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Unusual finding

Hanaa Mahmoud Abd Elaziz
A. Lecturer of Cardiology
Mansoura University

History

- Male patient 55 years, farmer, non smoker, not hypertensive nor diabetic.
- Presented with recurrent typical anginal pain.

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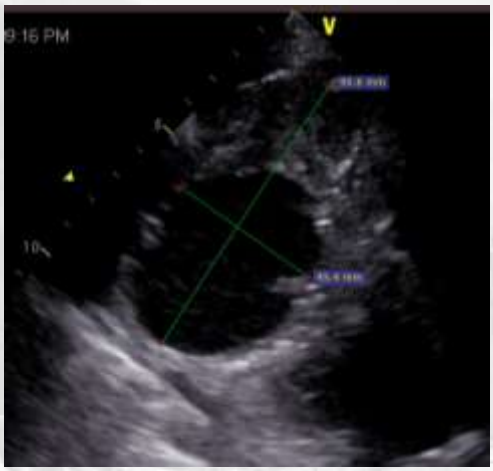
Examination

- Average built
- BP: 140/70
- Pulse: 90.
- Cardiac ex.: NAD
- Chest ex.: NAD

ECG

Cardiac biomarkers

- CPK, CK-MB and Troponin were normal.



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- Huge vascular structure anterior and lateral to the left ventricle, with spontaneous echo contrast inside with no color flow.

Lab

- Creatinine: 2.9 mg/dl.
- GFR: 23 mL/min/ 1.73 m^2
- Normocytic normochromic anemia.
- Albumin: 4.1 gm
- SGOT, SGPT: normal
- Electrolytes & ABG: average.

What is the next step?

1. Coronary Angiography.
2. MSCT
3. Cardiac MRI

- Before decision making:

✓ Renal US was done showing:

- Right kidney with poor Corticomeddullary differentiation.
- Left kidney shows grade I nephropathy.

✓ Nephrological consultaion didn't recommend any contrast agents unless if life saving condition.

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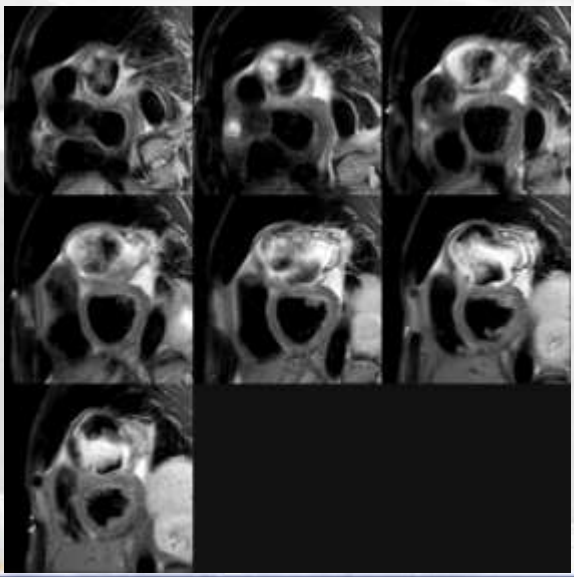
Decision

- Non contrast CMR was preferred to diagnose this vascular structure.



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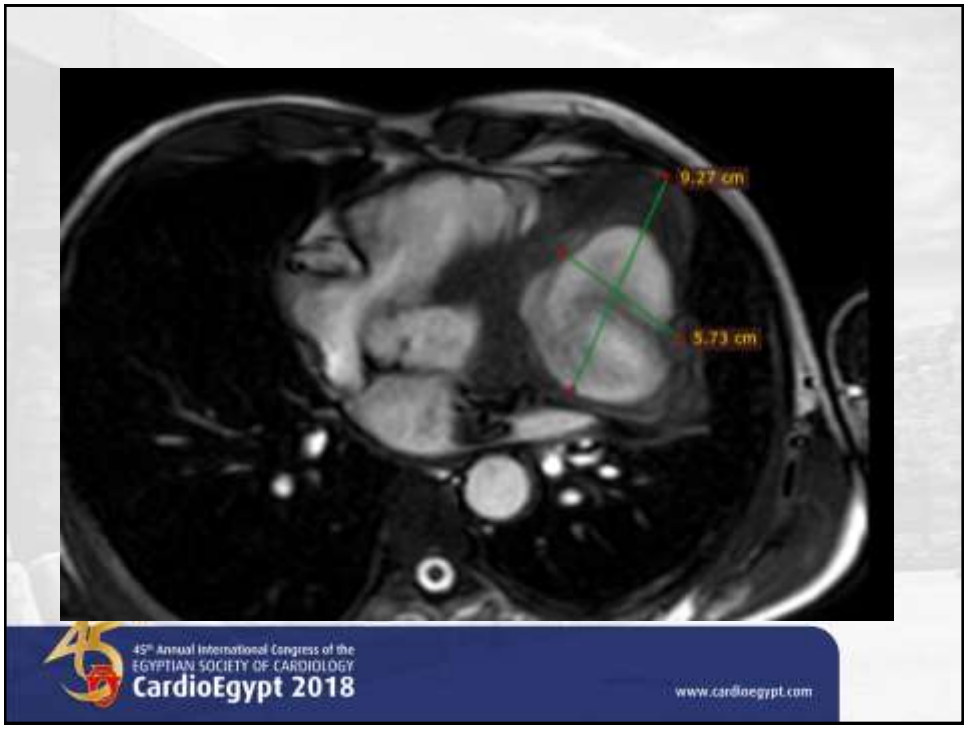
9.27 cm
5.73 cm
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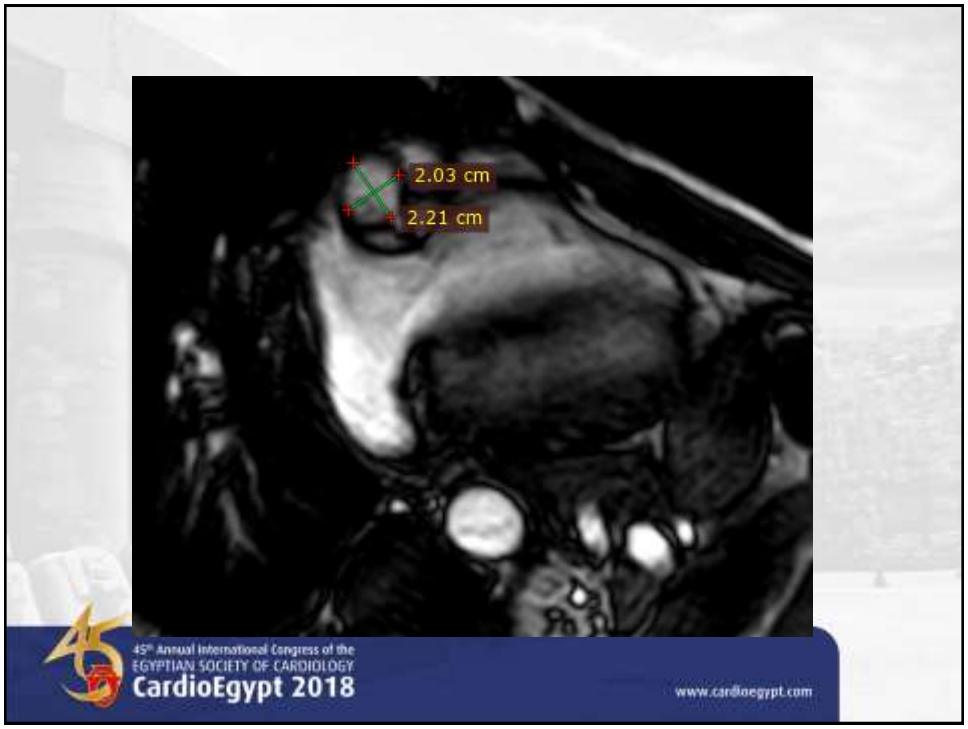
2.03 cm
2.21 cm
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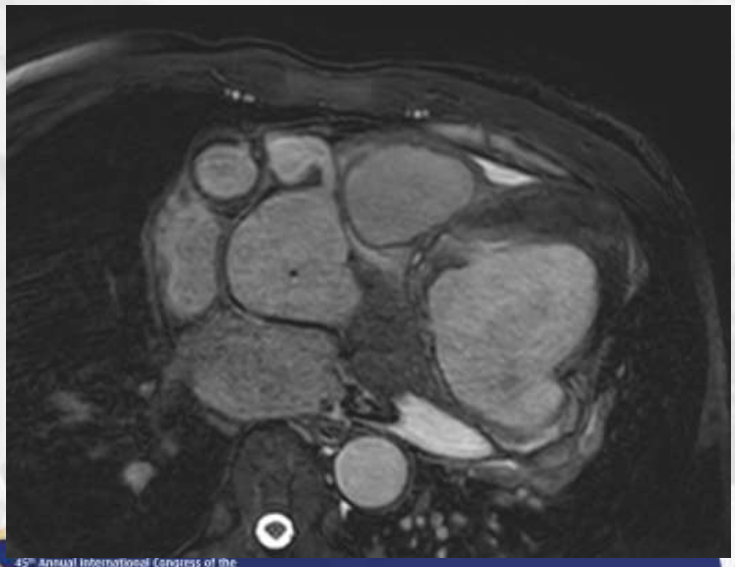
What is next?

- Whole heart axial CMR sequence without contrast was done to evaluate the aorta and coronaries.
- Post-processing reconstruction was done.

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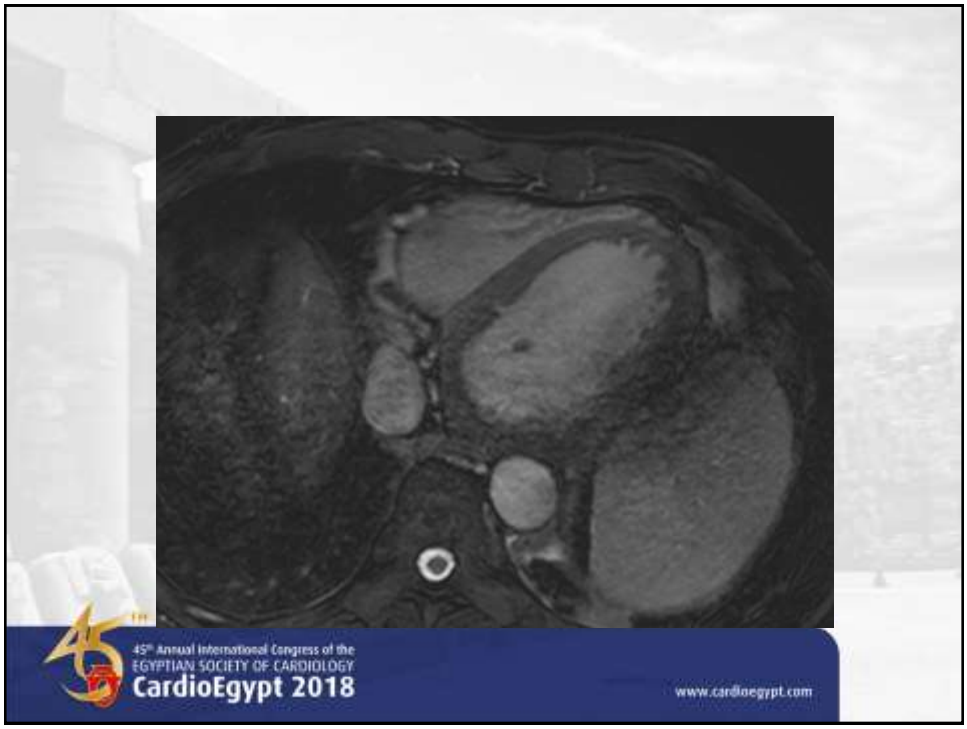
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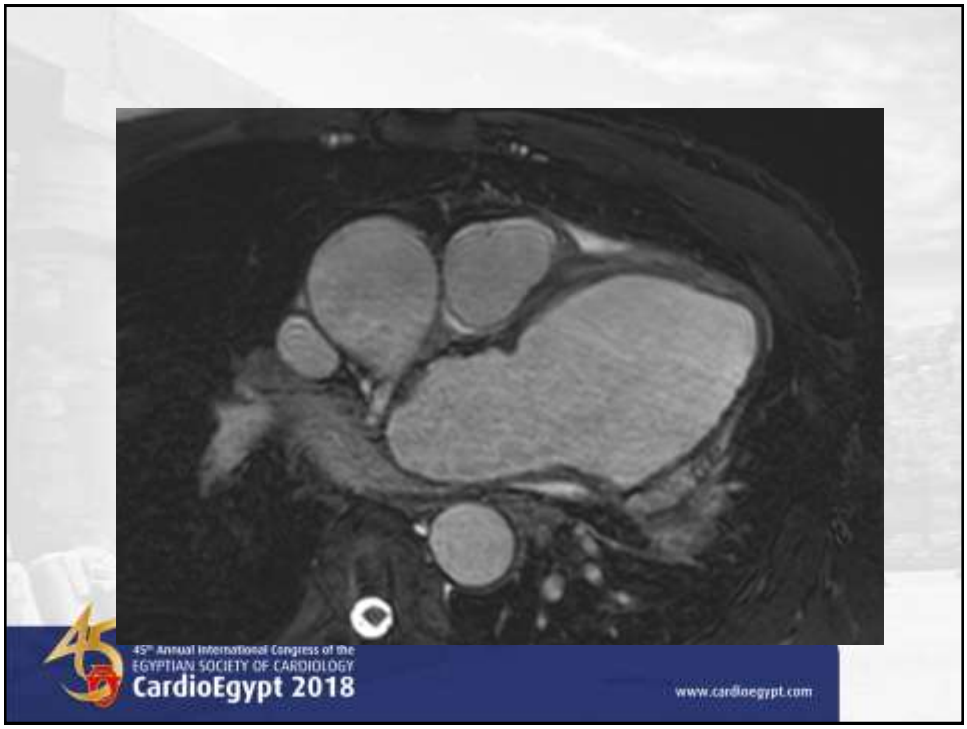
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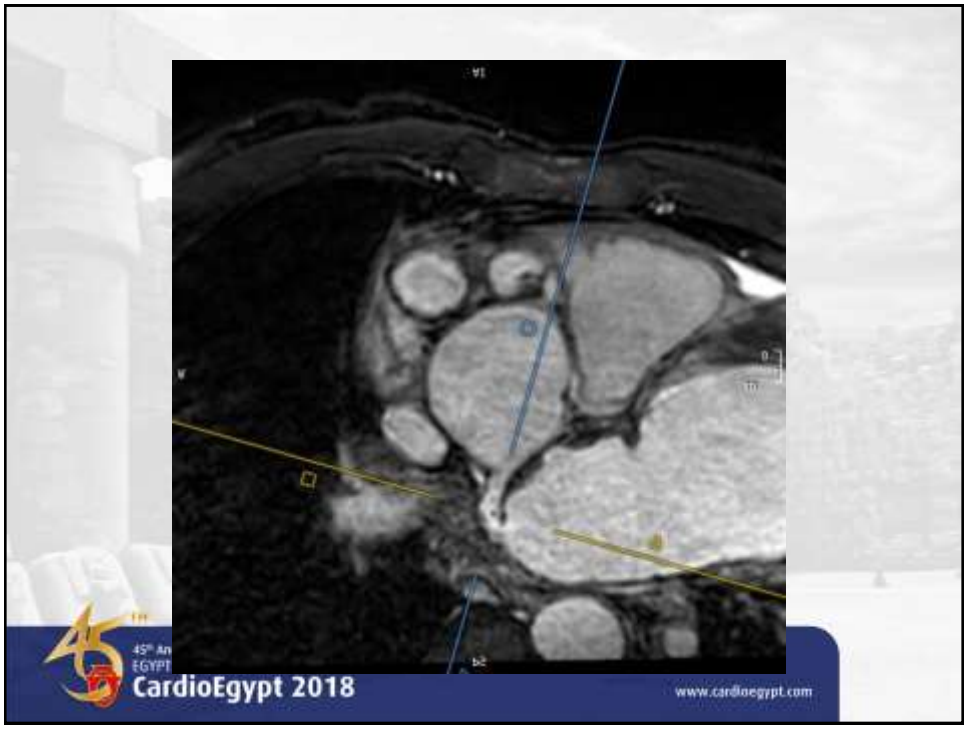
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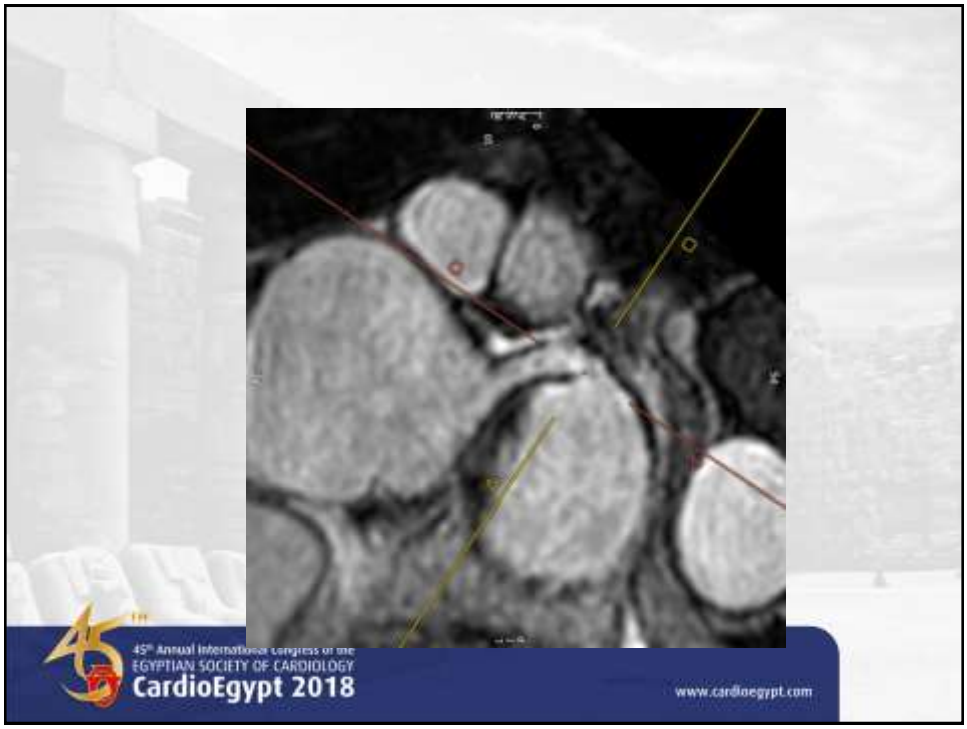
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- The diagnosis is huge aneurysm originating from the Left main taking the course of LAD with a large thrombus inside.
- Multipe RCA aneurysms.

Coronary artery aneurysm (CAA)

- Focal or diffuse dilatation of a coronary artery >1.5 times of its original diameter.

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Causes

Cause	Age	Description	Pathogenetic Mechanism
Atherosclerosis	Adults	Most common cause of CAA, clinical importance depends on association with significant coronary artery stenosis	Local mechanical stress from stenosis, atherosclerotic pathologic findings extending into tunica media
Vasculitis *Kawasaki disease*	Childhood	Most common cause of CAA in childhood in Japan, spontaneous resolution occurs in 50%	Autoimmune, vasculitis
Takayasu	Young adults	Common cause of CAA in young Asian females in Japan	Cellular immunity associated with chronic infection
Polyarteritis Nodosa	Young adults	Necrotizing inflammatory lesions in small- and medium-sized arteries	Characterized by fibrinoid necrosis and infiltration by predominantly polymorphonuclear leukocytes
Connective tissue disorders	Young adults	Ehlers-Danlos syndrome, Marfan syndrome, cystic medial necrosis	IL-6, TGF-β, C-reactive protein, MMP-2, MMP-9
Mycotic	Any age	Infection with *Staphylococcus aureus* or *Pseudomonas aeruginosa*, syphilis, Lyme disease	Microembolization to vasa vasorum, direct pathogen invasion of arterial wall, immune complex deposition
Trauma/ iatrogenic	Adults	Clinical history helps establish diagnosis healing because of antiproliferative treatment with cortisone, colchicine, and anti-inflammatory drugs	Trauma from oversized balloon or high inflation pressures, coronary dissection, interventions in the setting of acute myocardial infarction, inadequate

Classification of CAA

Classification of CAAs		
Characteristics	**Categories**	**Luminal diameter of the aneurysm**
Shape	Saccular Fusiform	Maximum transverse diameter > longitudinal dimension Longitudinal dimension > maximum transverse diameter
Vascular wall integrity	True aneurysm Pseudoaneurysm	All vascular layers present Loss of the vascular wall integrity
Topographical extent	Type I Type II Type III Type IV	Diffuse dilatation of two or three vessels Diffuse dilatation in one vessel and localized in another Diffuse dilatation of one vessel only Localized or segmental dilatation

Modified from Antoniadis et al., 2008; Díaz-Zamudio et al., 2009.

Presentation

- Asymptomatic and diagnosed incidentally in coronary angiograms.
- They are mostly located in RCA followed by left main, LAD, and LCX.
- Atherosclerosis is the most common cause of CAAs.

Prognosis

- The prognosis of CAAs differs according to the severity of obstructive CAD.

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Management

1. In asymptomatic patients without severe CAD, **conservative** approach is recommended.
2. **Covered stents** may be concerned in eligible symptomatic patients.
3. Surgery

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Thank You

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