Complex Aortic Root Cavity

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Personal History

- 22 year old, male patient
- Driver
- Single
- No special habits of medical importance.

- S/P aortic valve replacement in September 2014 on top of symptomatic bicuspid aortic valve stenosis
- One month later the patient started to complain of fever reaching 38 °C, rigors, vomiting , diarrhea with dyspnea on minimal exertion
- He was diagnosed to have early prosthetic aortic valve endocarditis (aortic root abscess- dehiscence of aortic prosthesis- severe paravlvular leakage)
- Blood culture→Pseudomonas

- Patient underwent a redo aortic valve replacement and plication of the abscess cavity in November 2014
- Patient received Imipinem-cilastin and Ciprofloxacin for 6 weeks postoperative with improvement
- Postoperative TEE should residual cavity
- No evidence of relapsing infection

January 2016:

- No history suggestive of relapsing infection.
- No history of dyspnea, PNDS, orthopnea, LL edema , chest pain and palpitations.

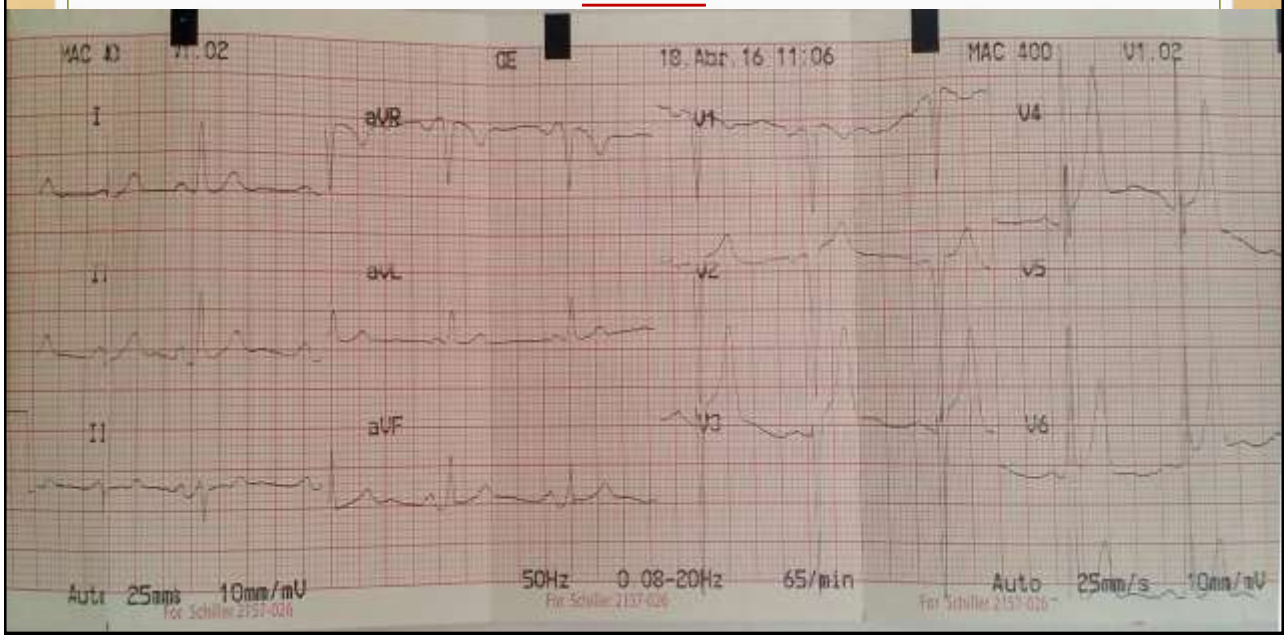
General examination

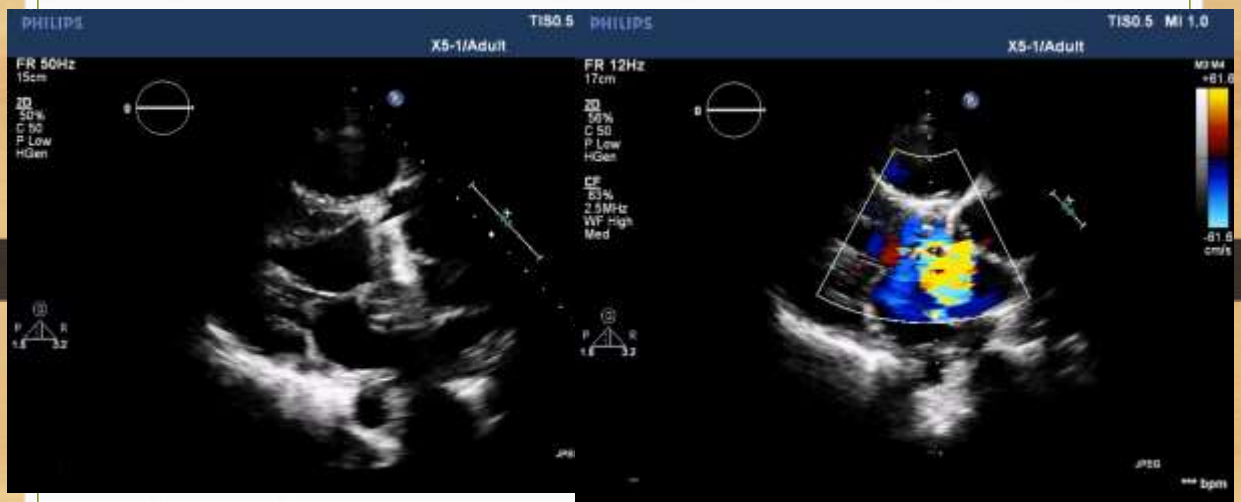
- Blood pressure: 120/80 in both arms. Standing and Supine.
- Pulse: 82/min ,regular, equal on both sides, of average volume, with no special character.
- BMI : 22
- Normal JVP and waveform
- Chest-Abdominal- Extremities examination: free

Precordial examination

- Median strenotomy scar healed by primary intention
- Apex is seen and felt in the left 6th intercostal space out side the MCL with systolic expansion with no thrill.
- Normal S1- metallic click of S2
- No additional sounds
- Base: Ejection systolic murmur grade III/VI- Early diastolic soft murmur

ECG

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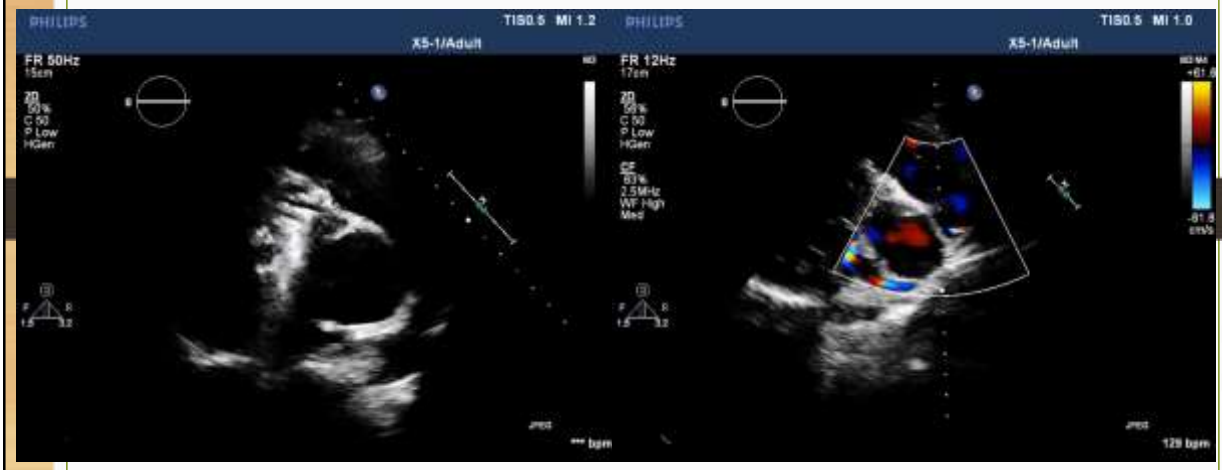
X5-1/Adult
FR 50Hz
15cm
PHILIPS
TIS0.5 MI 1.0
X5-1/Adult
FR 12Hz
17cm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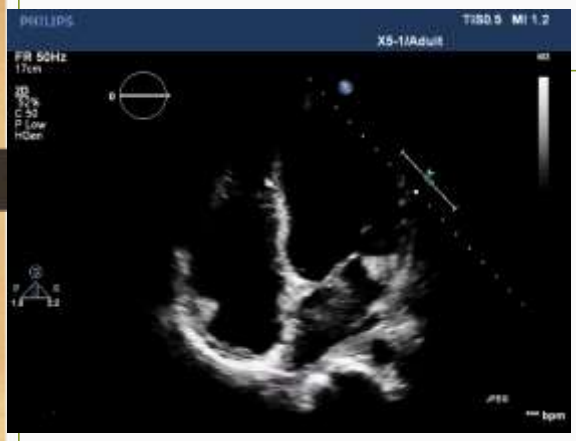
129 bpm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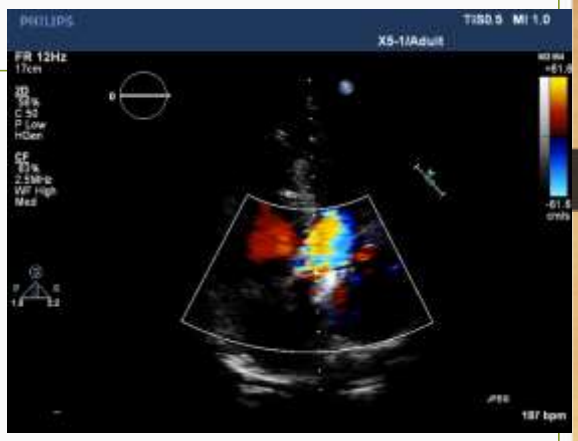
FR 50Hz
17cm
bpm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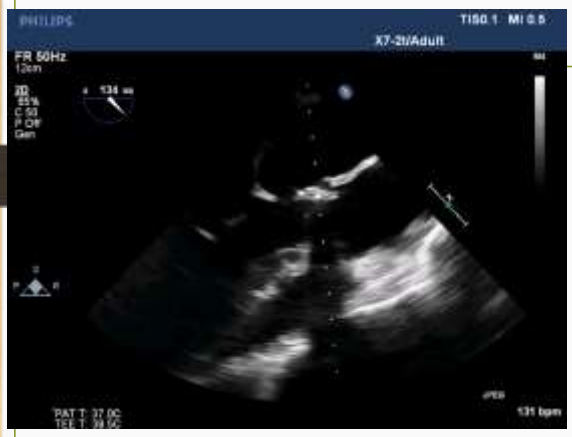
17cm
187 bpm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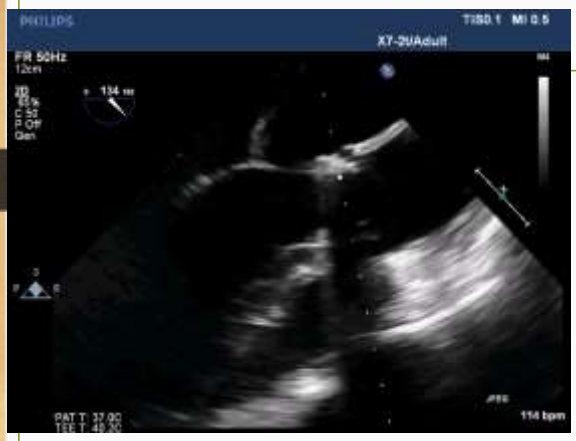
12cm
131 bpm


PHILIPS
TIS0.7 MI 0.4
X7-2t/Adult
FR 13Hz
12cm
116 bpm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12cm
134 mm
PAT T: 37.0C
TEE T: 40.5C
114 bpm


PHILIPS
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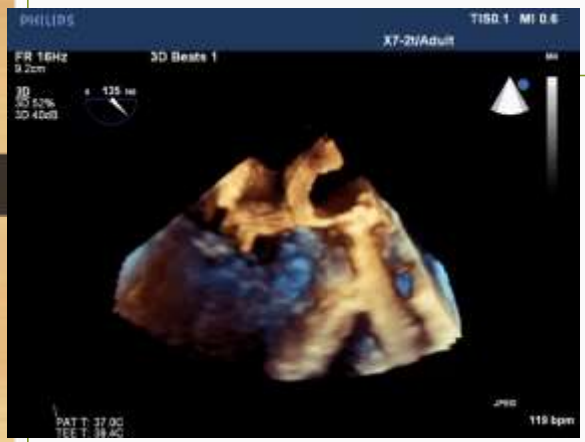
12cm
134 mm
PAT T: 37.0C
TEE T: 40.1C
110 bpm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FR 16Hz
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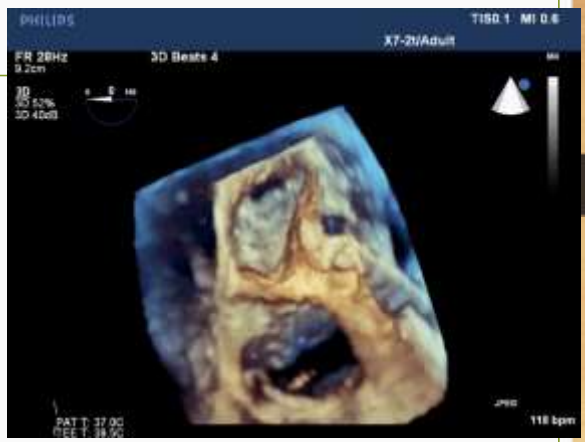
3D Beats 1
135 mm
PAT T: 37.0C
TEE T: 39.4C
119 bpm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X7-2t/Adult
FR 28Hz
9.2cm
3D Beats 4
PAT T: 37.0C
TEE T: 39.5C
118 bpm

Is it new infection?

Laboratory

Hemoglobin	**14.4 g/dl**	**Serum creatinine**	**0.72 mg/dl**
TLC	10	Blood urea	30.0 mg/dL
Platelets	430 10^3/Cmm	Serum LDH	364 U/L
CRP	10	Albumin	3.1 g/dL
PC	52%	Serum sodium	137 mmol/L
INR	2.3	Serum Potassium	4.1 mmol/L
ALT	60 U/L	Serum Magnesium	1.9 mg/ dL
AST	23 U/L	Serum calcium	8.7 mg/dL

Blood culture

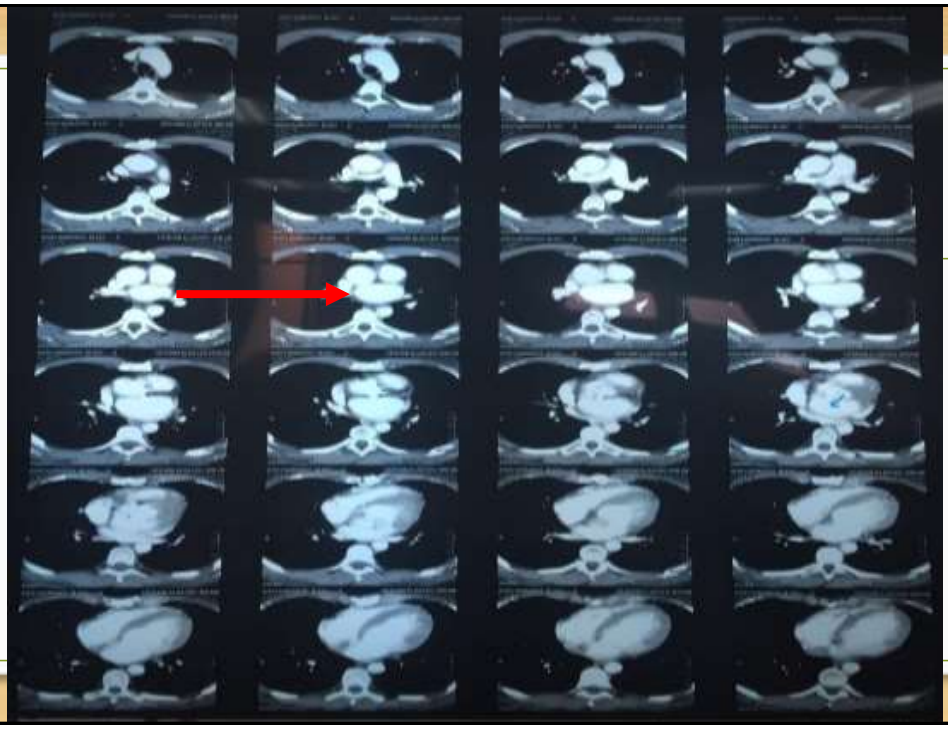
- Negative

Serology

- Negative

CT Aortography

- The posterior wall of LVOT shows a large defect (about 2 cm in diameter) leading to a large contrast-filled cavity, posterior to the aortic root, measuring 6.5 x 4.3 x 6 cm. It compresses the antro-superior aspect of the left atrium.
- The ascending aorta is mildly dilated measuring about 3.5 cm in maximum diameter.
- No thoracic aortic aneurysm or dissection

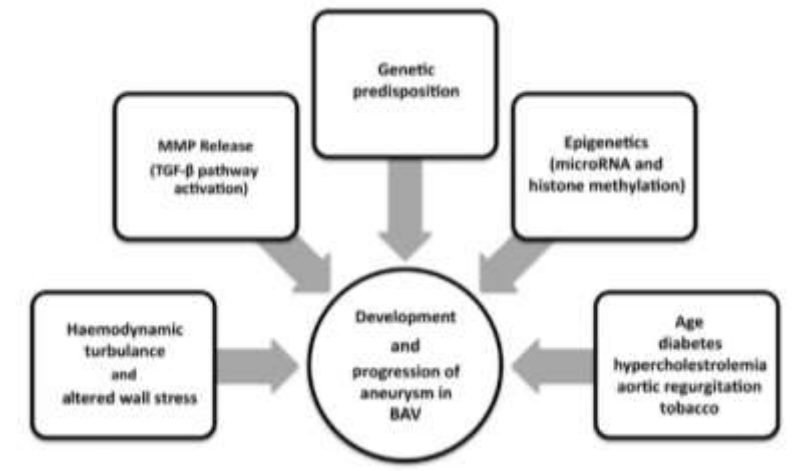


Plan of management

The patient was sent to surgery

Repair of ascending thoracic aorta (excision of the cavity and replacement of ascending aorta)

Aortopathy in BAV



Interactive CardioVascular and Thoracic Surgery, 17 (2013) 554

Table 2. Indications for Elective Surgical Repair of Dilated Ascending Aorta Associated With BAV

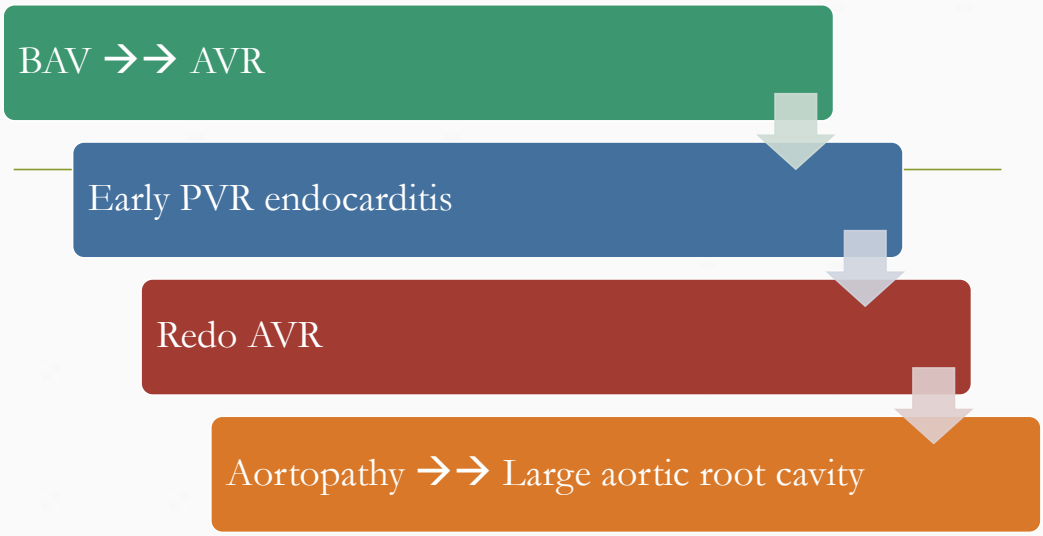
Aortic diameter >5.0 cm
Aortic diameter >4.5 cm associated with any of the following:
Expansion rate >0.5 cm/y in an adult
Aortic coarctation, corrected or uncorrected
First-degree relative with ascending aortic dissection or rupture
Long smoking history, especially with chronic obstructive pulmonary disease
Small adult body size, indicated by either of the following:
Ratio of aortic area to body height >10 cm^2/m
Ratio of aortic diameter to body surface area >4.25 cm/m^2
Aortic diameter >4.0 cm with concomitant indication for elective aortic valve replacement

Circulation. 2009;119:880-890

Infective endocarditis in BAV

- Younger
- Higher rate of periannular complications
- No significant increase in mortality

Heart. 2010 Nov;96(21):1723-9
Tex Heart Inst J. 2009; 36(2): 111–116



Conclusions

- BAV is associated with aortic valve disease and aortopathy
- Infective endocarditis in BAV is associated higher incidence of periannular complications
- In this case, aortic root complications tend to progress even after resolution of infection due to progressing aortopathy

Thank you