

GENERAL SURVEY & EXAMINATION

GENERAL SURVEY

- Level of consciousness (whether alert, oriented and co-operative)
 - Apparent age (corroborative or not)
 - Decubitus (position of patient in bed)
 - Build (skeletal framework: average/dwarf/tall)
 - Nutrition (nourishment of body: average/obese/undernutrition)
 - Facies
 - Pallor
 - Cyanosis
 - Clubbing
 - Jaundice
 - Oedema
 - Neck vein
 - Neck artery
-

- Lymph nodes
 - Thyroid glands
 - Skin,nails and hair
 - Pulse
 - Respiration
 - Temperature
 - Blood pressure
 - Any obvious deformity (of skull,spine,limbs)
 - Any abnormal movements(eg-tremor)
-

- It is the expressions in the face of the patient, and very often these facial signs collectively lead to prompt aetiological diagnosis of a disease.

Moon face: e.g. cushing's syndrome
prolonged steroid therapy
nephrotic syndrome
acute glomerulonephritis
myxoedema
superior mediastinal syndrome
angioneurotic edema
obesity

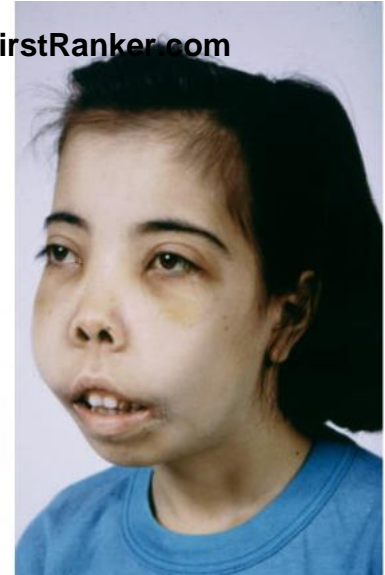


thalassaemic/mongoloid/chipmunk facies:

www.FirstRanker.com

1. frontal bossing
2. depressed bridge of nose
3. hypertelorism
4. apparent mongoloid slant of the eyes
5. malar prominence
6. dental malocclusion
7. mild icteric tinge of conjunctiva

www.FirstRanker.com



Hepatic facies:

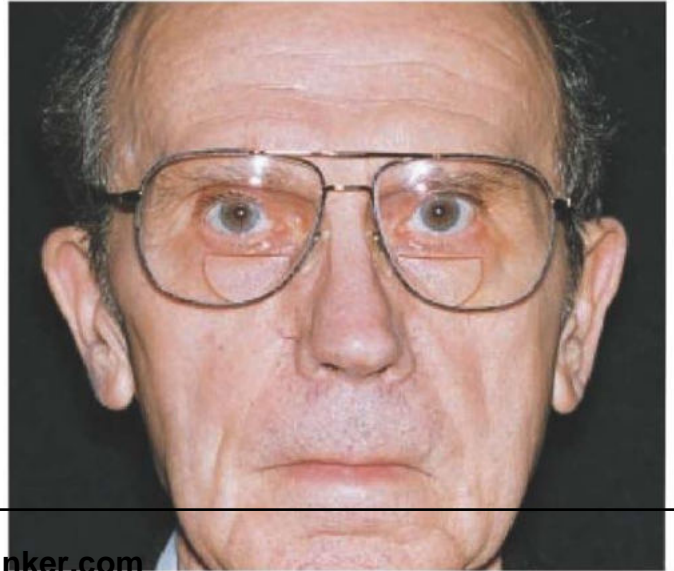
www.FirstRanker.com

- Seen in chronic liver disease (e.g.cirrhosis of liver)

- 1.shrunken eyes
- 2.hollowed temporal fossa
- 3.pinchd up nose with malar prominence
- 4.parched lips
- 5.muddy complexion of skin(due to pallor,jaundice and melanosis)
- 6.shallow and dry face
- 7.icteric tinge of conjunctiva



- Seen in parkinsonism
 1. infrequent blinking and staring look
 2. loss of facial expression
 3. widened palpebral fissure



Anaemia

- Definition-qualitative or quantitative diminution of RBC and/or Hb concentration in relation to standard age and sex.It is clinically manifested by pallor.
- sites:
 1. lower palpebral conjunctiva
 - 2.tongue (specially tip and dorsum)
 - 3.mucous membrane of soft palate
 - 4.nail beds
 - 5.palm,sole and general skin surface

*earliest anaemia is noticed in the soft palate

- Clinical classification: Mild Anaemia 9-12 gm/dl
moderate anaemia 6-9 gm/dl
severe anaemia <6 gm/dl

Normal Hb concentration in males and females:

Males-14.6 to 15.5 gm/dl

Females-13.3 to 14.6

Causes of pallor without anaemia

- Peripheral circulatory failure (e.g.-low cardiac output in acute LVF) or shock or vasoconstriction due to any cause.
- Acute myocardial infarction AMI
- Severe aortic stenosis or mitral stenosis AS / MS
- ✓ • Myxoedema
- ✓ • Nephrotic syndrome
- ✓ • Sheehan's syndrome or panhypopituitarism
- Vasovagal attack
- Oedematous skin (anasarca)
- ~~Thick skin (scleroderma)~~

Jaundice

- Definition: yellowish discolouration of the skin and mucous membrane due to excess amount of bilirubin present in blood.
- Sites to be examined:
 1. upper bulbar conjunctiva
 2. undersurface of tongue
 3. Mucous membrane of soft palate
 4. palm, sole
 5. General skin surface

~~*jaundice is always examined in bright natural daylight.~~

Clinical classification

- Classified as: 1. haemolytic ✓
2. hepato-cellular ✓
3. obstructive a) intrahepatic ✓
b) extrahepatic

- Normal serum bilirubin: 0.3-1.0 mg/dl
- Latent jaundice: 1.0-3.0 mg/dl
- Clinical jaundice: >3.0 mg/dl ✓
- Mild : <6 mg/dl
- Moderate: 6-15 mg/dl
- Severe: >15 mg/dl

Common causes of different types of jaundice

A.Haemolytic: 1.thalassemia

- 2.mismatched blood transfusion
- 3.Rh incompatibility
- 4.snake bite (viperidae group)
- 5.malaria(falciparum malaria)
- 6.primaquine induced (in G6PD deficiency)

B.hepatocellular: 1.viral hepatitis

2. drugs(rifampicin,INH,halothane,paracetamol overdose)
- 3.copper sulphate poisoning
- 4.acute fatty liver of pregnancy
- 5.cirrhosis of liver
- 6.weil's disease
- 7.Wilson's disease

- C. obstructive:

Intrahepatic cholestasis:

- 1.cholestatic viral hepatitis
- 2.chronic active hepatitis
- 3.cirrhosis of liver (specially primary biliary cirrhosis)
- 4.lymphoma or tuberculosis
- 5.drugs-chlorpromazine,chlorpropamide,ocp,steroid
- 6.pregnancy in last trimester
- 7.secondary carcinoma of liver
- 8.dubin Johnson syndrome

Extrahepatic cholestasis:

- 1.gall stone impaction in CBD
- 2.carcinoma of the head of the pancreas,periampullary CA
3. CA gallbladder
- 4.enlarged glands at porta hepatis
- 5.stricture of CBD
- 6.sclerosing cholangitis

CLUBBING

- **Definition**- bulbous swelling of the terminal part of the finger and the toes with an increase in the soft tissue mass, increased antero- posterior and transverse diameter of the nail due to proliferation of subungual connective tissue, interstitial edema and dilatation of arterioles and capillaries.

- **Examination of clubbing:**

1. observe onychodermal/lovibond angle(normal-160 degree).if the angle is more than 180 degree,clubbing is present ✓

2. check fluctuation of nail bed.it is increased in presence of clubbing due to softening of nail bed.(earliest sign) ✓

3. ~~window sign/schamroth sign-obliteration of diamond shaped area~~
formed between two nails and proximal nail folds.

Free of clubbing

- 1st degree: increased fluctuation of the nail bed with loss of onychodermal angle
- 2nd degree: above+increase in antero-posterior and transverse diameter of the nails. nails become smooth and glossy with loss of longitudinal ridges.
- 3rd degree: above+ increased pulp tissue
- 4th degree: above + wrist and ankle swelling due to hypertrophic osteoarthropathy

Causes of clubbing

- A) **C**ardiac causes: 1. cyanotic congenital heart disease (e.g.-fallot's tetralogy)
2. subacute bacterial endocarditis **SABE**
3. atrial myxoma
4. eisenmenger syndrome
5. primary pulmonary hypertension **Pulm H/T.**
- B) **L**ung and pleural cause: 1. bronchiectasis
2. lung abscess
3. bronchogenic CA
4. empyema thoracis
5. fibrosing alveolitis



6.pleural mesothelioma

7.pulmonary AV fistula

8.cystic fibrosis

C) **U**lcerative colitis ✓

D)**B**illiliary cirrhosis ✓

E)**I**ntestinal causes:1.malabsorption syndrome ✓

2.crohn's disease ✓

3.polyposis coli ✓

4.coeliac disease ✓

F) **N**ormal finding(idiopathic)

G) **G**enetic-familial

- **Definition**-bluish discolouration of the skin and mucous membrane due to presence of increased amount of reduced Hb ($>5\text{gm/dl}$) or haemoglobin derivatives (sulphaemoglobin, methaemoglobin) in the capillary blood.

• Types:

1. Peripheral cyanosis:

blood leaves the heart containing normal level of reduced Hb but due to its stagnation in the peripheral circulation allows more time for oxygen extraction by tissues so raising the reduced Hb.

distribution- ✓ a) tip of the nose

✓ b) ear lobules

✓ c) outer aspect of lip, chin, cheek

✓ d) tip of fingers and toes

e) nail bed of fingers and toes

*tongue is not a site for peripheral cyanosis ✓

- ✓ a) exposure to cold air or water
- ✓ b) congestive cardiac failure *CCF.*
- c) shock
- d) Raynaud's phenomenon ✓
- e) peripheral vascular disease (atherosclerosis, burger's disease)
- f) venous obstruction (SVC syndrome) ✓
- g) hyperviscosity syndrome (multiple myeloma, polycythemia)
- i) cryoglobulinemia
- j) mitral stenosis
- k) septicaemia



central cyanosis: blood leaving the heart containing reduced Hb.

FirstRanker's choice

www.FirstRanker.com

www.FirstRanker.com

distribution: a) tongue (mainly margin and undersurface)

b) inner aspect of lip ✓

c) mucous membrane of gum, soft palate, cheeks) ✓

d) lower palpebral conjunctiva ✓

e) all the sites of peripheral cyanosis ✓

causes: a) cyanotic congenital heart disease (fallot's tetralogy, TGA)

b) acute pulmonary edema due to left sided heart failure)

c) eisenmenger syndrome

d) acute severe asthma

e) COPD

f) lobar pneumonia

g) fibrosing alveolitis

h) tension pneumothorax

i) acute pulmonary thromboembolism

j) acute laryngeal edema

k) pulmonary AV fistula

l) high altitude

www.FirstRanker.com

Oedema

www.FirstRanker.com

www.FirstRanker.com

- **Definition**- accumulation of excessive amount of tissue fluid in the subcutaneous tissue/serous sac due to increase in interstitial component of extracellular fluid resulting in swelling of tissue.

- **Examination:**

1. lower limb-apply firm pressure for few seconds over the medial malleolus, above the medial malleolus, medial surface of lower end of tibia, upper part of shin bone by tip of thumb. inspect and palpate the area for any dimple or pitting.

ambulatory patients develop edema on dependent sites.

2. back-turn the patient into prone position and press the tip of right thumb over sacrum. It is helpful in chronic bed bound patient.

3. parietal edema- press the chest piece of stethoscope or tip of five fingers of right hand over abdominal parietis for few seconds.

Grades of edema

Grade 1-edema below ankle

Grade 2-edema below knees

Grade 3-edema of thighs

Grade 4-generalised edema

www.FirstRanker.com



Classification of edema

1. Pitting edema:

- a) congestive cardiac failure
- b) cirrhosis of liver
- c) nephrotic syndrome
- d) hypoproteinemia with severe anaemia
- e) pericardial effusion
- f) constrictive pericarditis
- g) drugs-amlodipine, corticosteroids, oestrogen
- h) venous obstruction
- i) beri beri

2. Non pitting edema:

- a) myxoedema
- b) lymphatic edema (eg-filariasis)
- c) angioneurotic edema
- d) scleredema (post streptococcal)
- e) scleroderma

Lymph nodes examination

www.FirstRanker.com

www.FirstRanker.com

- **General principles:**

- inspect for any visible lymphadenopathy
- palpate one side at a time
- compare the findings with contralateral side
- examine the cervical and axillary glands with the patient sitting
- examine the inguinal and popliteal glands with the patient in supine position.

In lymphadenopathy points to be noted:

- 1.site,size,number
- 2.Discrete or matted
- 3.Tenderness
- 4.consistency(e.g.-soft in cold abscess,rubbery in Hodgkin's lymphoma,firm in syphilis,hard in malignancy)
- 5.Surface
- 6.Mobility
- 7.Rise of local temperature
- 8.Skin changes(sinus,peau d'orange,inflammation)
- 9.Lymphangitis
- 10.Draining area(e.g.-in epitrochlear lymphadenopathy examine the hand)

www.FirstRanker.com

1.Generalised:

viral- EBV,CMV,HIV

Bacterial-brucellosis,syphilis

protozoal-toxoplasmosis

neoplastic-lymphoma,leukemia

others-RA,SLE,sarcoidosis

2.localised:

infective-most common

neoplastic-secondary metastasis,Hodgkin's lymphoma,non
Hodgkin's lymphoma

Submandibular glands:

a) from behind: examine the submental, submental, preauricular, tonsillar, supraclavicular, deep cervical, scalene nodes.

b) from the front: post auricular, occipital

Axillary glands: sit in front of the patient, supporting the arm of the patient on the side of examination. palpate the right axilla with the left hand and vice versa.

Apical, central, anterior group :examine from front, using opposite hand

Lateral group: examine from front, using same hand as the patient's

Posterior group :examine from back, using same hand

Epitrochlear glands: while supporting the patient's right wrist with the left hand, grasp the partially flexed elbow with the right hand and use the thumb to feel for the epitrochlear gland. e
Examine the left epitrochlear gland with the left thumb.

Inguinal glands: palpate horizontal chain just below the inguinal ligament
_____ and vertical chain along the saphenous veins. _____

Popliteal glands: use both hands to examine the popliteal fossa with the knee flexed to less than 45°

Pulse

- It is expansion and elongation of the arterial wall imparted by the column of blood and is passively produced by the pressure changes during ventricular systole and diastole.
 - **Points to note:**
 - 1.Rate
 - 2.rhythm
 - 3.volume
 - 4.condition of the arterial wall
 - 5.radio-radial delay
 - 6.radio-femoral delay
 - 7.any special character
 - ~~8.palpation of other peripheral pulses~~
-

- Examination:

* The radial pulse at the right wrist of the patient, present lateral to the flexor carpi radialis tendon, generally examined with the pulp of three fingers (index, middle, ring finger).

* Patient's forearm will be semipronated and the wrist slightly flexed.

* rate and rhythm are better palpated in the radial artery.

* volume and character better understood in carotid artery

1. Rate : normal 60-100/min

1. bradycardia HR < 60

causes: physiological: elderly (due to SA node degeneration)

sleep (due to decreased adrenergic drive)

athletes (increased vagal discharge)

pathological: bradyarrhythmia

inferior wall AMI

hypothyroidism

hypothermia

~~drugs (beta blockers, non DHP CCB, digoxin)~~

raised ICT (Cushing reflex)

obstructive jaundice

Relative bradycardia: heart rate does not increased in proportion to body temperature. it is also called faget's sign.

normally for every 1°C rise in temperature from baseline, HR increased by 15-20 /min.

for every 1°F rise, HR increased by 10/min

Causes:

infectious: typhoid

brucella

viral fever

legionella

non infectious: drug induced fever

factitious fever

fraudulent fever

- Tachycardia: HR >100/min

causes:physiological: infants

anxiety

exercise

pathological:tachyarrhythmia

anterior wall AMI

hyperthyroidism

fever,heperthermia,hyperpyrexia

drugs(beta agonist,DHP CCB,thyroxin overdose,theophylline)

2. **Rhythm**: normally there is fixed interval between two consecutive pulses, it is called regular rhythm.

- **Sinus arrhythmia**:

- pulse interval changes with respiration.
- It is predictable variation
- HR increases with inspiration, HR decreases with expiration

Irregular rhythm-commonly seen in AF

3. **volume**: it reflects the width of pulse pressure.

normal level = $(SBP - DBP) = (30 - 60) \text{ mm of Hg}$

a) low volume: called as thready pulse ($< 30 \text{ mm of Hg}$)

seen in shock (hypovolemic, cardiogenic)

b) high volume: called as bounding pulse ($> 60 \text{ mm of Hg}$)

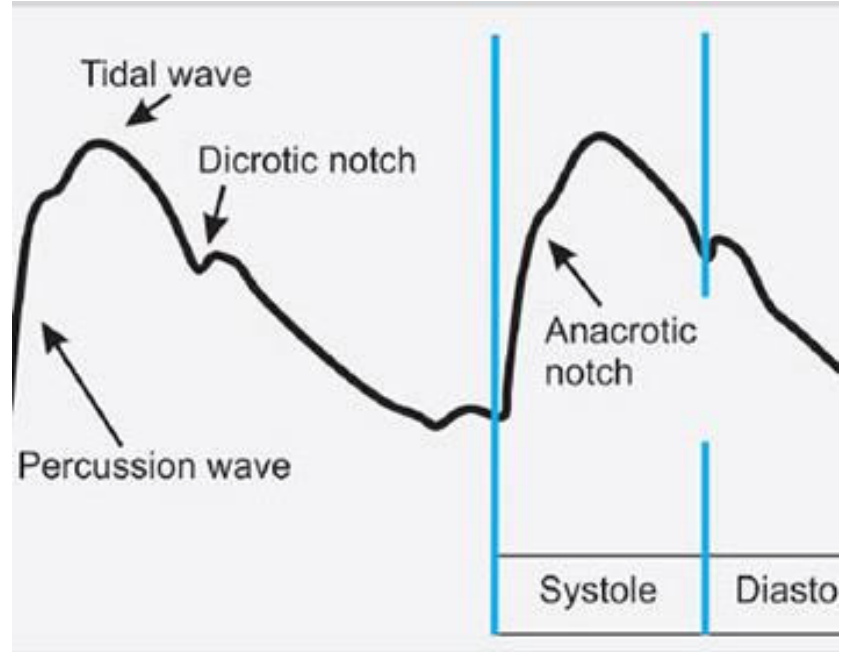
seen in AR, MR, PDA, Pregnancy, hyperthyroidism, anaemia, AV fistula, paget's disease, beri beri

Percussion wave- due to isovolumetric contraction

Anacrotic notch- due to opening of semilunar valves

Tidal wave- ejection phase, amplitude depends on cardiac output

Dicrotic notch- due to closure of semilunar valve



4.character:

a) **Anacrotic pulse**: low volume pulse with an upstroke felt in the ascending limb of pulse wave.

e.g.-severe valvular aortic stenosis.it is known as pulsus parvus et tardus(slow rising low volume pulse)

b) **Dicrotic pulse**: upstroke felt in the descending limb of the pulse wave.

e.g.-hypovolemic shock

c)**Pulsus bisferiens**: two peaks in systole.

e.g.-combined AR and AS

severe AR

d)**Pulsus alternans**: regular alteration of pulse amplitude at same interval.

e.g.- LVF

e)**Pulsus bigeminus**: two beats and a pause occur repeatedly in regular fashion.

e.g.-digitalis toxicity

f)**Pulsus paradoxus**: normally $(SBP_{exp} - SBP_{insp}) = 0$ to 10 mm of Hg

if this difference is >10 mm of Hg it is pulsus paradoxus.

mechanism: due to decrease in SBP_{insp} more than physiological limit.it occurs due to LV filling decreases during inspiratory phase more than physiological limit.

causes of pulsus paradoxus: cardiac tamponade

constrictive pericarditis

restrictive cardiomyopathy

acute severe asthma/COPD

pulmonary thromboembolism

SVC syndrome

www.FirstRanker.com

www.FirstRanker.com

g)Water hammer pulse: it is characterised by-high volume

sharp rise

ill sustained

sharp fall

cause: AR(most common)

PDA

systolic HTN

fever

pregnancy

anaemia

beri beri

~~thyrotoxicosis~~

AV fistula

paget's disease

www.FirstRanker.com

palpate the wrist in such a way that webs of palm fell on the radial artery and rest of the palm lies over the ulner artery.



Examine the volume of the pulse for few seconds.



Now elevate the whole upper limb suddenly above the level of the heart.



Try to recognise any changes in the volume of the pulse.

-radial delay: normal anatomical variation

thoracic inlet syndrome

aneurysm of the arch of aorta

pre-subclavian coarctation

supravalvular aortic stenosis

takayasu disease

6. Radio-femoral delay: coarctation of aorta

atherosclerosis of aorta

thrombosis or embolism of aorta

aortoarteritis

7. Other peripheral pulses: carotid artery

brachial artery

femoral artery

popliteal artery

posterior tibial artery

arteria dorsalis pedis

8. Condition of arterial wall: normally the arterial wall is impalpable and may be palpable in old age due to arteriosclerosis.

Temperature

- Normal: 98°F-99°F (with diurnal variation of 1°F)
- Subnormal: below 98°F
- Hypothermia: below 95°F
- Pyrexia/febrile: oral AM temperature >98.9°F, oral PM temperature >99.9°F
- Hyperpyrexia: above 106.7 °F

Types of fever

1. intermittent: fever is always present only for several hours and always touches the baseline sometime during the day. it has three sub division.

a) quotidian: daily rise and daily fall

-UTI

-TB

-septicaemia

-amoebic liver abscess

b) tertian: the paroxysm occurs on alternate days.

1. benign tertian malaria (P.vivax, P.ovale)

2. malignant tertian malaria (P.falciparum)

c) quartan: paroxysm of attack occurs at two days interval

www.FirstRanker.com

www.FirstRanker.com

e.g.-P. malariae

2.continued: fever does not fluctuate more than 1°C (1.5°F) during the 24 hours period. it never touches base line.

- a) lobar pneumonia
- b) second week of enteric fever
- c) miliary TB
- d) meningococcal meningitis
- e) ARF
- f) collagen vascular disease

3.remittent: daily fluctuation of fever is more than 2°C (3°F) during the 24 hours period. it never touches baseline.

- a) third week of enteric fever
- b) acute broncho pneumonia
- c) acute tonsillitis
- d) amoebic liver abscess

e) bacteraemia, septicaemia, pyemia

www.FirstRanker.com

Neck vein

- Examination:



- Always examine internal jugular vein. it is in direct continuity with the right atrium and reflects the pressure changes in the right atrium as well as CVP.
- The patient should be reclining supine at 45°
- Neck muscle should be relaxed properly
- Tangential light application is better to visualise the wave.
- It is better to examine right sided vein.
- Stand on the right side of the patient and turn patient's face slightly to the left.
- ~~Look in between two heads of sternocleidomastoid muscle, and if it seems full, observe uppermost point of distension.~~

- **Characteristics of venous pulsation:**

- 1.wavy
- 2.better seen than felt
- 3.becomes prominent on expiration,on lying down,on application of abdominal pressure(hepato jugular reflux)
- 4.can be abolished by gentle digital pressure applied above the clavicle.
- 5.it has definite upper level.
- 6.pulsatile displacement of ear lobes in high CVP
- 7.Becomes prominent on valsalva manoeuvre

a wave- produced due to effective and synchronised contraction of right atrium

c wave- isovolumetric contraction of right ventricle.

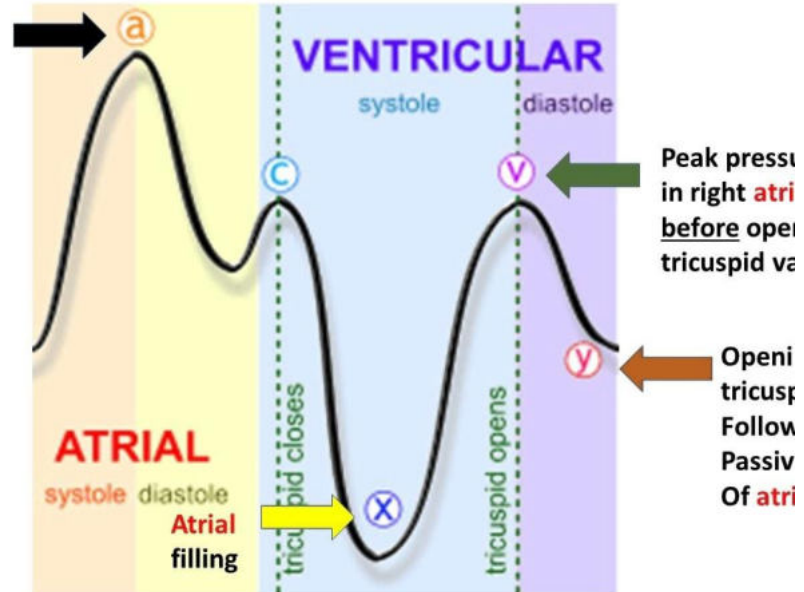
tricuspid valve bulge into the right atrium due to increased pressure.

x wave- ejection phase

v wave -due to venous return in right atrium.

isovolumetric relaxation also occurs here.

y wave- due to early filling phase of diastole.



causes of increased JVP:

www.FirstRanker.com

www.FirstRanker.com

Engorged and pulsatile: 1. congestive cardiac failure

2. chronic constrictive pericarditis

3. cardiac tamponade

4 TI and TS

5. restrictive cardiomyopathy

Engorged and non pulsatile: superior mediastinal syndrome

hepato jugular reflux: patient reclining at 45° → firm pressure is applied over right hypochondrium for 10 sec → sustained rise of $>3\text{cm}$ in JVP for at least 15 sec

importance: -to diagnose incipient right heart failure

-to differentiate between arterial and venous pulsation

-to differentiate between obstructive and non-obstructive causes of engorged neck vein.

www.FirstRanker.com

- **Waves of JVP:**

- Absent 'a' wave: in atrial fibrillation
- Large 'a' wave: TS, RVH, RVF
- Canon 'a' wave: SA node arrest, complete AV block
- Absent 'x' descent: TR, AF
- Deep 'x' descent: cardiac tamponade
constrictive pericarditis
restrictive cardiomyopathy

Absent/low 'v' wave: SVC obstruction

Large 'v' wave: constrictive pericarditis
restrictive cardiomyopathy
TR
AF

Rapid 'y' descent: constrictive pericarditis

Slow 'y' descent: TS, RVH, RVF

Absent 'y' descent: collapsed RV due to cardiac tamponade

- **Kussmaul sign:**

Normally JVP decreases during inspiration. but if JVP rises during inspiration due to failed relaxation of right atrium it is called kussmaul sign.

causes: constrictive pericarditis

restrictive cardiomyopathy

severe TS

RVF