ACUTE AORTIC SYNDROME:

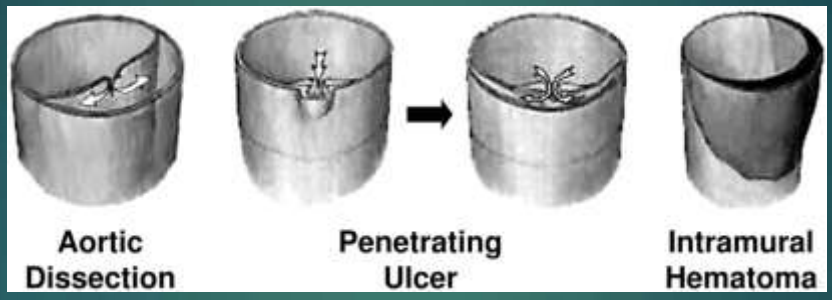
when it is missed

DR. ABD ALLAH ELASRY
MD CARDIOVASCULAR MEDICINE
CAIRO UNIVERSITY

AAS

- in 1760, Dr Nicholls first described on necropsy
- AAS includes aortic dissection,(IMH), and symptomatic aortic ulcer.
- Both acquired and genetic.
- All mechanisms that weaken the media layers of the aorta will eventually lead to higher wall stress, which can induce aortic dilatation and aneurysm formation, eventually resulting in intramural hemorrhage, aortic dissection, or rupture.

Figure 2. Schematic of aortic dissection (left), penetrating ulcer (middle), and IMH (right).



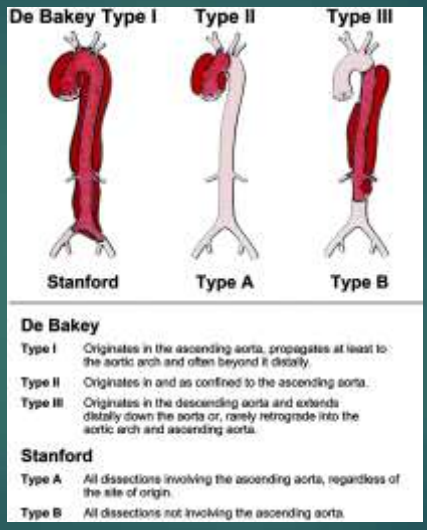
Thomas T. Tsai et al. Circulation. 2005;112:3802-3813

Etiology and pathophysilogy:

- HTN (most common)
- Extracellular matrix accelerated degradation, apoptosis, and elastolysis, intimal disruption
- Marfan's syndrome, vascular Ehlers-Danlos syndrome, annuloaortic ectasia, bicuspid aortic valve, and familial aortic dissection

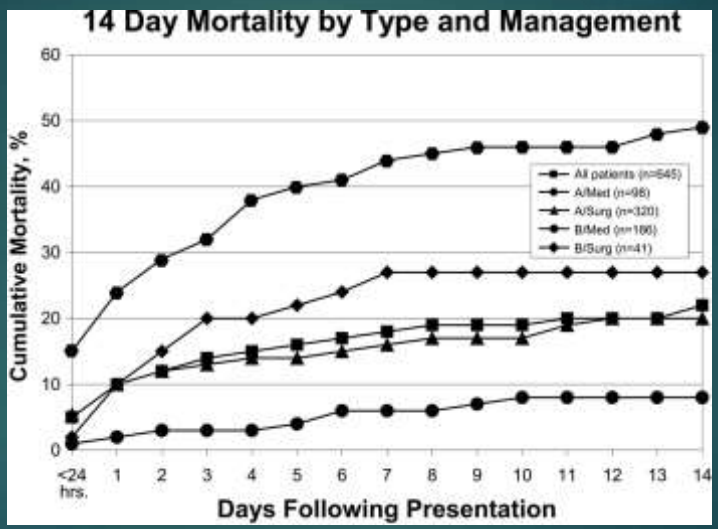
dedifferentiation of vascular SMCs , enhanced elastolysis of aortic wall components

Figure 1. The most common classification systems of thoracic aortic dissection: Stanford and DeBakey.



Thomas T. Tsai et al. Circulation. 2005;112:3802-3813

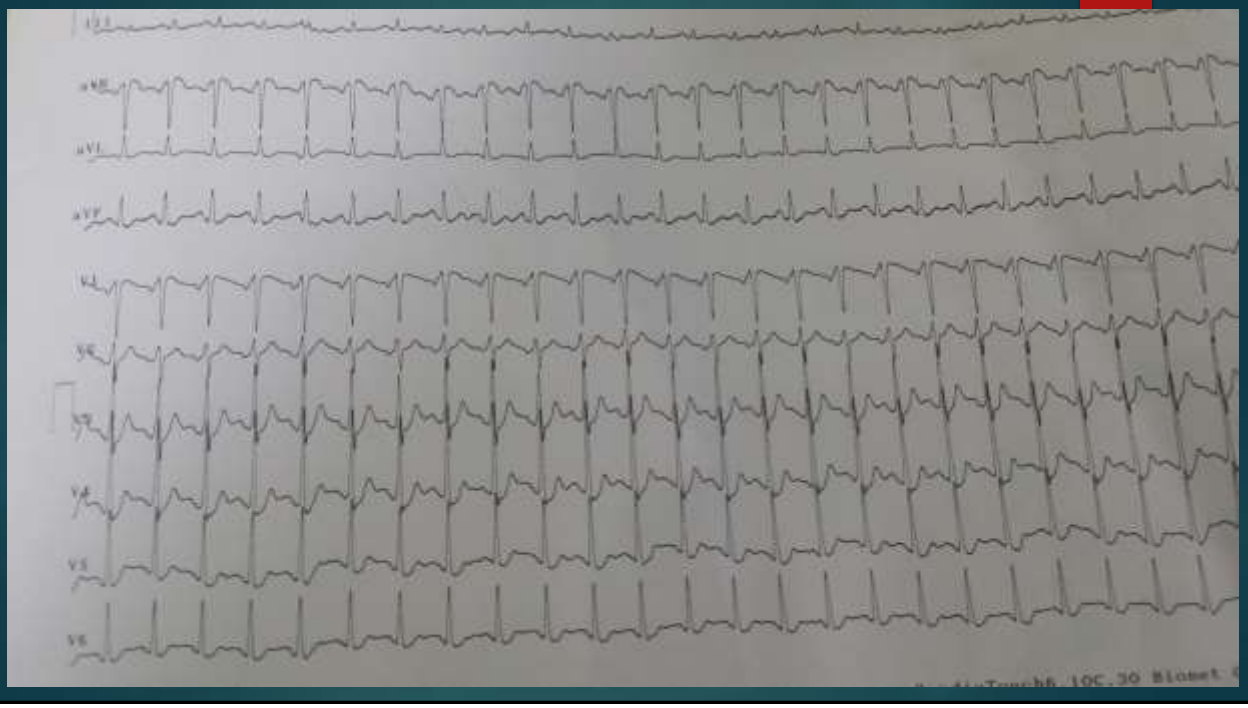
Figure 3. Fourteen-day mortality in 645 patients from the IRAD registry stratified by medical and surgical treatment in both type A and B aortic dissection.



Thomas T. Tsai et al. Circulation. 2005;112:3802-3813

Case 1

- 48 years old male
- HTN, smoker
- Severe chest pain referred to back and neck !
- Clinically :
- Conscious ,
- BP: 150/100 mmHg
- HR: 100 bpm regular with intact peripheral and carotid pulsation
- Cardiac: S4, no Murmers
- No remarkable finding on other system examination

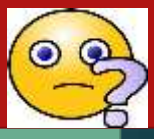


Laboratory workup

- Cardiac markers: - ve
- D-Dimer: -ve
- Cr: 1.0 mg
- ALT 32 U/L
- HB: 12 mg
- INR: 1
- Hb: 11 g/dl

ER: what is your plan sir?

Plze load him with **DAP**
Give **Enoxparin**
Prepare him for early invasive strategy if no response (coronary angiogram &PCI)



Ok sir done

1 hour later

Pain is refractory,
No dynamic
ECG changes

OK:
Send him to cath lab dear
I'll come now

BUT

- The patient deteriorated with intractable chest pain
- Haemodynamics started to be compromised

Sir: can we evaluate
him quickly by echo?

Of course
but inside cath lab please
Don't waste time

The echocardiography is fortunately done before needling the patient

Sir: a flap of dissection is suspected by echo

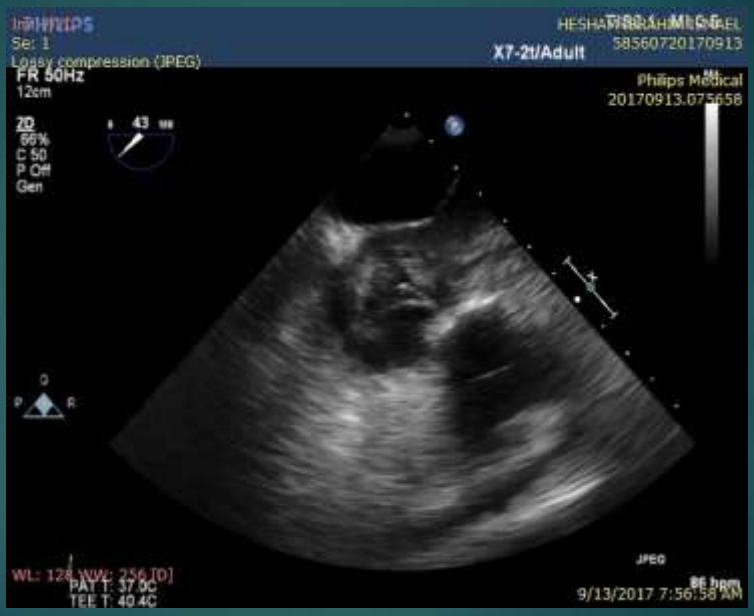
Echo!!!
Suspected
Flap of dissection!!!

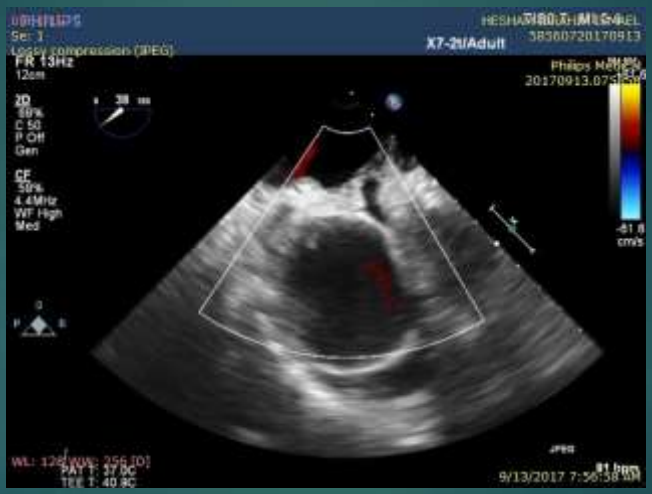
DAP,ENOXPARIN

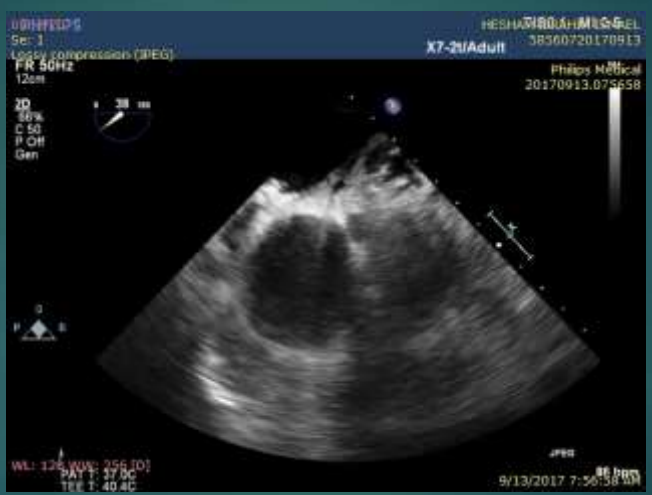
What can be happened?

What can be happened?

- Nothing, Just may




Lossy compression (JPEG)
FR 13Hz
12cm
X7-2t/Adult
Philips Medical
2D
88%
C 50
P Off
Gen
CF
50%
4.4MHz
WF High
Med
-61.8
cm/s
WL: 128 WW: 256 [D]
PAT 1: 37.0C
TEE T: 40.4C
9/13/2017 7:56:58 AM


Lossy compression (JPEG)
FR 50Hz
12cm
X7-2t/Adult
Philips Medical
2D
88%
C 50
P Off
Gen
WL: 128 WW: 256 [D]
PAT 1: 37.0C
TEE T: 40.4C

Sir, a true flap of dissection is documented by TEE

OHH
Call for Urgent surgery please.

BUT:

What about preoperative coronary angiography??

Treatment:

Definitive Therapy

Surgical

Treatment of choice for acute proximal dissection

Treatment for acute distal dissection complicated by the following:

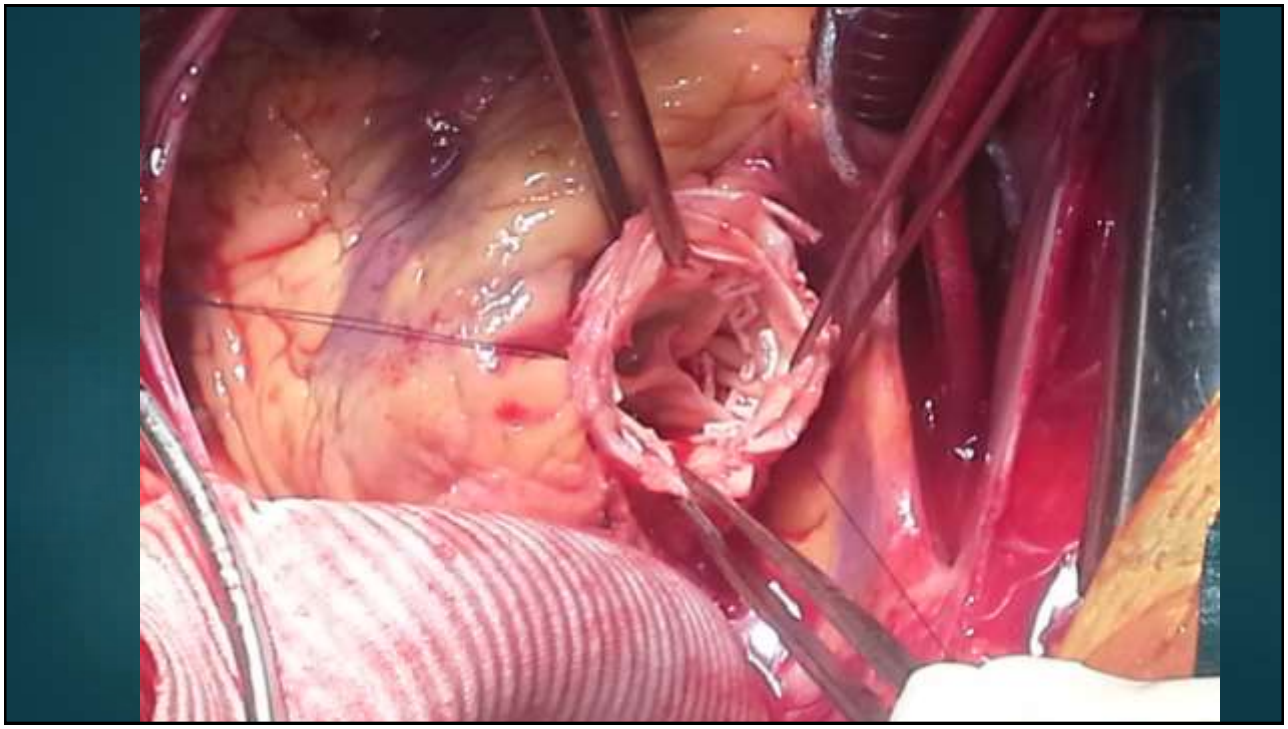
- Progression with vital organ compromise
- Rupture or impending rupture (e.g., saccular aneurysm formation)
- Retrograde extension into the ascending aorta
- Dissection in Marfan syndrome

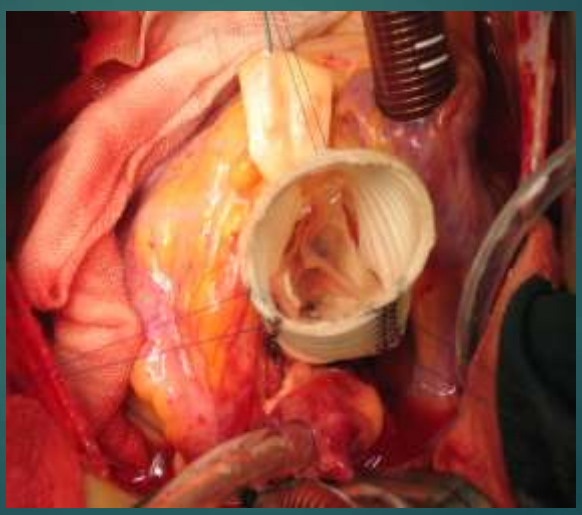
Medical

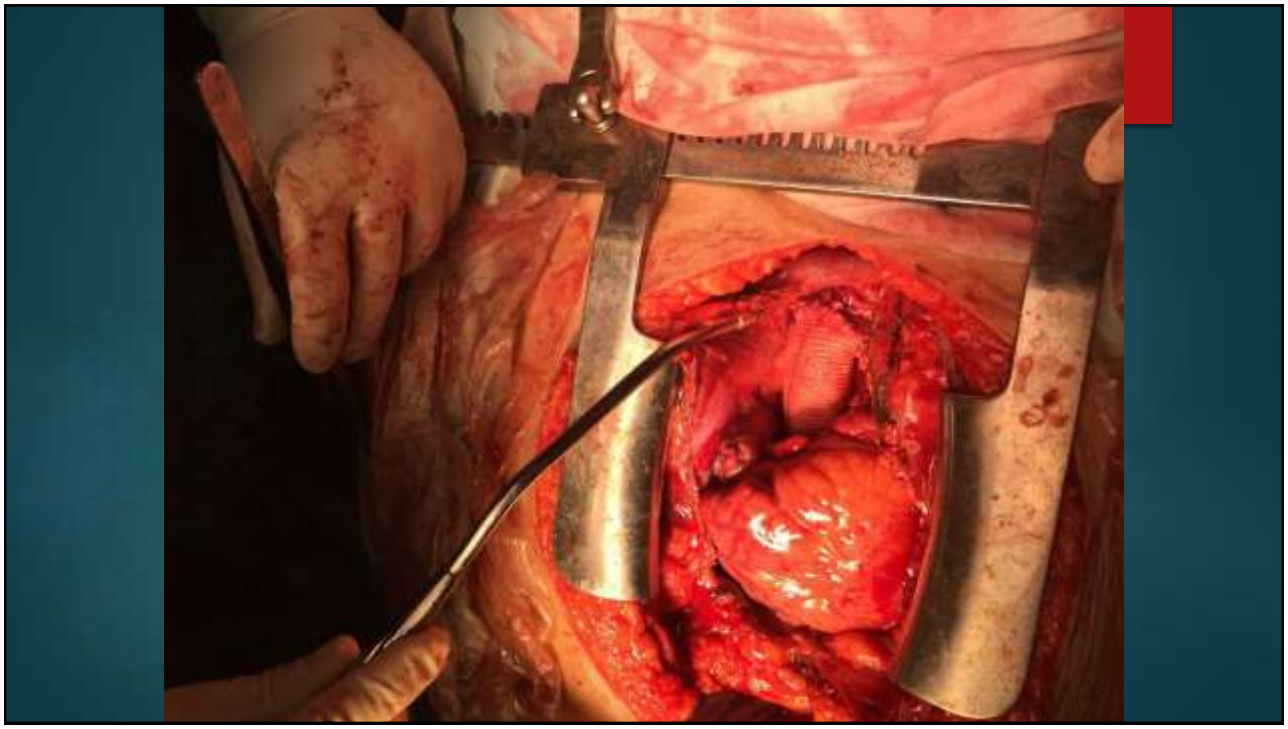
Treatment of choice for uncomplicated distal dissection

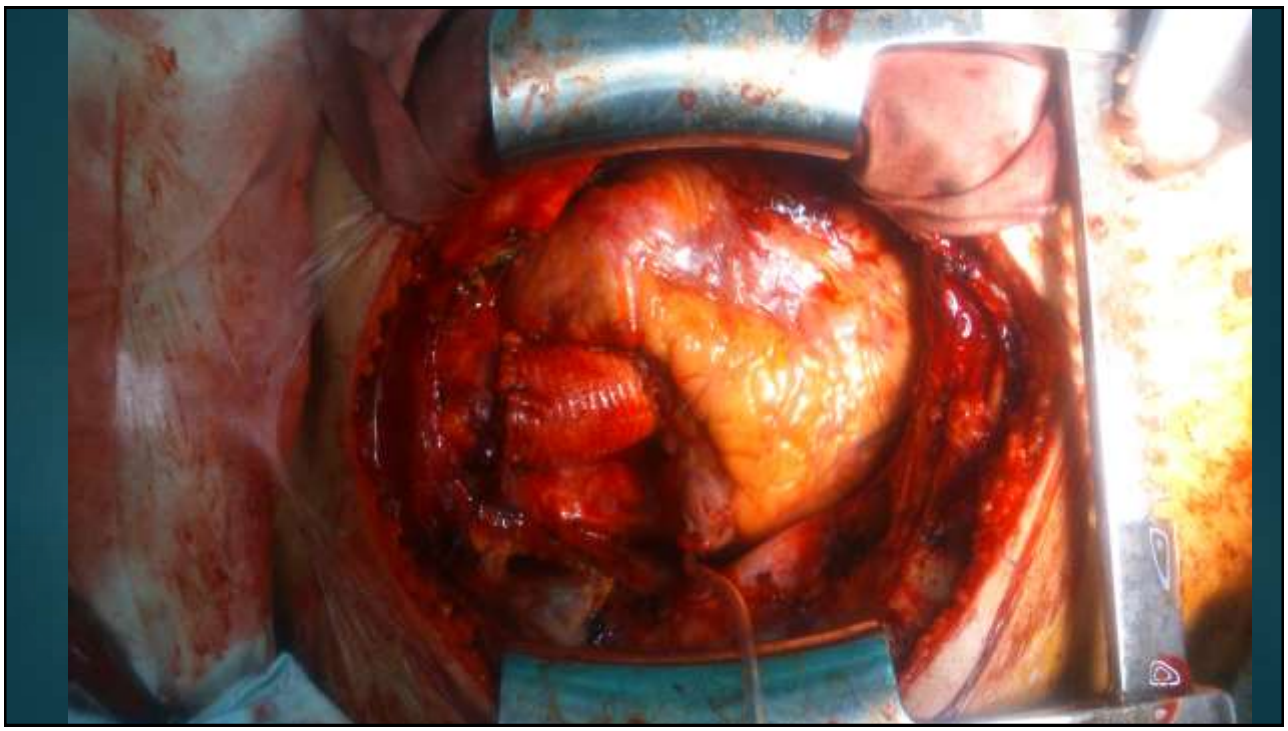
Treatment for stable, isolated arch dissection

Treatment of choice for stable chronic dissection (uncomplicated dissection manifesting 2 weeks or later after onset)









Case 2

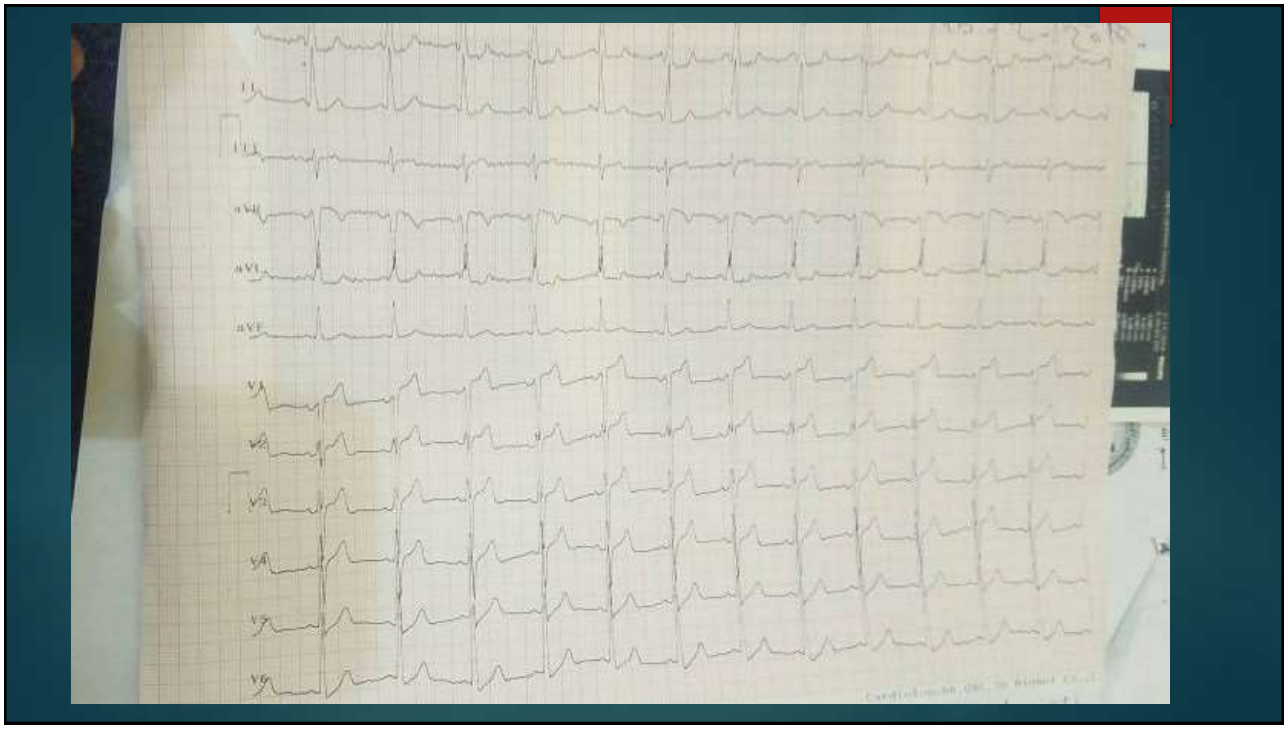
- 43 years old hypertensive male
- Admitted to ICU with chest infection and bronchospasm
- Some back pain, claudication
- A H/O of acute sever back pain while he was doing a heavy muscular activities 10 years ago.
- Diagnosed as a muscular pain and some analgesics were given

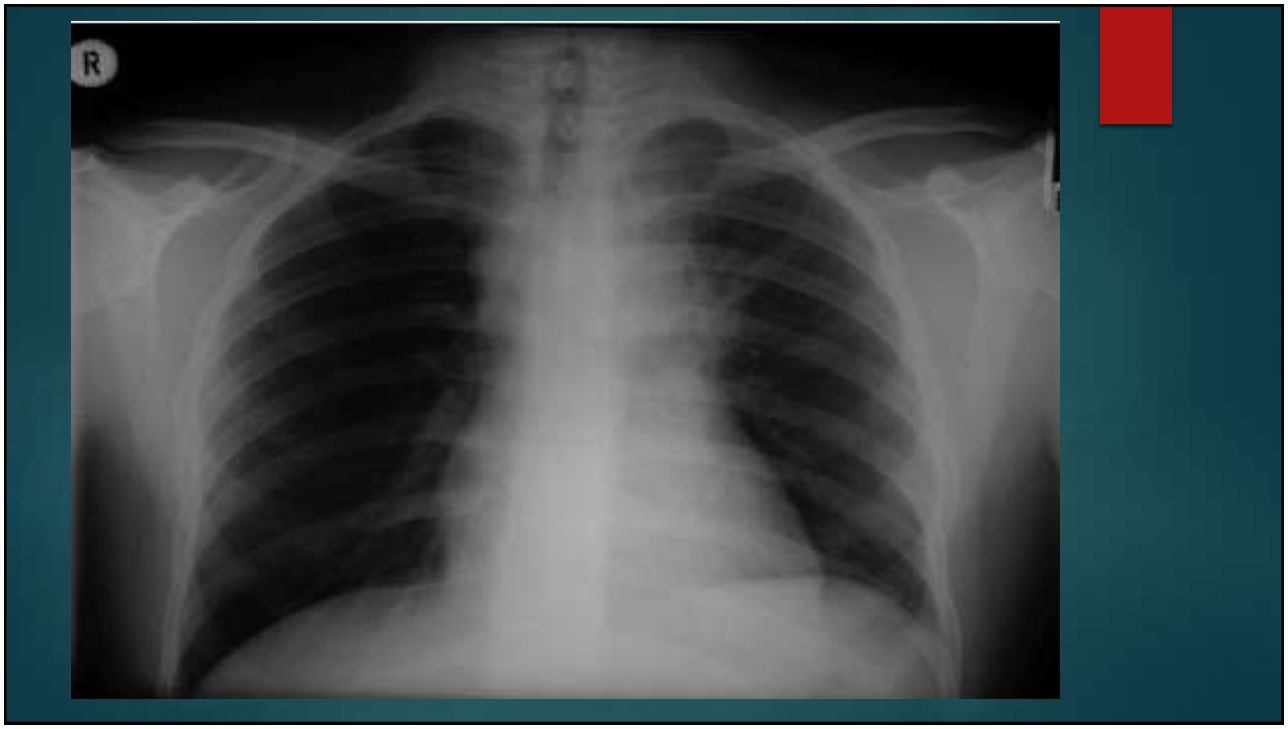
- Conscious
- BP: 140/85 mmHg, HR: 80 bpm, sinus
- Good carotid pulsation, Weak LL pulsation
- Chest: expiratory wheezes.
- Cardiac examination : no murmurs
- Labs:

Creatinin: 1.2 mg/dl

ALT: 20 U/L

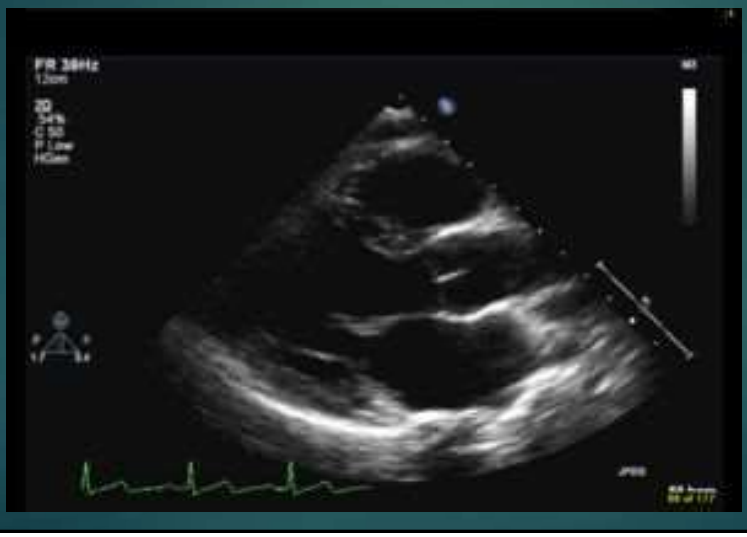
TLC: 14000

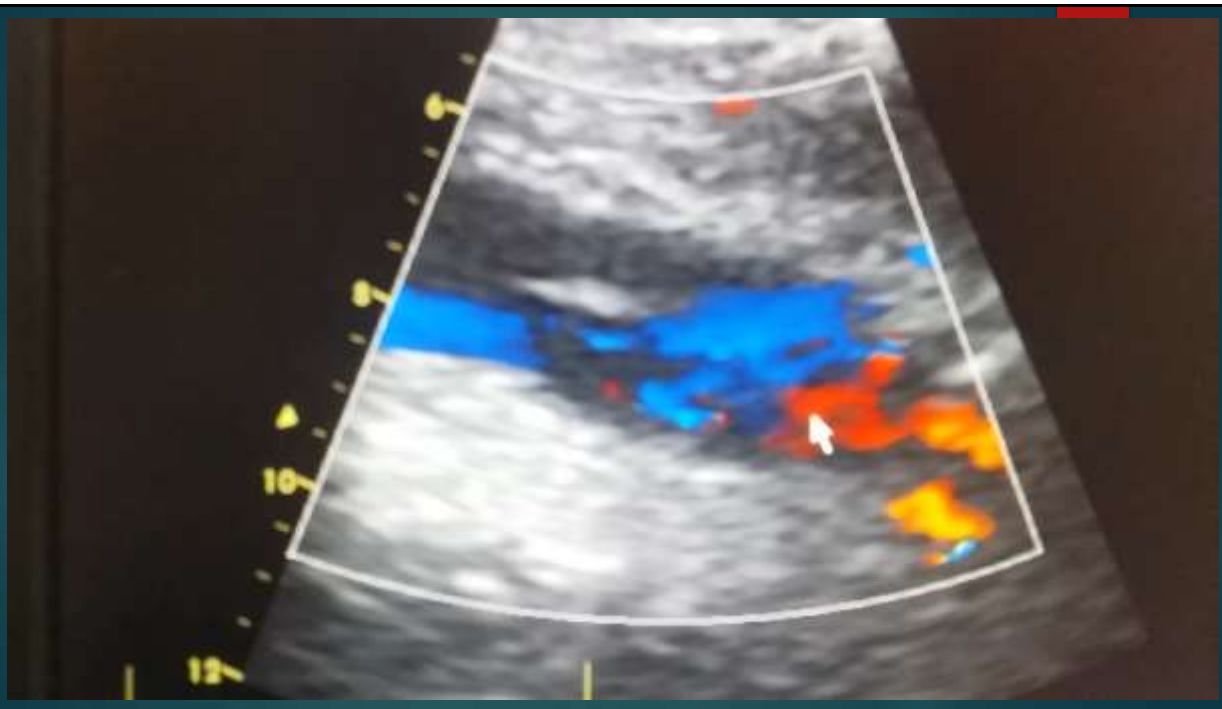



R

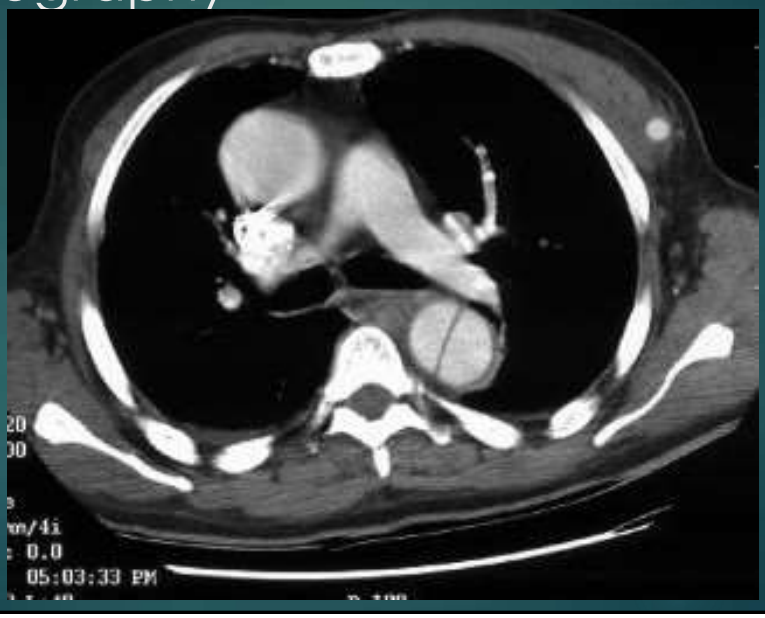
Echocardiography

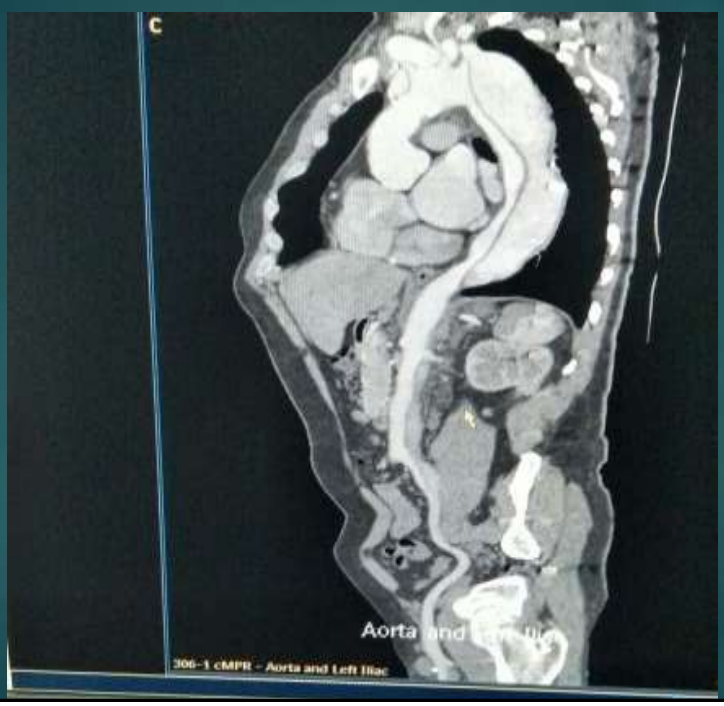
- Routine echocardiography is requested





CT aortography





To be remember:

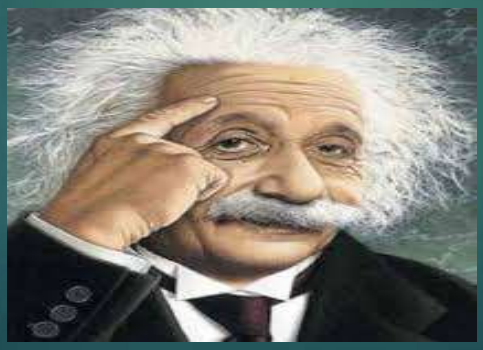
- Not all chest pain is a coronary problem until prove otherwise, the otherwise may be rapidly fatal.
- On the other hand, back pain could be a major problem, it is not always superficial
- Chest pain workup should be fulfilled without underestimation of any tool (eg: chest X ray…)
- Rapid diagnosis and treatment of AAS is very crucial and affect short and long term outcome
- Don't give a potentially harmful drugs without a strong indicative evidence

- Finally

"learn from yesterday, life for today, hope for tomorrow

The important thing is not to stop questioning"

-




Thank you