

GROUP THREE MEMBERS

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CADIOVASCULAR 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. Measurements of the jugular venous pressure
- VII. Examination of the heart
- VIII. examination of the peripheral circulation

PALLOR

Ask the patient to be seated or lie supine facing up,

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

1. Radial pulse- on the thumb side of the wrist
2. Temporal pulse- lateral to the eye brow on the temporal bone
3. Bronchial pulse- medial aspect of the carotid fossa
4. Femoral pulse- upper inner aspect of the thigh
5. Carotid pulse- side of the neck
6. Dorsalis pedis pulse- upper surface of the foot
7. Posterior tibial pulse- behind the lateral malleolus
8. Popliteal pulse- behind the knee

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 to 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 sternal 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 THE HEART

Heart sound variation

Heart sound variations when listening to heart sounds, note their volume (normal, diminished, loud) and whether physiological splitting is present. Relative positions of heart sounds and added sounds in auscultation. Sounds in red are high-pitched. (A1) Aortic component of second heart sound; EC: ejection click; MSC: mid systolic click; OS: opening snap; P2: pulmonary component of second heart sound;. Physiological splitting of the second heart sound is when the sound of aortic valve closure (A2) occurs earlier than that of pulmonary valve closure (P2). It occurs inspiration and is more common in the young. It is caused by increased venous return and negative intrathoracic pressure. This delays right ventricular emptying and pulmonary valve closure, at the same time that pooling of blood in the pulmonary capillary bed hastens left ventricular emptying and aortic valve closure. Reverse splitting of the second heart sound can occur in conditions where aortic valve closure is delayed, such as left bundle branch block or paced right ventricle, or where pulmonary valve closure occurs early, such as in the B form of Wolff–Parkinson–White syndrome. Wide fixed splitting of the second heart sound occurs in atrial

septal defect. A third heart sound may be heard soon after the second heart sound. It is thought to be due to rapid, high-volume filling of the left ventricle. As such, it is found in pathological (left ventricular failure) as well as physiological (athletic heart, pregnancy) states. A fourth heart sound may be heard just before the first sound. This is caused by atrial contraction filling a stiff left ventricle, e.g., hypertensive heart or diastolic heart failure.

Murmurs

When you have considered these heart sound variations move on to consider the gaps between the heart sounds. If you hear a murmur, first establish whether it occurs in systole or diastole (time against the carotid pulse if necessary). Then determine its length and, if short, its exact position (early, mid, or late; systole or diastole).

Added sounds

An opening snap occurring after the second heart sound represents a diseased mitral valve opening to a stenotic position. An ejection click soon after the first heart sound occurs in aortic stenosis and pulmonary stenosis. A mid systolic click's heard in mitral valve prolapse.

After listening to the heart

Listen to the base of the lungs for the fine inspiratory crackles of pulmonary edema. If you suspect right-sided cardiac pathology, palpate the liver, which will be enlarged, congested, and possibly pulsatile in cases of right ventricular failure of tricuspid valve disease. Also, check the patient's ankles for swelling.

Summary

A careful clinical examination can reveal much about the condition of your patient's heart. In addition, noting the findings of a full examination will greatly facilitate specialist referral. In an age of high technology, skilled clinical examination has yet to be surpassed in terms of convenience, safety, and value for money.

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

1. Carotid-stand by the patient and place the palpating fingers on the sternocleidomastoid muscle slide off to the medial side of the muscle.
2. Posterior tibialis- place the four palpating fingers halfway between archilles tendon and the medial tibial condyl. With the other hand, hold the foot in dorsiflexion and in inversion.
3. Dorsalis pedis-draw line between medial and lateral malleolus 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
4. 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*

1st Trendelenburg -Test sufficiency of the veins saphena magna

Procedure

- 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

2nd Trendelenburg-Test sufficiency or insufficiency of the perforator veins

Procedure

- 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