A Case Report of Mass Attached to Mitral Valve apparatus

By
Dr: Mohamed Abd El Shafy Tabl
Lecturer of Cardiology
Benha University

CASE REPORT

PERSONAL HISTORY
62 years old female, married & has three off springs, the youngest of them 34 years old, she is house wife with no special habits of medical importance.

COMPLAINT
Her chief complaint was chest pain 3 weeks ago.
Present history

The condition started one year ago when she had one attack of retrosternal chest pain on resting condition of acute onset, progressive course, received medical consultation one week later & diagnosed to have evolving MI.

Two weeks later, she performed diagnostic coronary angiography which showed 80% stenosis in LAD & 75% stenosis in right coronary artery.

The patient was advised to do coronary intervention and received medical treatment in form of aspirin, clopidogrel, B-blocker and ACEI.
Her medical history was hypertension and **previous cerebrovascular stroke on 2009**

CT brain was done and showed a small low-density region in the left parietal lobe.

**General examination:**

**Blood pressure** 140/90 mmHg.

**Pulse** is 90 BPM, regular of average amplitude and volume equal on both sides of no special character and all peripheral pulsations are felt.

**Temp** = 37.7 °C (oral measure)

**R.R** = 14 / Min, thoracoabdominal

with no other abnormalities in general examination except the patient was **under weight**.
Local examination:

Inspection & palpation: Normal
Percussion: Normal
Auscultation:
Normal S1 with normal intensity of S2 and normal physiological splitting
no added sounds
short, mid diastolic, low pitched murmer with maximum intensity on apex increased on left side decubitus.

Her blood examination shows:
leukocyte count = 5,600/mm³,
Hb = 9.7 gm/dl
ESR = 78 1st hour
120 2nd hour
Coagulation profile = Normal
Creatinine = 1.3 mg/dl
SGPT & SGOT = 33 U/L & 35 U/L
EKG:

Previous inferior MI with antero-lateral ischemia

We more performed a trans thoracic echocardiography

There was a single oval echo dense mass of 3 x 2 cm in LV cavity with pedicle attached at mitral valve posterior leaflet with mild MR.
Discussion of the case
Questions to be answered?

1- What is the nature of a mass attached of MV apparatus?

a- Vegetation of IEC
b- Thrombus
c- Cardiac Tumor
d- metastatic carcinoid tumor
e- others

A- Is it Vegetation of IEC?

IEC vegetation tend to develop on the upstream side of the valve (atrial side of MV & ventricular side of AV).

Sessile or pedunculated with ill-defined borders, small or large in size but usually have oscillating or fluttering movement.

Acute valve IEC usually cause significant degree of regurgitation.

Clinically?
B- Is it thrombus?

Data against:

Thrombus usually less mobile

Thrombus has no pedicle

Thrombus in LV cavity usually affecting apex mostly in presence of akinesia or dyskinesia, chronic LV aneurysm
d- carcinoid

Data against
carcinoid tumors usually affecting tricuspid & pulmonary
valve, rarely affecting mitral & aortic valve due to
deactivation of serotonin in lungs.

inspite left side could be affected through right to left
shunts, isolated left sided carcinoid is very rare.
C – is it cardiac tumor?

Data with:

- Elderly patient
- Under weight (cachexia)
- High ESR & Anaemia
- Local cardiac examination (diastolic murmer affected by changing in position ??)
Questions to be answered?

1- What is the nature of a mass attached of MV apparatus?

a- Vegetation of IEC
b- Thrombus
c- cardiac tumor
d- carcinoid
e- others ?

2- What is the type of this intracavitary tumor?

A- Metastatic secondary tumor ?
B- Primary cardiac tumor ?
A- Metastatic secondary tumor ?

The majority of cardiac tumors are secondary to extracardiac malignancies such as Lymphoma, Breast cancer or Lung cancer with 20 to 40 times more than primary cardiac tumors.

But More than 90% of metastasis to the heart tend to affect the pericardium as ( Kaposi sarcoma , Lymphoma ) and less than 5% are intracavitary.

So, possibility of intracavitary metastatic tumor is low.

B- Primary cardiac tumor ?

A primary tumor of the heart is rare, ranging from 0.002% to 0.028% among autopsy cases.

75% of primary cardiac tumors are Benign
25% are malignant.

Classified into:

Intracavitary as Myxoma, Lipoma, Papillary fibroelastoma.

Intramural as Rhabdomyoma, Fibroma.

Pericardial as Angiosarcoma.

Mixed as hemangiomas, hamartomas.
2- What is the nature of this intracavitary tumor?

A- Myxoma
B- Lipoma
C- Papillary fibroelastoma

**A- Myxoma:**

The most common benign primary cardiac tumor
Account more than 50% of primary cardiac tumors
Usually on Age 30 – 50 years but may occur from 1 year to 83 years, 65% in women.

Usually single but may be multiple in familial type (6.5 – 10%) usually as apart of Carney complex
(Skin pigmentation, multiple endocrinal disorders)
Common site is LA (site of fossa ovalis)
Less common sites as LV, RA, RV but rarely attached to valve apparatus
Usually pedunculated Echo dense (4–8 cm).
Usually highly mobile and moving across MV in diastole

Myxoma
Cardiac myxoma is the most common primary cardiac tumor to produce emboli
Cardiac myxoma causing systemic findings include fever, weight loss, fatigue, myalgia, artheralgia & raynaud syndrome
**Myxoma**

83% of myxoma occurs in LA
12.7% in RA
1.3% bi atrial
**1.7% in LV**
0.6% in RV

B- Lipoma:

The second most common type.
Common site is IAS, usually encapsulated and echoleucent
C-Papillary Fibroelastoma:

Papillary fibroelastoma is extremely rare with 7-9% of benign primary tumor of the heart.

It usually derives from aortic or mitral valve.

It sometimes derives from any endocardial surface of heart including left ventricle or atrial septum.

VIDEO FROM WWW.MEDICALVIDEOS.COM

papillary fibroelastoma is single pedunculated mass with fond like figures and internally as echo leucent lesions attached to tip of papillary muscles, chordaeas or rarely to entire leaflets of M.V.
Conclusion
What is the nature of a tumor in LV attached to MV annulus?

- A- Myxoma
- B- Lipoma
- C- Papillary fibroelastoma

Conclusion:
Q: What is the best next step for our patient?
1- doing TEE?

Sensitivity 93-97%, more accurate for small & posteriorly located tumors (LA, Aorta)
Conclusion:

Q: what is the best next step for our patient?

2- doing CT chest with contrast or enhanced CMR:
Sensitivity 97-98%, superior to modify lesion tissue character & extra cardiac extension which are important before surgery.

Conclusion:

Q: what is the best next step for our patient?

3- doing ECHO guided biopsy
Definite diagnosis of cardiac tumors only through Biopsy, false negative biopsies may occur with echo guided biopsy so, invasive mediastinoscopy or thoracotomy may be used.
Conclusion:

Q: what is the best next step for our patient?

4- refer the patient for surgery immediately.

Complete excision of myxoma is recommended once diagnosed, independent for symptoms due to high risk of embolic complications.

Conclusion:

Q: what is the best next step for our patient?

1- doing TEE?
2- doing CT or CMR
3- doing biopsy
4- refer for urgent surgery
5- All
Conclusion:

Back to our patient

Finally we referred the patient for urgent surgery but in less than 48 hours she had Sudden Cardiac Arrest ....

CPR was done (on bradycardia & electromechanical dissociation) but was unsuccessful.

Massage to take home

We experienced a case mostly atypical site of myxoma

Inspite atherosclerosis is the common cause of cerebrovascular strokes as MI & cerebral infarctions.

Rare cardiac embolic sources as tumors have to be considered
Diagnosis of cardiac tumors need high index of suspicion, often TTE, TEE, CT or CMR are needed. Definite diagnosis needs cardiac biopsy.

Physician must suspect cardiac tumor in patient with atypical presentation.

Risk of Systemic or pulmonary embolization is high, anticoagulants are mandatory & early surgical resection is life saving.

THANK YOU