

# **GROUP THREE MEMBERS**

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## **Cardiovascular examination**

Examination of the cardiovascular focuses on 5 structures:

1. General appearance of the patient
2. Physical signs associated with arterial circulation
3. Physical signs associated with venous circulation
4. Physical signs of the heart
5. Physical signs of the lungs

Examination of the system involves the following specific examination:

- I. Examination of pallor
- II. Cyanosis
- III. Edema
- IV. Signs of endocarditis
- V. Taking pulse at different sites
- VI. Examination of the lungs
- VII. Measurements of the jugular venous pressure
- VIII. Examination of the heart
- IX. examination of the peripheral circulation

### **PALLOR**

Ask the patient to be seated or lie supine facing you

Ask the patient to look up, pull the lower eye lids and look for paleness in the lower palpebral conjunctiva.

Also look for pallor in palms, nail beds and tongue.

### **Causes**

- heart disease
- peripheral vascular disease
- anemia
- malnutrition
- anorexia
- bradycardia
- leukemia
- shock

## CYANOSIS

It is the bluish discoloration of the skin and mucous membrane due to increased deoxyhaemoglobin in blood.

There are two types of cyanosis:

Central cyanosis-examine the tongue, soft palate, bucal mucosa, lower pulpebral conjunctiva and peripheral sites. Causes could be congenital heart disease

Peripheral cyanosis-the extremities i.e the hands and the feet causes could be congestive heart failure and frost bites

To differentiate central and peripheral cyanosis massage the ear lobule for 30 seconds, bluish discoloration disappear in peripheral cyanosis whereas it remains the same in c central cyanosis

## OEDEMA

It is an abnormal accumulation of fluid in the interstitium. It can be generalized or localized, pitting or non pitting

### **Sites to examine**

- I. face
- II. sacrum
- III. abdomen
- IV. extremities

Ascites- fluid thrill and shifting dullness over abdomen

Pleural effusion- percussion over lungs

Pericardial effusion –percussion over the pericardium

To check pitting edema, apply pressure over bonny background with your thumb for 30 seconds , look for pitting and allow it for 15 seconds to disappear.

When edema is present you will determine the severity of edema and whether it is pitting and non pitting. Report the findings

## SIGNS OF ENDOCARDITIS

- ✓ fever
- ✓ malaise
- ✓ night sweats
- ✓ chills

## TAKING PULSE

Arterial pulse is the palpable pressure wave form transmitted along arterial wall and generated at root of aorta during cardiac cycle.

## SITES OF TAKING PULSE

Radial pulse- on the thumb side of the wrist

Temporal pulse- lateral to the eye brow on the temporal bone

Bronchial pulse- medial aspect of the cubital fossa

Femoral pulse- upper inner aspect of the thigh

Carotid pulse- side of the neck

Dorsalis pedis pulse- upper surface of the foot

Posterior tibial pulse- behind the lateral malleolus

Popliteal pulse- behind the knee

## EXAMINATION OF THE LUNGS

## MEASUREMENTS OF THE JUGULAR VENOUS PRESSURE (JVP)

The jugular vein is the nearest to the input side of the heart and the pressure measured gives an approximate of the pressure in the right atrium of the right heart. The jugular pulsation reflects the sequence of pressure changes within the right atrium

### HOW TO MEASURE JVP

Properly expose the patient. The patient must be inclined at 45 degrees and the head must be supported with a pillow the relax the sternocleidomastoid muscle. The light source should be shined across the right side of the neck. Look for pulsation from the right side of the neck behind the sternocleidomastoid muscle. Take two rulers and keep the first one vertically from the sterna angle and the other ruler horizontally from the highest point of visible pulsation. The reading on vertical ruler at the point of intersection between the two rulers gives the JVP value. If the right atrial pressure is low Patient should be in recumbent position for the JVP to be seen. If the right atrial pressure is high, patient should sit upright for the JVP to be seen.

### CAUSES ELEVATED JVP

- a) Right heart failure
- b) Superior vena cava obstruction
- c) Fluid overload
- d) Constrictive pericardities
- e) Pericardial effusion
- f) COPD

### CAUSES OF FALL IN JVP

- I. Hypovolemic shock

## EXAMINATION OF PERIPHERAL VASCULAR SYSTEM

Consist of arterial and venous pulses.

### INDICATIONS

- i. Circulatory failure
- ii. Injuries
- iii. Diseases of the veins
- iv. Diseases of arteries
- v. Diabetes mellitus

### REQUIREMENTS

- Watch

- Gloves
- Tape measure
- Stethoscope

## **RPOCEDURE**

Expose area of examination, make sure the area is well illuminated and ensure privacy.

### **METHODS USED**

- 1. Inspection**
- 2. Palpation**
- 3. Auscultation**

### **INSPECTION**

Check color of skin, visible pulsation and dilated superficial veins.

### **PALPATION**

Check skin temperature, feel arteriole pulsation, feel varicosities and muscle tenderness.

#### *Pulse and method of examination*

Carotid-stand by the patient and place the palpating fingers on the sternocleidomastoid muscle slide off to the medial side of the muscle.

Posterior tibialis-place the four palpating fingers halfway between archiles tendon and the medial tibial condyl. With the other hand, hold the foot in dorsiflexion and in inversion.

Dorsalis pedis-draw line between medial and lateral maleolus and from the medial of that line to the first inter-digital space. Palpate with the four fingers in the middle third of that line

Femoral- draw an imaginary line from symphysis to SIAS and from the middle of the line to the medial femur condyl. Palpate with fingers under the inguinal ligament in the course of the left leg. (always compare right with left)

### **DEEP VENOUS THROMBOSIS**

#### **PREPARATION**

Display both extremities wholly

#### *METHODS*

a) Inspection of the limb

-for inequality of the girth of the thigh on the left and right sides.

b) Palpation

It is done on the following areas

- i. Ankle to check for pitting edema
- ii. Popliteal space- check for tenderness
- iii. Thigh- check for tenderness
- iv. Check absence of presences of human
- v. Sign: dorsiflex the foot  
Tibial vein involved

#### TESTING FOR INSUFICIENCY OF THE VEINS

➤ *Trendelenburg 1 and 2*

*1<sup>st</sup> indication*

Test sufficiency of the veins saphena magna

**Method**

- Ask patient to lie and allow to raise the leg for blood to drain out of the vein
- Place the finger tightly on the saphenous opening and ask the patient to stand
- Remove the hands suddenly, when the space feels like a waterfall from up to down, then it is positive

*2<sup>nd</sup> indication*

Test sufficiency or insufficiency of the perforator veins

**Methods**

- Redo procedure one, but apply the hand on the empty vein. Let the patient stand. When it is refilling from up to down with a hand on it, it concludes second test also positive