Jugular Venous Pulse

By

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Learning Objectives

By the end of lecture student should be able to

• Define JVP
• Differentiate between carotid and jugular venous pulse
• Outline normal JVP
• Enlist abnormalities related to changes in JVP
Jugular Venous Pulse

Jugular Venous Pulse:
Defined as the oscillating top of vertical column of blood in right IJV that reflects pressure changes in Right Atrium in cardiac cycle.

Jugular Venous Pressure:
Vertical height of oscillating column of blood.
Right Jugular Vein

- Right jugular veins extend in almost straight line to superior vena cava
- Depicting direct transmission of the haemodynamic changes from the right atrium.
- The left jugular vein is not in a straight line
Difference from Carotid Pulse

VENOUS PULSE
- More lateral
- Wavy, Undulant
- Decrease with Inspiration
- Increase in supine position
- Increase with abdominal pressure
- Double Peaked
- Obliterated with Pressure
- Better Visible—Better viewed from foot end of bed

CAROTID PULSE
- Medial
- Forceful, Brisk
- No change
- No change
- No change
- Single Peak
- Cannot be Obliterated
- Better palpated
Method Of Examination

• The patient should lie comfortably during the examination.
• Clothing should be removed from the neck and upper thorax.
• Patient reclining with head elevated 45 °
• Neck should not be sharply flexed.
• Examined effectively by shining a light tangentially across the neck.
• There should not be any tight bands around abdomen
a – atrial contraction
x – atrial relaxation
c – bulging of tricuspid valve with ventricular contraction
x’ – downward movement of tricuspid valve with ventricular contraction
v – passive atrial filling
y – atrial emptying with opening of the tricuspid valve

a-c-v waves
x-y descents
Abdomino-jugular reflux

• Is positive when JVP increase after 10 sec of abdominal pressure followed by a rapid drop in pressure of 4 cm on release of compression.
• Most common cause of a positive test is RHF
• Positive test in: Borderline elevation of JVP
Clinical Abnormalities:

‘a’ wave:

- Prominent:
  1. RV hypertrophy (resist of filling)
  2. Pulmonary stenosis.
  3. Pulmonary hypertension.
  4. Tricuspid stenosis.
- Absence: Atrial fibrillation, TR.
- Cannon wave: Complete AV block, atrial flutter, ventricular extrasystole.

‘c’ wave: Prominent in TR; absent in constrictive pericarditis.

‘v’ wave: Prominent in constrictive pericarditis
Clinical Abnormalities:

A. Low jugular venous pressure
   1. Hypovolaemia.

B. Elevated jugular venous pressure
   1. Intravascular volume overload conditions
      Right ventricular infarction
      Left heart failure
      Myocardial infarction.
      Valvular Heart Disease
      Cardiomyopathy
   2. Constrictive pericarditis.
   3. Pericardial effusion with tamponade
Clinical Abnormalities:

Prominent “x” descent
1. Cardiac tamponade.
2. Constrictive Pericarditis
3. RVMI
4. Restrictive Cardiomyopathy
5. Atrial septal defect

Blunted “x” descent
1. Tricuspid regurgitation.
2. Right atrial ischemia
Clinical Abnormalities:

Prominent “y” descent
1. Constrictive pericarditis.
2. Tricuspid regurgitation.
3. Atrial septal defect.

Absent “y” descent
1. Cardiac tamponade.
2. Right ventricular infarction
3. Restrictive Cardiomyopathy

Slow “y” descent
1. Tricuspid stenosis.
2. Right atrial myxoma.
Thank you