

Aortic pathology: an introduction to Greek mythology

Inflammatory disease of the aorta

EUROECHO 2008



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HERACLES

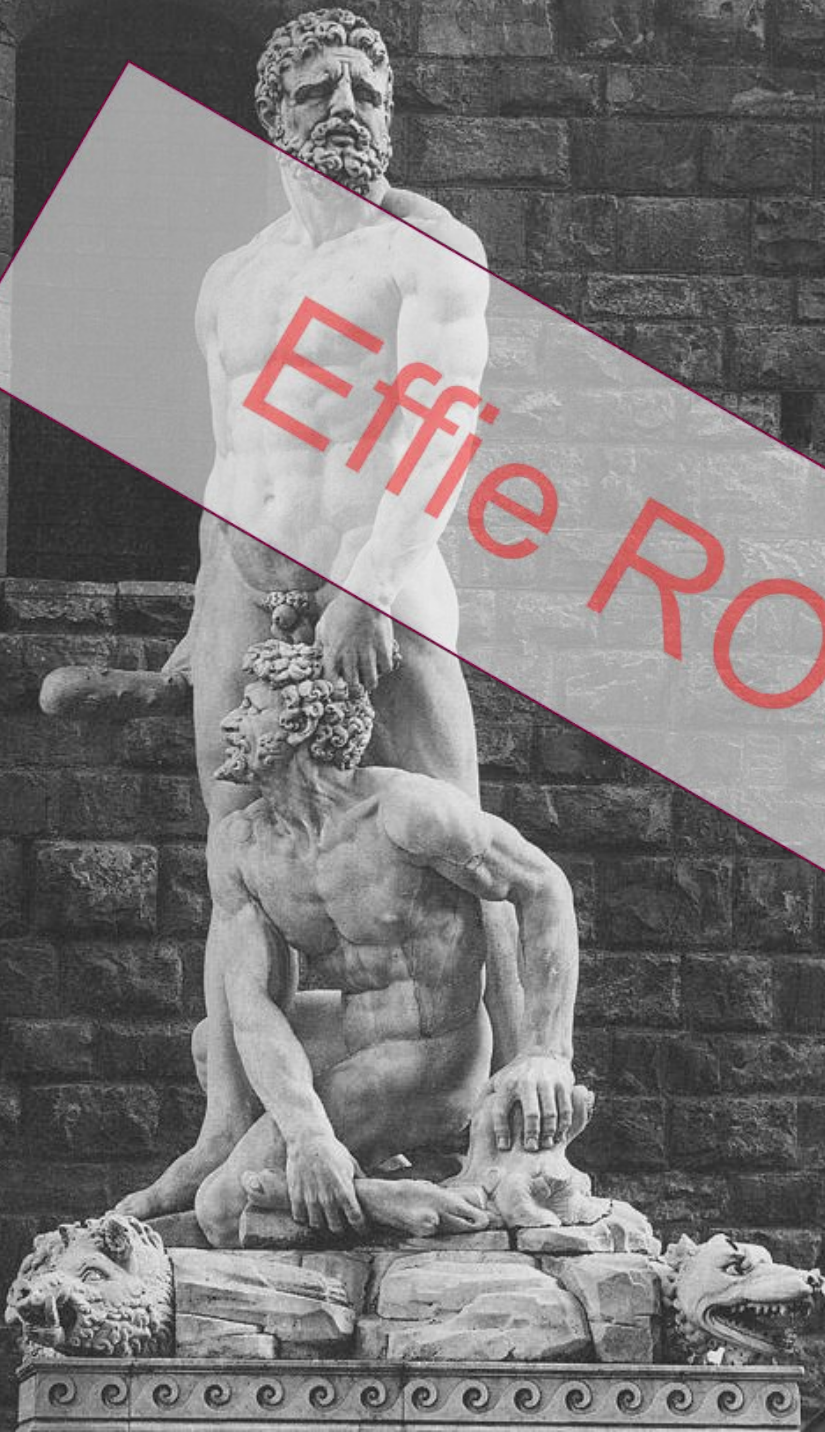
Heracles meaning "glory of Hera" is a divine hero in Greek mythology, son of Zeus and Alcmene.

He is the greatest of the Greek heroes, a paragon of masculinity, creator of the Olympic games.

Many popular stories are told of his life, the most famous being The 12 labors of Heracles.

Temples dedicated to Heracles abounded all along the Mediterranean Sea coastal countries.

The temple of *Heracles Monoikos* (the lone dweller) gave its name to the area's recent name, Monaco.



Case

- Male 59 yrs old referred to our Echo Lab from a district Hospital for AR assessment
- **PCH**: progressive SOB for the last 6 months, brief episodes of chest pain, signs of CHF
- **PMH**: HTN, Hypercholesterolemia, 3vCAD → opcab x 1, PTCA x 2 (2006)

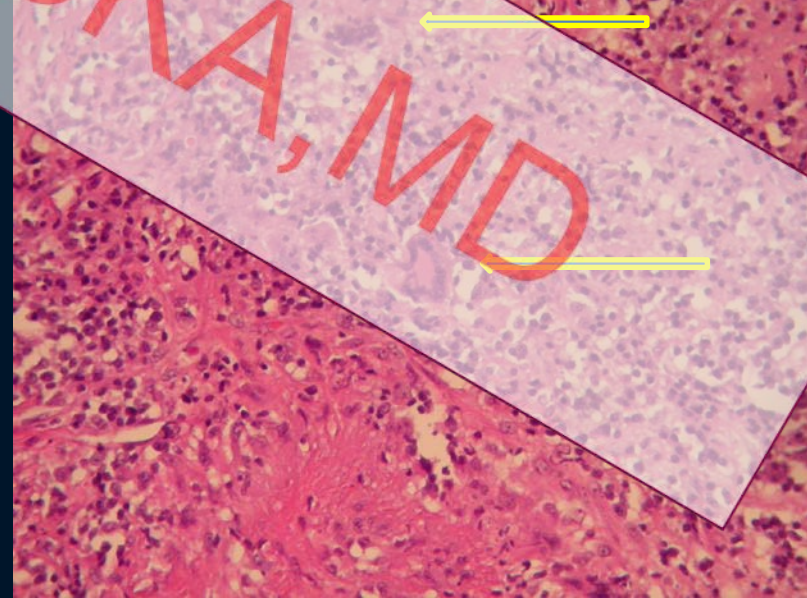
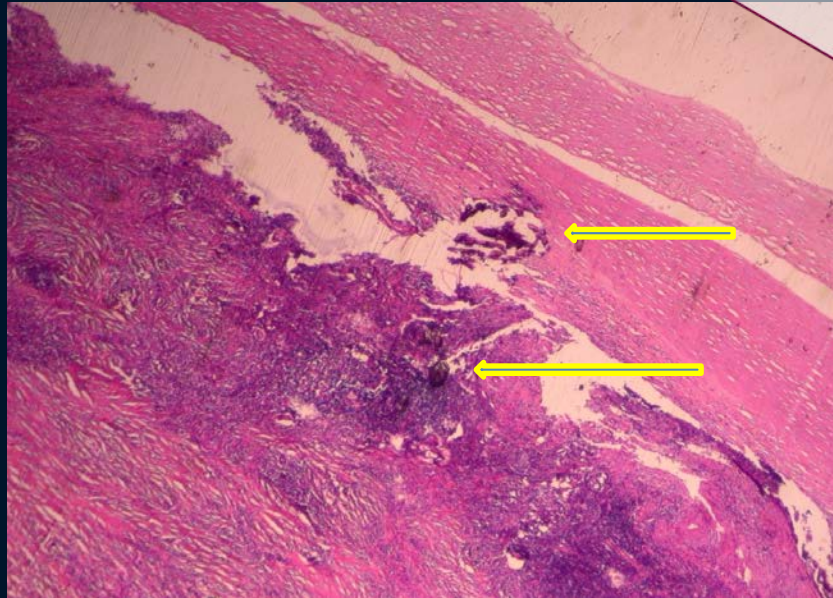
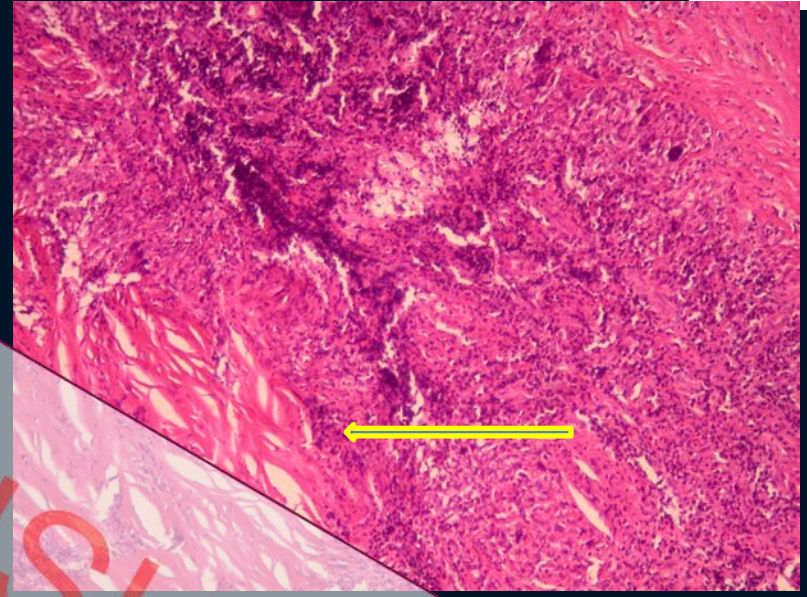
CAD history

- Coronary angiography (2003)
 - 1vCAD (LAD) *Pt refused intervention*
- Coronary angiography (2006)
 - 3vCAD (LAD,OM,RCA) *Pt consented to operation*
- Intervention (2006):
 - Opcab x 1, PTCA x 2
- Operative findings (*IOE not available*)
 - Aortic wall extremely thick
 - Cannulation could not be instituted
 - LIMA to LAD and referred for PCI on OM and RCA
 - **Biopsy of the aortic wall was taken**



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Biopsy of the aorta: *Pathologic findings*



Pathology report



- **Macroscopic findings included** :- 3 biopsy specimens of Ao (0.7-1.8cm)
 - a mediastinum lymphnode of 0.7cm
- **Microscopic findings:**
 - Extensive intimal and adventitial fibrosis of the aortic wall.

Severe transmural infiltration of lymphocytes, plasmocytes and histiocytes and scattered neutrophils were seen. Multinucleated giant cells either of the "foreign body" type or of the "Langhan's" type were identified. Infiltration extends also to the surrounding fibroadipose tissue.

Focal necrosis and other areas with scar tissue (cicatrization) were observed.

 - Lymphonode with non specific reactive lesions
- **Immunohistochemistry:** No evidence for infectious aortitis
- **Conclusion:** Findings consistent with Aortitis

Laboratory examination

- Blood tests for inflammation

- ESR..... elevated
- CRP..... elevated

- Additional serological tests

- ANA , Anti ENA, ANCA, Anticardiolipin *negative*
- Rheumatoid factor *negative*

- Exclusion of syphilitic/bacterial/fungal aortitis

Biopsy of temporal artery

- No lesions of temporal arteritis were found

MRA of aortic arch and thoracic aorta



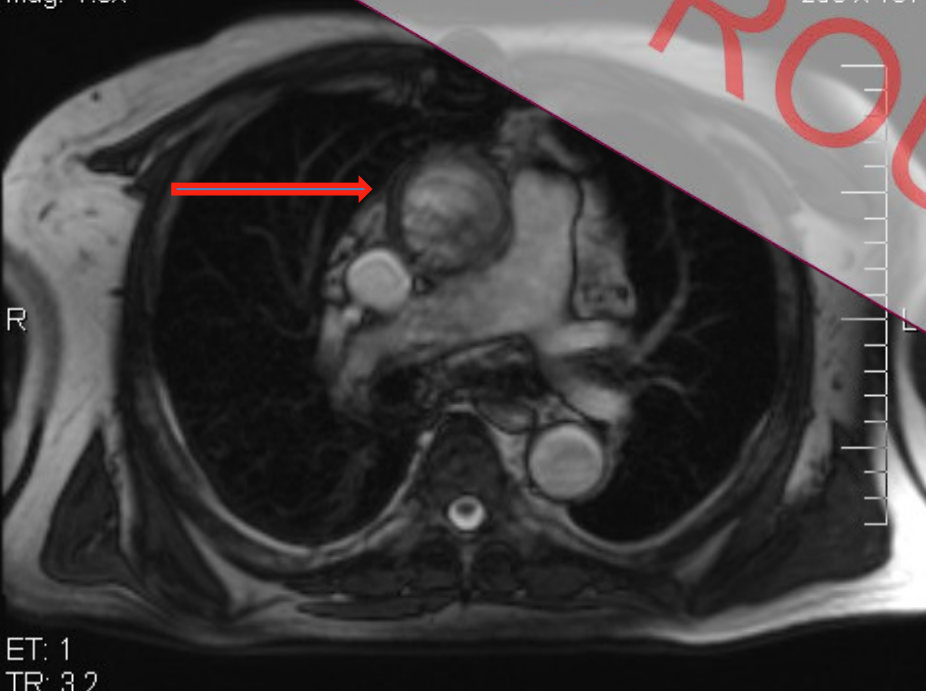
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t2_trufi_tra_bh
Se: 2/14
Im: 15/24
Ax: S15.1

A

EUROMEDICA LARISSA
REMOUNDOS ANTONIOS
1949 Jan 01 M MR 49
Acc:
2007 Nov 08
Acq Tm: 18:19:54.017500

Mag: 1.9x

256 x 167



ET: 1
TR: 3.2
TE: 1.4

8.0thk/1.6sp
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W:858 L:391

DFOV: 38.0 x 30.7cm

1.5T MEDPC
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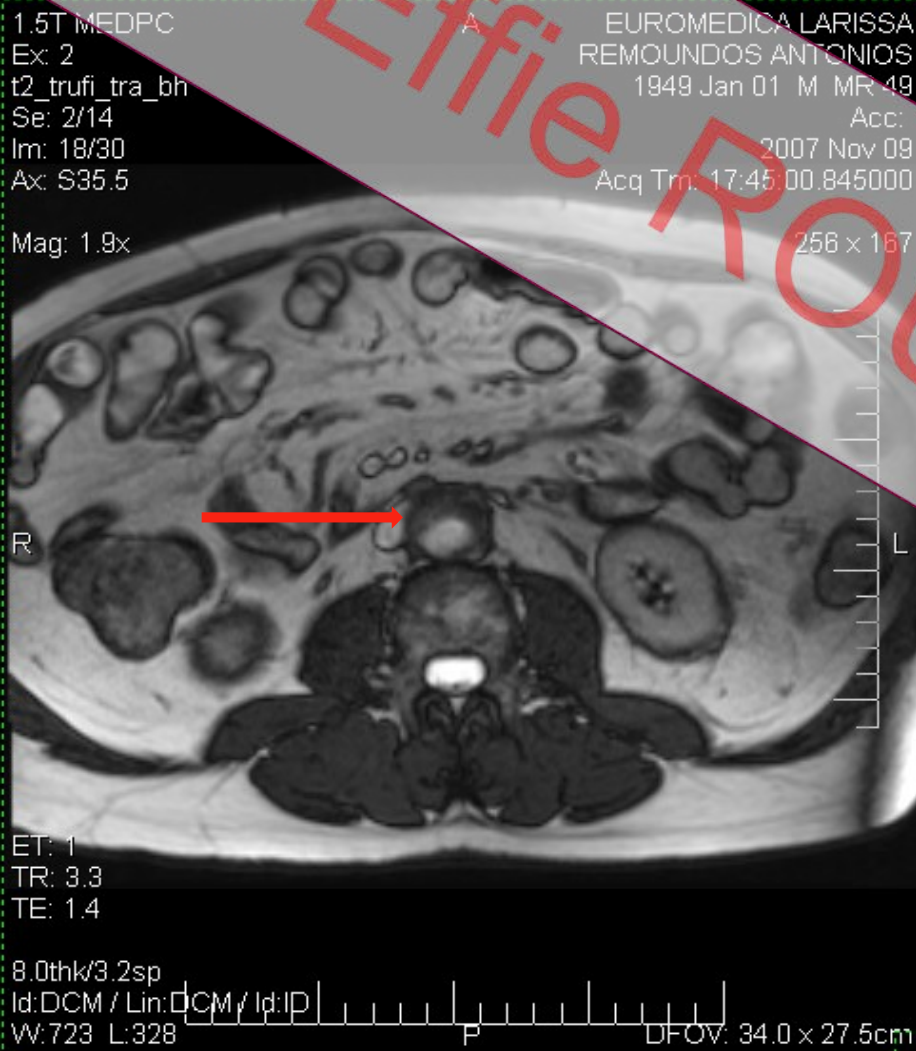
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DFOV: 38.0 x 30.7cm

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MRA of abdominal aorta



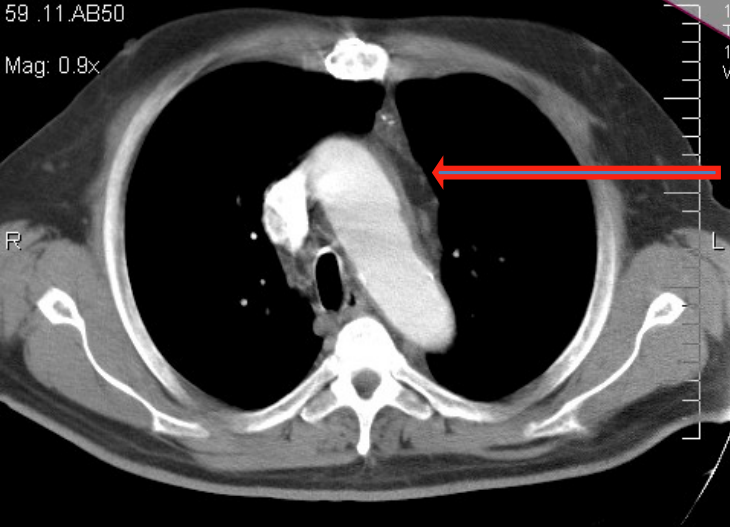
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Spiral CT scan of thoracic aorta

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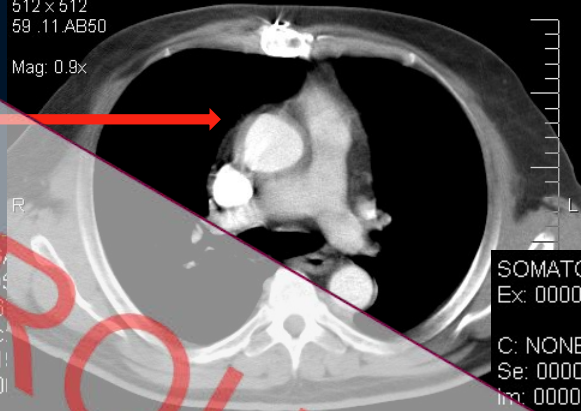
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59.11.AB50

Mag: 0.9x



130.0 kV
63.0 mA
10.0 mm/0.0:1
Tilt: 0.0
1.9 s
W:400 L:40
P
DFOV: 39.0 x 39.0 cm

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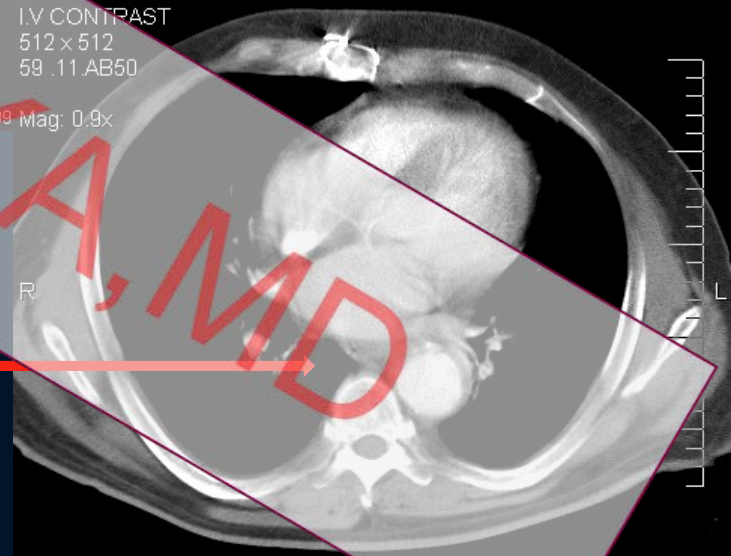


130.0 kV
63.0 mA
10.0 mm/0.0:1
Tilt: 0.0
1.9 s
W:400 L:40
P
DFOV: 39.0 x 39.0 cm

SOMATOM SPIRAL HP
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C: NONE
Se: 000006/3
Im: 000026/22
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I.V. CONTRAST
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59.11.AB50

Mag: 0.9x



130.0 kV
63.0 mA
10.0 mm/0.0:1
Tilt: 0.0
1.9 s
W:400 L:40
P
DFOV: 39.0 x 39.0 cm

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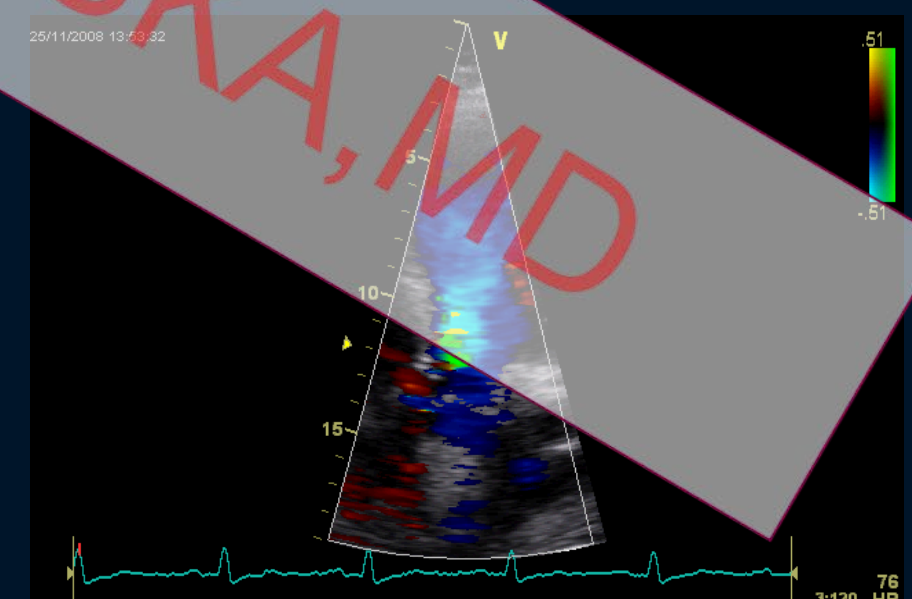
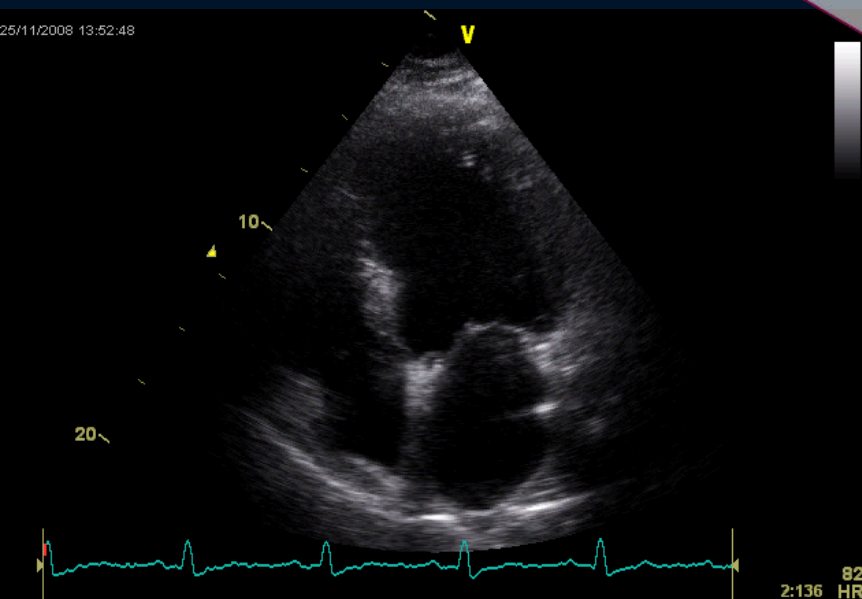
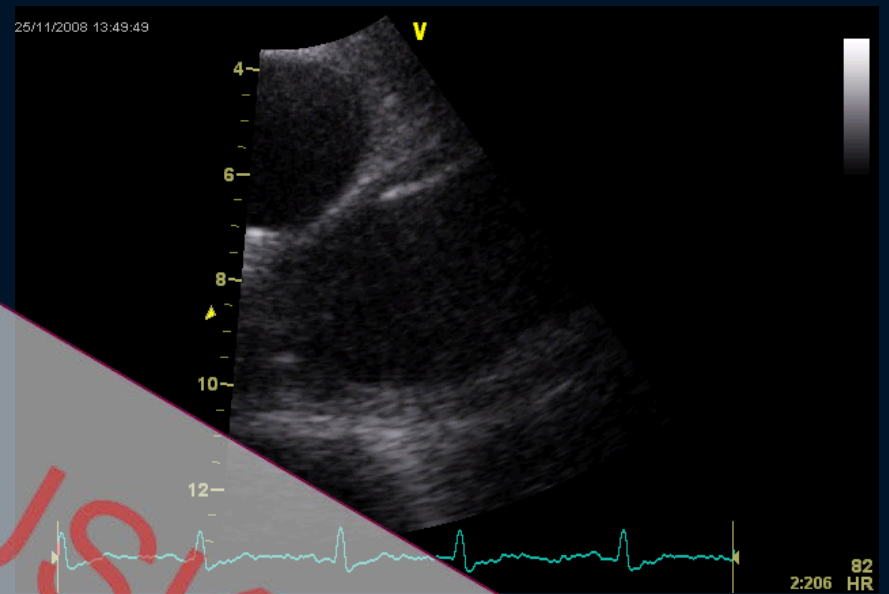
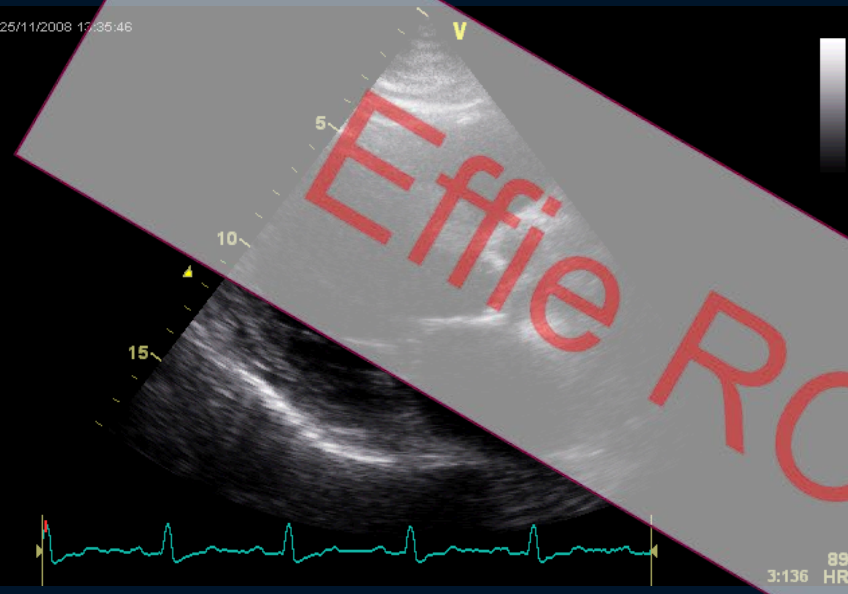
New onset of recurrent angina (2007)

- 6-months post-op patient complained of chest pain
 - Exercise stress test positive
 - Thallium stress test positive
 - Cardiac catheterization
 - LIMA to LAD occluded
 - OM stent patent
 - RCA stent patent
 - Aortography confirmed dilatation of asc Ao
- AR: 3+/4+



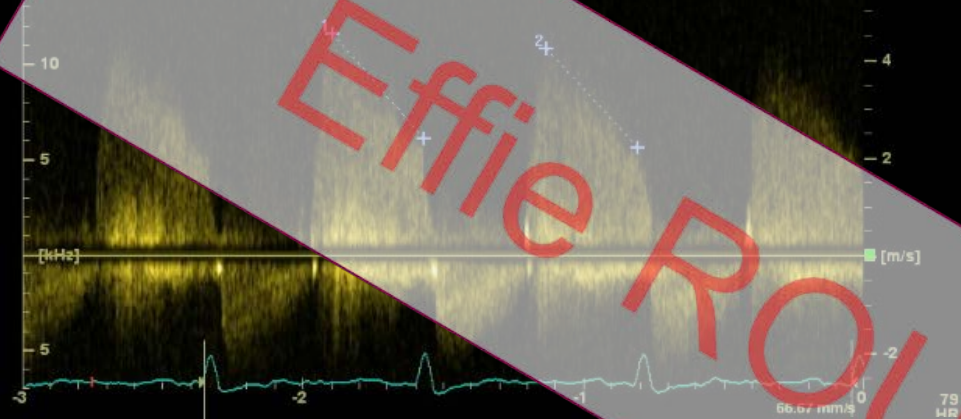
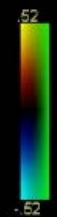
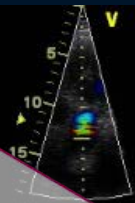
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TTE findings (2008)

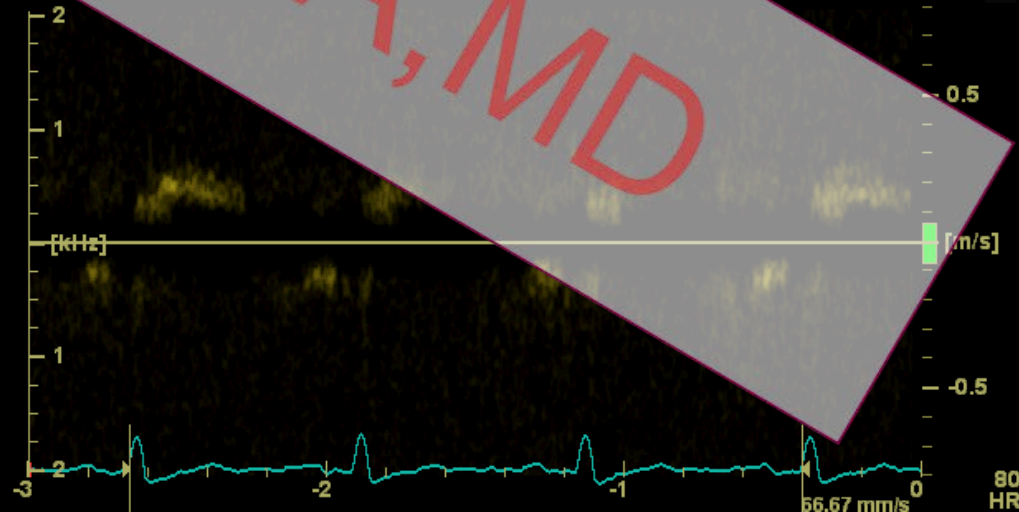
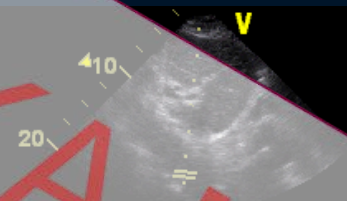


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2	AR Vmax	4.74 m/s
	AR maxPG	72.01 mmHg
	AR PHT	196.78 ms
	AR Dec Time	678.54 ms
	AR Dec Slope	6.25 m/s ²
1	AR Vmax	4.55 m/s
	AR maxPG	82.69 mmHg
	AR PHT	199.41 ms
	AR Dec Time	687.62 ms
	AR Dec Slope	6.61 m/s ²



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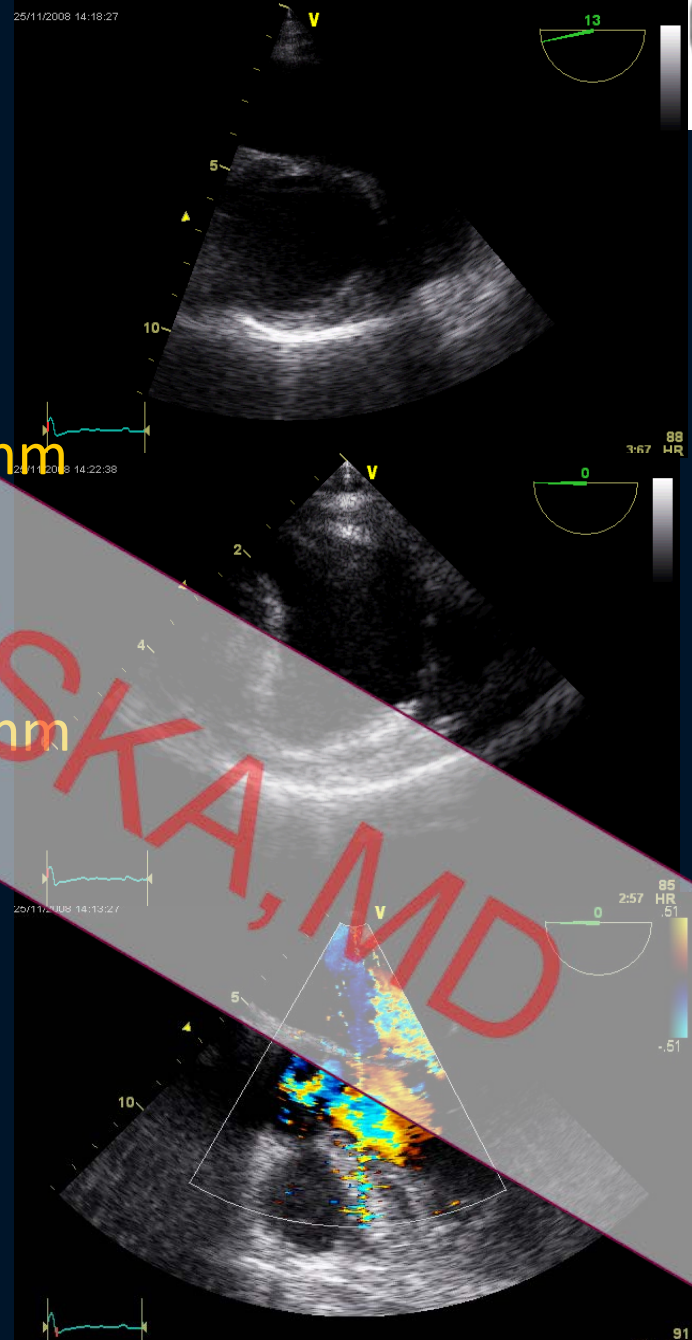


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(2007)

TOE findings

(2008)



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Ao annulus: 25mm
SOV: 35mm
STJ: 33mm
Mid.Asc Ao: 46mm
Desc. Ao: 40mm

Taking into consideration
all the above data



what type of Aortitis would you suspect?

- A. Takayasu Aortitis
- B. Giant Cell Aortitis
- C. Chronic Periaortitis
- D. Non Specific Aortitis

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Combining all the above what would suggest to the patient?

- A. Oral glucocorticoid therapy – Forget intervention
- B. Transapical AV implantation + redo-OPCAB
- C. Percutaneous AV implantation + PCI
- D. Ao Root Replacement + redo-CABG