**CLET 3757 Visceral Diagnosis**

**Physical Examination Procedures**

**Palpation of Arterial Pulses**

Feel for the following arterial pulses:

|  |
| --- |
| * Carotid: In the neck, just lateral to below thyroid cartilage at the level of C3.
* **Do not palpate both CAROTID ARTERIES at same time.**
 |
| * Subclavian: At base of neck, mid clavicular.
 |
| * Brachial: Just medial to biceps tendon.
 |
| * Radial: Lateral and ventral side of wrist.
 |
| * Ulnar: Medial and ventral side of wrist.
 |
| * Abdominal Aorta: One inch superior and one inch lateral to left of the umbilicus.
 |
| * Femoral: Inferior and medial to the inguinal ligament.
 |
| * Popliteal: Press firmly in popliteal fossa.
 |
| * Dorsalis pedis: Medial dorsum of the foot.
 |
| * Posterior Tibialis: Behind medial malleolus.
 |

1. Rate
2. In clinical practice evaluate pulsations per 60 seconds on the practical assess for 2 cardiac cycles
3. State that the resting pulse rate for a normal adult should be between 60 to 90 pulsations per minute (p/m)
4. Pulse rate >90p/m = tachycardia and < 60 p/m is bradycardia ( do not need to state on the practical, but must know for lecture)
5. Rhythm
6. State that there should be a regular heart pattern.
7. An irregular heart pattern, may indicate sinus arrhythmia.
8. Amplitude
9. Height or intensity of the pulse.
10. Measured using the following scale ( do not need to state the scale on the practical, but must know for lecture)
* 4 = bounding
* 3 = full
* 2 = expected
* 1 = diminished
* 0 = absent
1. Contour
2. Description of the pulse wave in a healthy artery.
3. Should be either rounded, smooth or domed shaped.

**Palpation of Lymph nodes (size; consistency; mobility; condition)**

* + Occipital nodes at the base of the skull
	+ Postauricular nodes located superficially over the mastoid process
	+ Preauricular nodes located in front of the ear
	+ Tonsillar nodes at the angle of the mandible
	+ Submandibular nodes halfway between the angle and the tip of the mandible
	+ Submental nodes in the midline behind the tip of the mandible.
	+ Facial nodes located in the maxillary region
	+ Anterior cervical chain nodes at the anterior border of the SCM
	+ Posterior cervical chain nodes along the posterior border of the SCM
	+ Supraclavicular nodes located just above the clavicle

 Must state on the practical

* + The lymph nodes are normally present but are not felt. Infection within lymph nodes are soft, tender and easily moveable.
	+ Cancer within lymph nodes are hard, non-tender and non-moveable

**Auscultation of Vessels for bruits**

* Use the bell of the stethoscope and ask the patient to hold their breath.
* Must state that bruits are low-pitched unexpected sounds if you hear a bruit it may indicate local obstruction or vigorous blood flow.
* Listen over the following area:
* Temporal
* Carotid
* Subclavian
* Abdominal aorta
* Femoral

**Auscultation of Vessels for venous hum**

* Use the bell of the stethoscope and ask the patient to hold their breath. The head should be turned to one side and titled slightly upward.
* When present it is a low-pitched continuous sound that is louder during diastole.
* Common in children and usually has no pathologic significance. It is caused by turbulent of blood flow in the internal jugular veins.
* In adults it usually occurs with: (need to state at least 2 on the practical)
* Anemia
* Pregnancy
* Thyrotoxicosis
* Intracranial arteriovenous malformation
* Listen over the following areas:
* Epigastrum - Area is located in the soft tissue just below the xiphoid process
* Base of neck
* Auscultate over the supraclavicular space at the medial end of the clavicle and along the anterior border of the SCM.

**Palpation of the Chest Wall**

Anterior

Patient supine – ALL of chest wall on male – exclude breast area on female

1. Pain
2. Tenderness
3. Masses
4. Sensations

Posterior

1. Pain
2. Tenderness
3. Masses
4. Sensations

No need to state the indications for palpation of the chest wall on the practical.

**Auscultation of the lung fields (posterior or anterior)**

* Patient is seated
* Patient should breathe through their mouth
* Helps accentuate breath sounds each time they are touched with stethoscope.
* Have the patient cross and lift arms (to listen to the triangles of auscultation)
* Check for normal and abnormal breath sounds. If abnormal sounds are heard ask patient to clear lungs by coughing.
* Posterior: Auscultate the 10 primary areas (5 on each side)

1,2 Apices of lungs ( 3 locations along the apices)

3,4 Interscapular area (arms crossed -2 locations)

5,6 Triangle of Auscultation (arms crossed and elevated- one location)

7,8 Medial base of lungs ( 2 locations)

9,10 Lateral axillary area ( 2 locations)

* Anterior: Auscultate the 8 primary areas (4 on each side)

1,2 Above the clavicles (one location)

3,4 Just above the breasts (one location)

5,6 Just below the breasts medially (one location)

7,8 Just below the breasts laterally (one location)

**On the practical you need to state that you are listening for:**

Characteristics of lung sounds:

* + - Pitch: Quality of tone or sound.
		- Intensity: The strength or depth of a sound.
		- Duration: The length or continuance of a sound

Normal breath sounds:

* + - Vesicular:
		- Bronchovesicular
		- Bronchial

If a crack, wheeze or rub is present this indicates an adventitious sound is present.

**Tactile Fremitus**

* + Transmission of the spoken word through the lung and soft tissue being felt by the ball of the hand (most sensitive to fremitus).
	+ Using the ball of the hand have patient say a resonance sound (such as blue moon, toy boat, etc.) each time you touch the patient’s thorax.
	+ Check for symmetry of vibration in the following areas:

1,2 Apices of lungs

3,4 Interscapular area (arms crossed, avoid Tp’s)

 5,6 Triangle of auscultation (arms crossed and elevated)

7,8 Medial base of lungs (Dr. should use ulnar surface of the hands)

9,10 Lateral base of lungs (Dr. should use ulnar surface of the hands)

* + Decreased or absent fremitus: (need to state at least 2 conditions)
		- Air in the lungs
			* Emphysema
			* Pleural thickening or effusion
			* Massive pulmonary edema
			* Bronchial obstruction
	+ Increased fremitus: (need to state at least 2 conditions)
		- Often coarser or rougher in feel
		- Fluids or a solid mass within the lungs
			* Lung consolidation
			* Heavy but non-obstructive bronchial secretions
			* Compressed lung or tumor

**Percussion of the lung field**

* Patient seated
* Must have patient move the scapulae out of the way
* Percussion note will transmit into tissue to determine density. Depress as much soft tissue as possible.
* **Posterior:** Percuss the 10 primary areas (5 on each side)

1,2 Apices of lungs ( 3 locations along the apices)

3,4 Interscapular area (arms crossed -2 locations)

5,6 Triangle of Auscultation (arms crossed and elevated- one location)

7,8 Medial base of lungs ( 2 locations)

9,10 Lateral axillary area ( 2 locations)

* **Anterior:** Percuss the 8 primary areas (4 on each side)

1,2 Above the clavicles (3 locations locations)

3,4 Just above the breasts (2 intercostal spaces)

5,6 Just below the breasts medially (2 intercostal spaces)

7,8 Just below the breasts laterally (2 intercostal spaces)

**Need to state on the practical**:

Normal percussive sound is resonant

* + Hyper-resonance indicates air in the lung

(need to state 2 conditions on the practical)

* + - * Emphysema
			* Pleural thickening or effusion
			* Massive pulmonary edema
			* Bronchial obstruction
	+ Dullness or a flat sound indicates

(need to state 2 conditions on the practical)

* + - Fluids or a solid mass within the lungs
			* Lung consolidation
			* Heavy but non-obstructive bronchial secretions

Compressed lung or tumor

**Diaphragmatic Excursion:**

* + Ask patient to breathe deeply and hold.
	+ Percuss along the scapular line until a change in note from resonance to dullness is heard. This is the lower border of the diaphragm. (Breathe in allows the diaphragm to move down)
	+ Mark the point with a skin pencil at the scapular line.
	+ Allow the patient to breathe and then repeat the procedure on the other side.
	+ Ask the patient to take several breaths and then to exhale as much as possible and hold.
	+ Percuss up from marked point and make a mark at the change from dullness to resonance, bilateral.
	+ Remind the patient to start breathing. Measure and record the distance in centimeters between the marks on each side. Right side marks will be slightly higher due to the liver mass.

**On the practical examination you need to state the normal distance and at least 2 reasons why the excursion would be limited.**

Diaphragmatic excursion distance is usually 3 to 5 cm*.*

* + Excursion limited by:
		- Several types of lesions
			* Pulmonary (emphysema)
			* Abdominal (massive ascites)
			* Superficial painful (fractured rib).
			* Lesion of the C3-C5 spinal nerves or the phrenic nerve.

**Respiratory Excursion ( T8 to T10 area posterior)**

* + Take a tissue pull with the ball of the hand from axillary to mid-line and use thumbs as markers.
	+ Place thumbs along spinal processes at the level of 10th rib with palms lightly in contact with the posterolateral surface.
	+ Watch thumbs diverge during quiet and deep breathing.
	+ Ask patient to take a deep breath in and out through their mouth. Watch for symmetry of movement bilaterally.
	+ Repeat this process 3 times.
	+ Lag indicates an underlying lung problem on that side.

**Vocal resonance**

(The doctor has the patient recite words)

* + Using the diaphragm of the stethoscope and listening at **all the locations** on the thoracic cage for auscultation (See Auscultation of the lung field)
	+ Patient recites certain words or phrases, in a deep & resonant manner.
	+ Typical phrases, such as: “toy boat”, “blue moon”, etc...
		- Bronchophony:
			* Normal is to hear muffled words
			* In pathology of consolidation the doctor can hear the patient’s words clearly through the stethoscope, while the patient speaks in a normal conversational tone and volume
		- Whispered Pectoriloquy
			* Normal is to hear the words faintly(if at all)
			* In pathology of lung consolidation the doctor can hear the patient’s words clearly through the stethoscope, while the patient speaks in whispers.
		- Egophony
			* Normal is to hear a muffled “E”
			* The patient speaks in a normal conversational tone and volume, and when they say the letter “E”
			* In pathology of lung consolidation the letter “E” sounds like the letter “A” through the stethoscope.

**Test for Costochondritis**

* + If patient complains of chest pain, use a knife-edge hand (hypothenar) and apply pressure over the costo-chrondal junction bilaterally at the same time.
	+ Checking for tenderness or any inflammation of the costochrondral junction.
	+ Other possible causes are rib or intercostal muscle strain or an anterior vertebra

**Test for Rib Fractures**

* + Use a knife-edge hand and depress the sternum. There should be no pain with this test, if the patient describes pain that should radiate from the site this could indicate a rib fracture.
	+ A 128 Hz tuning fork can also be used on the side of the suspected fractured rib

**Evaluate the heart for pulsations**

* check (A.P.E.T.M.E.) Areas for pulsations (using your finger pads)
* Use gentle touch and let the movements rise to your fingers, because sensations will decrease as you increase pressure.
* Accentuated, diminished or absent pulsations could indicate an underlying cardiac involvement.
	+ Aortic
	+ Pulmonic
	+ Erb’s point
	+ Tricuspid
	+ Mitral

 While at this location - Check for an Apical impulse to include:

 location

 amplitude

* + epigastric pulsations:

 pulsations coming from superior to inferior to the finger pads

 May indicate: right ventricular enlargement

pulsations coming inferior to superior (actually P-A) to the finger pads

 May indicate: abdominal aortic aneurysm

**Evaluate the heart for thrills**

 A.P.E.T.M.E. Areas for thrills (using the ball of your hand)

Thrills: turbulent blood flow, causing palpable vibrations

* + Aortic
	+ Pulmonic
	+ Erb’s point
	+ Tricuspid
	+ Mitral
	+ Thrills are best felt through bone

Must state on the practical

* + A thrill is a fine, palpable, rushing vibration resulting from:

Conditions: (need to state at least 2 conditions)

* + - Aortic stenosis
		- Mitral stenosis
		- Patient ductus
		- Arteriosclerosis
		- Ventricular septal defect.

Indications:

This indicates a Grade III or better murmur.

**Percussion of the border of the heart**

1. Identify the location and size of the heart
2. Percuss from lateral to medial
	* The left 3rd, 4th, and 5th intercostal spaces (males) - Make 3 vertical marks
	* The left 3rd and 5th intercostal spaces (females) - Make 2 vertical marks
	* Shifting of the left border of the heart could indicate:
		+ Left ventricular hypertrophy
		+ Pericardial effusion
3. Percuss down the right sternal border
	* Dullness is heard at the 6th intercostal space indicating the superior border of the liver.
	* Make 1 horizontal mark (males and females)
	* Normally no dullness until the 6th intercostal space
	* If dullness is heard superior to the 6th ICS this could indicate:
		+ Right atrial enlargement
		+ Pericardial effusion

**Check apical impulse for amplitude and location**

* + The visible, palpable, pushing force against the chest caused by left ventricular contractions.
	+ Usually synchronous with the carotid pulse and the first heart sound.
	+ Amplitude is usually small and feels like a tapping sensation.
	+ Appears near the apex of the heart, its location is often a clue to cardiac size.
	+ It should be visible at the 5th left ICS about 7-9 cm from the midsternal line and can be easily obscured by obesity, large breasts and great muscularity.

Must state on the practical

* + Normal size of 2.5 cm and usually only occupies one interspace.
	+ Absence indicates
		- Intervening extracardiac problem
		- Pleural or pericardial fluid
	+ Forceful and widely distributed, fills systole, or is displaced laterally and downward:
		- Increased cardiac output
		- Left ventricular hypertrophy.
	+ A lift along the left sternal border:
		- May be caused by right ventricular hypertrophy.
	+ Displaced upward and to the left:
		- Possibly due to pregnancy or a high left diaphragm.

**Evaluate the first heart sound (S1) and evaluate for splitting (diaphragm)**

* + Not usually heard. If occurring it may be heard in the mitral area on deep inspiration.
	+ Accentuated
		- Tachycardia
		- High cardiac output states {exercise, anemia, hyperthyroidism}.
	+ Diminished
		- Bradycardia and first degree heart block {delayed conditions from atria to ventricles).

**Evaluate the second heart sound (S2) and evaluate for splitting(diaphragm)**

* + An expected event (physiological) which is greatest at the peak of inspiration
	+ Accentuated
		- Tachycardia
		- High cardiac output states (exercise, anemia, hyperthyroidism).
	+ Diminished
		- Bradycardia and first degree heart block (delayed conditions from atria to ventricles).

**HEART ASCULTATION**

**Ascultate for High Pitched Sounds**

Ascultate using the **diaphragm** of the stethoscope with firm pressure

**Aortic**: Right side at 2nd ICS at the right sternal border

**Pulmonic**: Left side at 2nd ICS at the left sternal border

 S2 is best heard at this location

 Listen for accentuated, diminished or splitting of sounds

**Erb’s Point**: Left side 3rd ICS at the left sternal border

 Listen for general cardiac sounds

**Tricuspid**: Left side 4th ICS at the left sternal border

 Listen for general cardiac sounds

**Mitral**: Left side 5th ICS, mid-clavicular line

 S1 is best heard at this location

 Listen for accentuated, diminished or splitting of sounds

 At the Mitral area use the diaphragm and ascultate **for** **S1** while palpating the carotid pulse to see if **they are** paired. Have the patient take in a deep breath, exhale, and hold while you assess for paring.

**Epigastric**: Soft tissue inferior to tip of xyphoid process

 Listen for the presence of high pitched sounds

**Ascultate for Lower Pitched Sounds**

Ascultate using the **bell** of the stethoscope with light pressure

**Aortic**: Right side at 2nd ICS at the right sternal border

**Pulmonic**: Left side at 2nd ICS at the left sternal border

 Listen for accentuated, diminished or splitting of sounds

**Erb’s Point**: Left side 3rd ICS at the left sternal border

 Listen for general cardiac sounds

**Tricuspid**: Left side 4th ICS at the left sternal border

 Listen for general cardiac sounds

**Mitral**: Left side 5th ICS, mid-clavicular line

 Listen for accentuated, diminished or splitting of sounds

 **Epigastric**: Soft tissue inferior to tip of xyphoid process

 Have the patient take a deep breath in and hold it. Listen for the presence of any lower pitched sounds (bruits).

**SPECIAL CARDIAC MANEUVERS**

1. **Special Maneuver for mitral murmurs**
	* Patient in left lateral recumbent position
	* Use ***bell*** (low pitched murmurs) at apical impulse area
	* Ask patient to take in a deep breath and hold.
2. **Special Maneuver for aortic murmurs**
	* Patient in seated position
	* Listen at the left sternal border (Erb’s point) for best heard heart sounds using the ***diaphragm*** (high pitched murmurs).
	* Ask patient to take a deep breath in and lean forward while exhaling all the air.

**Auscultation of Abdomen for bowel sounds**

* + Place diaphragm of stethoscope for 15 seconds ( 3 areas 5 second each) in each of the 4 quadrants (one minute total) and hold it in place with very light pressure.
	+ Listen for bowel sounds and note their frequency and character.
	+ Usually heard as clicks and gurgles that occur irregularly and range from 5 to 35 per min.
	+ Auscultate to listen to bowel motility and discover vascular sounds.
		- Hyperactive: Possible diarrhea (36 and higher per minute).
		- Normoactive: Normal (5 to 35 per minute).
		- Hypoactive: Constipation (1 to 4 per minute).
		- Absent: Obstruction w/ possible blockage. Medical emergency (ZERO sounds for 5 min.).

**Friction Rubs over the Liver and Spleen (*Diaphragm*)**

* + A high pitched sound associated with respiration (have patient take 3 deep breaths).
	+ If present will produce a sandpaper rubbing sound.
	+ Inflammation of peritoneal surface of an organ from infection or tumors.
		- Liver: Between the 6th and 10th ICS midclavicular line on right.
		- Spleen: Between the 6th and 10th ICS midaxillary line on left.

**Ascultate the vessels of the abdomen (*Bell*)**

* + Bruits are low-pitched unexpected sounds that may indicate local obstruction or vigorous blood flow.
	+ Aorta: One inch above and one inch to left of umbilicus.
	+ Renals: Two inches above and two inches lateral from umbilicus. Bilateral.
	+ Common Iliacs: Two inches down and two inches lateral from umbilicus. Bilateral.

**Epigastric Region for Venous Hums (*Bell*)**

* + Place the bell of the stethoscope below the tip of the xiphoid process and ask the patient to hold their breath.
	+ Common in children and it usually has no pathologic significance.
	+ When present it is a low-pitched continuous sound that is louder during diastole.
	+ When found in adults it usually occurs with:

(need to state at least 2 conditions on the practical)

* + - Anemia
		- Pregancy
		- Thyrotoxicosis
		- Intracranial arteriovenous malformation.

**Percuss for Liver Size and mark (2 marks)**

* + Begin liver percussion at the right midclavicular line over an area of tympany. [Always begin with an area of tympany and proceed to an area of dullness, because that sound change is easier to detect than the change from dullness to tympany].
	+ Continue downward until the percussion tone changes to one of dullness, which is the upper border of the liver and mark.
	+ The upper border usually begins at the 5th to 7th intercostal spaces. An upper border below this may indicate downward displacement or liver atrophy.
	+ Percuss upward along the midclavicular line to determine the lower border of the liver and mark.
	+ The lower border is usually at the costal margin or slightly below it.

Need to state the following on the practical

* + A lower liver border that is more than 2 to 3 cm (3/4 to 1 in.) below the costal margin may indicate organ enlargement or downward displacement of the diaphragm because of emphysema or other pulmonary disease.
	+ The usual span of the liver is approximately 6 to 12 cm (21/2 to 4 1/2 in.).
	+ A span greater than this may indicate liver enlargement
	+ A lesser span suggests atrophy.

**Palpation of the abdomen**

* Is used to assess the organs of the abdominal cavity and to detect muscle spasm, masses, fluid, and area of tenderness.
* The abdominal organs are evaluated for size, shape, mobility, consistency, and tension.
* Palpating for pain, tenderness, masses, muscle guarding (need to state this on the practical)

**Light Palpation in all (4) quadrants for:**

* + No more than 1cm depth. Skin should feel smooth with consistent softness.

**Deep Palpation in all (4) quadrants for:**

 (place the knees of the patient into flexion to relax the abdominal muscles).

* + Use palmar surface of extended fingers, pressing deeply and evenly into the abdominal wall.
	+ Palpate all four quadrants, moving the fingers back and forth over the abdominal contents.
	+ Palpate about 1 ½ to 2 inches deep or deeper if patient is obese. Tenderness not elicited with light or moderate palpation may become evident.
	+ Deep pressure may also evoke tenderness in the healthy person over the cecum, sigmoid colon, aorta and in the midline near the xiphoid process.

**Distinguish if mass is superficial or deep**

* + - Have patient do a half sit-up or leg raise with both feet several inches off the table.
		- A superficial mass it will still be palpable or visible (superficial to abdominal muscles).
		- A deep mass it will not be palpable or visible because the abdominal muscles will obscure the mass.

**Palpate for the liver (feel for the liver’s edge)**

* + **Standard Maneuver**
		- Doctor places their left hand under the patient at the 11th and 12th ribs pulling posterior-anterior and superior to elevate the liver toward the abdominal wall.
		- Place your right hand on the abdomen, fingers pointing toward the head and extended so the tips rest on the right midclavicular line below the level of liver dullness.
		- Have the patient breath normally a few times and then take a deep breath and hold. As the patient exhales push fingers gently but deeply in and up. Try to feel the liver edge as the diaphragm pushes it down to meet your fingertips.
	+ **Middleton’s Manuever**
		- Have patient place their fist under ribs 11 and 12 on the right side.
		- Place your right hand on the abdomen, fingers pointing toward the head and extended so the tips rest on the right midclavicular line below the level of liver dullness.
		- Use same breathing instructions as above.
	+ **Hooking Maneuver**
		- Hook your fingers over the right costal margin below the border of liver dullness.
		- Stand on the patient’s right side facing his or her feet.
		- Press in and up toward the costal margin with your fingers.
		- Use same breathing instructions as above.

Need to state the following on the practical for Standard, Middleton’s or Hooking Maneuver

* + Usually not palpable. If the edge is felt it should be smooth, even and nontender.
	+ If you feel nodules, tenderness and irregularity, this could indicate infection or tumor
	+ If the patient experiences pain and abruptly stops inspiration (reflex apnea, inspiratory arrest) upon application of any one of the three Feeling Liver Edge tests, or in palpation of the gallbladder.

 Cause: Inflamed gallbladder (aka cholecystitis).

**Palpation of the spleen**

* + While standing on the patient’s right side, reach across with your left hand and place it beneath the patient under the left costovertebral angle.
	+ Pull posterior-anterior to lift the spleen toward the abdominal wall.
	+ Place the palmar surface of your right hand with fingers extended on the patient’s abdomen below the left costal margin.
	+ Press your fingertips anterior-posterior toward the spleen as you ask the patient to take a deep breath and hold.

Need to state on the practical

* + Try to feel the edge of the spleen as it moves downward toward your fingers.
	+ You should not be able to feel the spleen if you do or if it is tender it could indicate enlargement (usually due to infection)

**Kidney Entrapment**

* + On the right side, place one hand under the patient’s right flank and the other hand at the right costal margin.
	+ Ask the patient to take a deep breath. At the height of inspiration, press the fingers of your two hands together to capture the kidney between the fingers.
	+ Ask the patient to breathe out and hold the exhalation while you slowly release your fingers.
	+ If you have entrapped the kidney you may feel it slip beneath your fingers.
	+ Same procedures for the left kidney except doctor moves to the left side of patient.
	+ If the patient experiences pain during this procedure it could indicate nephritis.

**Palpation of the Urinary bladder**

* + Using finger pads palpate in the suprapubic region.
	+ The bladder should not be felt unless it is distended.
	+ If distended it will feel like a smooth, round and tense.
	+ If the bladder is distended and the patient has already voided their bladder and does not feel the sensation to void again this could indicate a neurotrophic bladder or mass in the bladder.

**Rebound Tenderness assessing for:**

* + Blumberg’s Sign
		- This is a maneuver to access all four quadrants.
		- Patient supine, hold your hand at a 900 angle to patient’s abdomen with the fingers extended. Press gently and deeply into the abdomen region. Rapidly withdraw your hand and fingers.
		- The return to position (rebound) of the structures which were compressed by your fingers causes a sharp stabbing pain at the site of a problem.
		- Indicates: peritonitis.
	+ Rovsing Sign
		- Rebound tenderness test in the lower left quadrant and the patient has pain over McBurney’s point (lower right quadrant, from the umbilicus to 2/3rd toward the ASIS).
		- Indicates: appendicitis.

**Tests for Ascites**

* + Fluid Wave
		- This procedure requires three hands, so the patient will have to help the examiner.
		- Patient supine, ask them to press the edge of their hand and forearm firmly along the vertical midline of the abdomen. This position helps stop transmission of a wave through adipose tissue.
		- Place your hands on each side of the abdomen and strike one side sharply with your fingertips or perform a deep rebound tenderness test.
		- Feel for the impulse of a fluid wave with the fingertips of your other hand.
		- An easily detected fluid wave suggests as ascites, (however the maneuver is not conclusive), which can indicate underlying liver pathology.
		- A fluid wave can sometimes be felt in people without ascites and may not occur in people with early ascites.

**Psoas Sign**

|  |  |
| --- | --- |
| Instruct: | Patient supine. Examiner places superior hand on right iliac crest and inferior hand on patient’s right thigh. Instruct patient to raise straight leg on the right side against resistance.  |
| Positive: | Increased pain over McBurney’s point |
| Indicates: | Appendicitis |

**Obturator Sign**

|  |  |
| --- | --- |
| Instruct: | Patient supine. Instruct patient to flex their hip to 90 degrees and their knee to 90 degrees. Examiner places superior hand on patient’s right knee and inferior hand around patient’s right ankle. Patient internally and externally **rotates** ( not abduction or adduction) their right hip against resistance, given by the examiner. |
| Positive: | Increased pain over McBurney’s point |
| Indicates: | Ruptured appendix or pelvic abscess  |

**Murphy’s Punch**

* + Place palm of your hand over the right posterior costovertebral angle (Region should be from T10 to T12) and strike your hand with the ulnar surface or the fist of your other hand.
	+ Repeat this maneuver over the left costrovertebral angle.
	+ The patient should perceive the blow as a thud, but it should not cause tenderness or pain.
	+ Pain indicates: inflamed kidney (nephritis) due to a variety of disorders (kidney stones, infection, etc.)