Medicine –Cardiovascular System

Physical Examination

A. Start the examination with: (WIPE)

1. **W**ash hands**:** Wash your hands in front of the examiner or bring (sanitizer with you)
2. **I**ntroduce yourself**:** My name is (your name) ,I'm a third year medical student
3. **P**ermission: Explain what are you going to do and take his permission

   *__Explain the examination:__ I'm going to do physical examination for your cardio vascular system which involve look, feel and listen to your chest by stethoscope
4. **P**osition: **P**atient's position should be at 45°
5. **P**rivacy: I Should maintain patient privacy
6. **E**xposure**:** All over the trunk, can you take off your shirt please?

Be confident

** DON'T MISS THE ROOM LIGHTING **

B. General Inspection and Vital Signs: (ABC_2D) in front of the patient

- **A**ppearance: (young, middle aged or old) and looks well
- **B**ody built: (normal, thin or obese)
- **C**onnections: medications, I.V lines , oxygen mask .
- **C**olor: pale or jaundiced
- **D**istress: The patient look comfortable and doesn't appear short of breath or using his accessory muscles
- **E**lse: conscious ,Oriented to time, place and person

Begin by observing the patient's general health from the end of the bed.

- ✓ **E.G:** The patient looks well (not cachectic), obese, not connected to IV line nor O2 mask, no obvious pallor or cyanosis, no respiratory or pain distress (not tachypnic). Oriented to time, place and person.
- ✓ Also look for syndromes that associated with cardiac disease (Marfan, Down and Tunner syndromes)

note

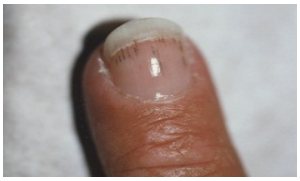
If your examiner ask you to examine the praecordium, start locally from the chest, then move peripherally if you have time..

Hand:

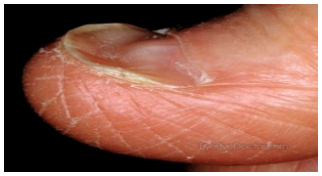
Nail	Dorsum	Palm	Radial pulse
✓ Clubbing ✓ Splinter hemorrhage ✓ Cyanosis ✓ Refill time (<2 sec) ✓ Nicotine stain ✓ Koilonychias	✓ Tendon xanthomata ✓ erythema marginatum	✓ Osler nodes ✓ Janeway lesions ✓ Temperature ✓ Color	✓ Rate - Rhythm ✓ Volume -Synchronization (Radio radial / Radio Femoral) -Desynchronization : coarctation of the aorta

✓ **Flapping tremor**

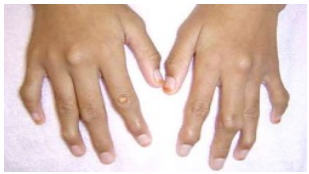
Splinter hemorrhage



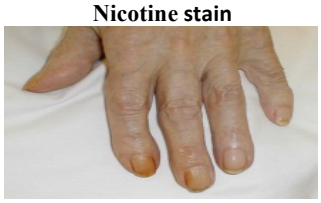
Koilonychia



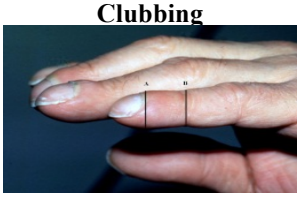
Tendon xanthomata



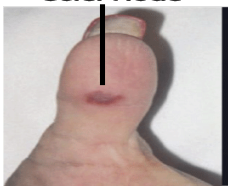
Nicotine stain



Clubbing

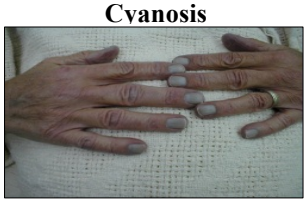


Osler Node



Janeway Lesion

Cyanosis



Forearm:

I. **Collapsing pulse** *–associated with aortic regurgitation
II. **Subcutaneous nodule**-associated with Rheumatic Fever

*Ask the patient if he has pain in his shoulder before you start raising his arm

Arm:

Measure the Blood pressure.

Neck:

- **Carotid pulse -** Volume and character
- **Jugular venous pressure (JVP):** Check JVP by using your torch "Do it bilaterally"
  - ✓ If you could not see it, put the patient on 35˚ then on 25˚and then on 10˚ until you see it.
  - ✓ If you did not, do the Hepatojugular reflux test.
  - ✓ Kussmaul's sign: rise of JVP in inspiration.
  - ✓ The vertical height of the jugular distension from the sternal angle should be no greater than 4 cm.

Face:

Mitral facies, malar rash

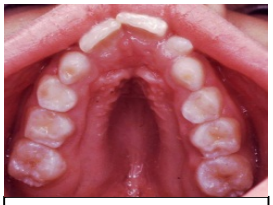
Eyes:

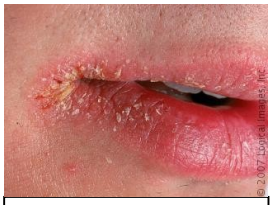
✓ Pallor in conjunctiva ✓ jaundice in sclera ✓blue sclera ✓ Arcus senalis (corneal arcus)

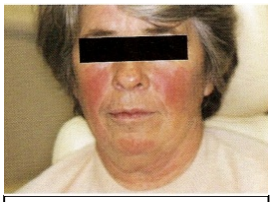
✓ **Xanthelasma** : type II or III hyperlipidemia.

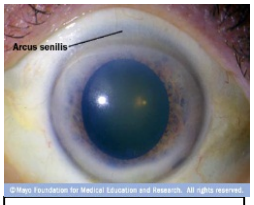
Mouth:

✓ **Central cyanosis "** Ask the patient to raise his tongue**"** - **peripheral cyanosis** "in the lips " ✓ **Angular stomatitis**
High arched palate ✓ **Dental hygiene** – important if considering sources for infective endocarditis

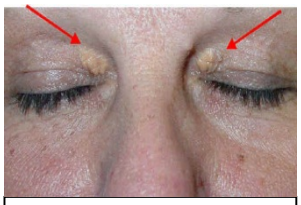

High arched palate


Angular stomatitis


Mitral facies



Arcussenalis


Xanthelasma

Praecordium:

Inspection

Chest wall deformities	**pectusexcavatum / pectuscarniatum**
Scars	Lateral thoracotomy (mitral valve) Midline sternotomy (CABG) Clavicular (pacemaker)
Devices	Holter monitor: an ambulatory 24 hours ECG. Pacemaker or intracardiac defibrillator (lCD): usually below the left or right clavicle.
Visible pulsations (with the aid of torch)	forceful **apex beat** may be visible > (hypertension / ventricular hypertrophy) Abnormal pulsations.

Palpation:

You have to palpate for three things: (Apex beat,Heaves and Thrills)

Apex beat	• **located in the 5th intercostal space in mid-clavicular line** • **The most inferolateral palpable pulse.** - **If it is impalpable, ask the patient to turn to the left.** - **The beat may be:** ✓ **Normal.✓Tapping ✓Double impulse ✓Sustained**
Parasternal heaves	• Place the heels of your hands over the right and left parasternal regions, and ask the patient to stop breathing. - In the presence of a heave, the heel will lift off the chest wall with each systole. - Causes include: ✓ Right ventricular hypertrophy. ✓ Left atrial enlargement (not hypertrophy
Thrill	• A palpable murmur. put the heal of your hand at all the areas of the valves ✓ The site of a thrill is the same site of the valve.

Auscultation

Auscultate the 4 valves (using diaphragm):

✓ **A**ortic valve, **P**ulmonary valve, **T**ricuspid valve and **M**itral valve

Palpate the carotid pulse to determine the 1st heart sound

In case there is a murmur >> **look for two things:**

1. **Accentuation maneuvers** (These maneuvers cause particular murmurs to become louder)
   a. **Roll onto left side and hold his breath in expiration:**
      ✓ Listen in mitral area with bell – **mitral murmurs** are louder
   b. **Lean forward and hold his breath in expiration:**
      ✓ Listen over aortic area with diaphragm– **aortic murmurs** are louder
   c. **During inspiration (Right sided murmurs increase)**
   d. **During expiration (Left sided murmurs increase)**

2. **The radiation of the murmur:**
    a. **Carotid arteries:** radiation of **aortic stenosis murmur.**
    b. **Axilla:** radiation of heart murmur into the left axilla – **mitral regurgitation**

The carotid arteries: for any bruits. (ask the patient to take a deep breath then hold it, while he is holding his breath check the carotid by the bell.) "Do it bilaterally"

Lung bases: crackles / pulmonary oedema – left ventricular failure

AS murmur	MR murmur
Ejection systolic, mid systolic, crescendo-decrescendo murmurs (common): **From S1 to S2 but it stops before S2.** **check for radiation** * **This is the most imp. Murmur. The rest please check them on Talley#79 or on Doa'a Handout #27**	**Pansystolic, holosystolic murmurs (common):** **From S1 to S2 in same intensity.** **check for radiation**

End the examination with:

Back:

- Inspection for (scars, deformity)
- Palpation for **(Sacral oedema)**
- Percussion for (pleural effusion).

Legs:

- **Lower limp edema.**
- clubbing of the toes.
- Examine all peripheral pulses bilateraly.

Abdomen:

-Inspection: scars, deformity.

-Palpation:

- Hepatomegaly (right ventricular failure)
- pulsatile liver (tricuspid regurgitation)
- splenomegaly (endocarditis)
- aortic aneurysm
- Ascites

Eyes:

Examine the retina with an ophthalmoscope

To complete the examination:

Tell the examiner that "I will conclude my examination by doing **fundoscopy exam**"

Finally

Thank patient, Wash hands and Summaries findings

Interpretation of the abnormal findings

Abnormality	Indicates
Splinter hemorrhage, Osler nodes and Janeway lesions	infective endocarditis
Koilonychias	iron deficiency anemia.
Refill time	normal is <2 seconds – if prolonged may suggest hypovolaemia
xanthomata	hypercholesterolemia
blue sclera	Marfan syndrome
Arcussenalis	Indicate cardiovascular risk / it comes with aging.
pectusexcavatum	Marfan syndrome
High arched palate	Marfan syndrome
Angular stomatitis	iron deficiency

You should to know

- each part of the examination indicates what
- You should know the types of murmurs and their radiation

Don't forget,

- examine the patient at the right side
- before palpate ask if there is any pain
- say to the examiner: I will start locally from the chest, If I have time I will move to peripheral

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