise and outcomes data for the given intervention must be taken into account.

I

C

SAVR is recommended in patients at low surgical risk (STS or EuroSCORE II < 4% or logistic EuroSCORE I < 10%^d and no other risk factors not included in these scores, such as frailty, porcelain aorta, sequelae of chest radiation).⁹³

I

B

TAVI is recommended in patients who are not suitable for SAVR as assessed by the Heart Team.^{91,94}

I

B

In patients who are at increased surgical risk (STS or EuroSCORE II \geq 4% or logistic EuroSCORE I \geq 10%^d or other risk factors not included in these scores such as frailty, porcelain aorta, sequelae of chest radiation), the decision between SAVR and TAVI should be made by the Heart Team according to the individual patient characteristics (see Table 7), with TAVI being favoured in elderly patients suitable for transfemoral access.^{91,94-102}

I

B

Balloon aortic valvotomy may be considered as a bridge to SAVR or TAVI in haemodynamically unstable patients or in patients with symptomatic severe aortic stenosis who require urgent major non-cardiac surgery.

IIb

C

Balloon aortic valvotomy may be considered as a diagnostic means in patients with severe aortic stenosis or other potential causes for symptoms (i.e. lung disease) and in patients with severe myocardial dysfunction, pre-renal insufficiency or other organ dysfunction that may be reversible with balloon aortic valvotomy when performed in centres that can escalate to TAVI.

IIb

C

C) Asymptomatic patients with severe aortic stenosis (refers only to patients eligible for surgical valve replacement)		
SAVR is indicated in asymptomatic patients with severe aortic stenosis and systolic LV dysfunction (LVEF <50%) not due to another cause.	I	C
SAVR is indicated in asymptomatic patients with severe aortic stenosis and an abnormal exercise test showing symptoms on exercise clearly related to aortic stenosis.	I	C
SAVR should be considered in asymptomatic patients with severe aortic stenosis and an abnormal exercise test showing a decrease in blood pressure below baseline.	IIa	C
SAVR should be considered in asymptomatic patients with normal ejection fraction and none of the above-mentioned exercise test abnormalities if the surgical risk is low and one of the following findings is present: <ul style="list-style-type: none"> ● Very severe aortic stenosis defined by a $V_{max} >5.5$ m/s ● Severe valve calcification and a rate of V_{max} progression ≥ 0.3 m/s/year ● Markedly elevated BNP levels (>threefold age- and sex-corrected normal range) confirmed by repeated measurements without other explanations ● Severe pulmonary hypertension (systolic pulmonary artery pressure at rest >60 mmHg confirmed by invasive measurement) without other explanation. 	IIa	C

Table 7 Aspects to be considered by the Heart Team for the decision between SAVR and TAVI in patients at increased surgical risk (see Table of Recommendations in section 5.2.)

	Favours TAVI	Favours SAVR
Clinical characteristics		
STS/EuroSCORE II <4% (logistic EuroSCORE I <10%) ^a		+
STS/EuroSCORE II ≥4% (logistic EuroSCORE I ≥10%) ^a	+	
Presence of severe comorbidity (not adequately reflected by scores)	+	
Age <75 years		+
Age ≥75 years	+	
Previous cardiac surgery	+	
Frailty ^b	+	
Restricted mobility and conditions that may affect the rehabilitation process after the procedure	+	
Suspicion of endocarditis		+

Anatomical and technical aspects		
Favourable access for transfemoral TAVI	+	
Unfavourable access (any) for TAVI		+
Sequelae of chest radiation	+	
Porcelain aorta	+	
Presence of intact coronary bypass grafts at risk when sternotomy is performed	+	
Expected patient–prosthesis mismatch	+	
Severe chest deformation or scoliosis	+	
Short distance between coronary ostia and aortic valve annulus		+
Size of aortic valve annulus out of range for TAVI		+
Aortic root morphology unfavourable for TAVI		+
Valve morphology (bicuspid, degree of calcification, calcification pattern) unfavourable for TAVI		+
Presence of thrombi in aorta or LV		+

Cardiac conditions in addition to aortic stenosis that require consideration for concomitant intervention		
Severe CAD requiring revascularization by CABG		+
Severe primary mitral valve disease, which could be treated surgically		+
Severe tricuspid valve disease		+
Aneurysm of the ascending aorta		+
Septal hypertrophy requiring myectomy		+

