

ABDOMEN EXAM DETAILS FROM ABDOMEN VIDEO

Preliminaries to the abdominal exam:

- Patient should be supine for the abdomen exam.
- Pull out the ledge for the patient's legs.
- Make sure the patient is appropriately draped. Let the patient lift up his/her gown to expose the abdomen. Drape the sheet across the pelvis.
- Patient's arms should be at his/her sides, NOT above his/her head.
- Examiner should be on patient's right side. This is the classic position for the abdomen exam.
- Make sure the exam room door is closed.
- Exam should be done on skin and not over the gown or an article of clothing.
- Always inform the patient of what you are going to do before you do it.

WASH HANDS

1. Identify and locate the costal margin

The costal margin is made of the cartilaginous border of ribs: 7 – 10 anteriorly.

2. Identify and locate the xiphoid process

The xiphoid process is a midline finger-like projection from the most inferior part of the body of the sternum.

3. Identify and locate the midline which is overlying the linea alba

Linea alba runs from the xiphoid process inferiorly to the symphysis pubis.

4. Identify and locate the rectus abdominis muscle

Student may ask patient to raise their head and shoulders from the supine position. These muscles run about 7-10 cm lateral to and parallel to the linea alba. The lateral border of the rectus abdominis muscle is known as the linea semilunaris. The rectus abdominis muscle arises from the pubic crest and inserts onto the anterior surface of ribs 5-7 and the xiphoid process.

5. Identify and locate the umbilicus

Normally at about L3 to L5. Granted, the umbilicus' position depends on patient's weight, size, etc.

6. Identify and locate the symphysis pubis

The symphysis pubis is a cartilaginous joint in the midline where the 2 pubic bones articulate.

7. Identify and locate the pubic tubercle

The pubic tubercle is a bony prominence, which may or may not be palpable on the pubic bone. The pubic tubercle is about one inch lateral to the midline. Moving from medial to lateral, you have the symphysis pubis, pubic crest, and then pubic tubercle.

8. Identify and locate the anterior superior iliac spine

This is the most anterior part of the iliac crest. It is usually prominent and palpable.

9. Identify and locate the iliac crest

The iliac crest is the superior edge of the wing-like portion of the ilium bone. Anteriorly the iliac crest ends in the anterior superior iliac spine. Posteriorly, the iliac crest ends as the posterior superior iliac spine.

10. Identify and locate the surface markings of the four abdominal quadrants (RUQ, LUQ, RLQ, LLQ)

The four quadrants of the abdomen are defined by a vertical line running through the umbilicus and a horizontal line running through the umbilicus. Remember, “right” and “left” are defined as the patient’s “right” and “left.”

11. Identify and locate the inguinal ligament

The inguinal ligament extends from the pubic tubercle to the anterior superior iliac spine. The inguinal ligament separates the abdomen above from the thigh below. The inguinal canal lies above the inguinal ligament and is about 4 cm long.

12. Palpate for horizontal and vertical superficial inguinal lymph nodes

The horizontal superficial inguinal lymph nodes are INFERIOR to the inguinal ligament. These drain the superficial portions of the lower abdomen and buttock, the external genitalia (but not the testes) the anal canal, the perineal area, and the lower vagina.

The vertical superficial inguinal lymph nodes cluster near the upper part of the saphenous vein. The student palpates medial and parallel to the femoral artery below the inguinal ligament. These lymph nodes drain the distal leg.

13. Identify and locate the abdominal aorta

The abdominal aorta begins as a direct continuation of the thoracic aorta at the level of T12 to L1 where the thoracic aorta passes through the diaphragm at the aortic hiatus in the midline. The abdominal aorta descends in front of the bodies of the first four lumbar vertebrae in the midline or slightly to the left of the midline.

At L4, the aorta bifurcates (remember the umbilicus is L3-L5) into common iliac arteries.

The total length of the abdominal aorta is about 10 cm and normally its diameter is about 2.5 cm.

14. Identify and locate the iliac arteries

The common iliac arteries are a direct continuation of the abdominal aorta. The common iliac arteries divide into internal and external iliac branches about 4 cm from the midline.

15. Identify and locate the femoral arteries

The femoral artery is a continuation of the external iliac artery as it runs posterior to the inguinal ligament at about the midpoint of the inguinal ligament.

16. Identify and locate the renal arteries

These are located in the RUQ and LUQ. The renal arteries arise at right angles off the abdominal aorta at about L1 or L2.

17. Identify and locate the surface markings of the pancreas

The pancreas is normally not palpable as it is a deep retroperitoneal organ. The pancreas lies in both RUQ and LUQs. The head of the pancreas lies within the C-shaped curve of the duodenum to the right of the patient's midline. The body of the pancreas crosses the midline at about L1 and L2. The tail of the pancreas extends upward and to the left to the hilar surface of the spleen, roughly at the mid-clavicular line.

18. Identify and locate the surface markings of the spleen

The normal spleen is just inferior to the diaphragm in the LUQ at the level of the 9th-11th ribs, POSTERIOR to the left midaxillary line.

19. Identify and locate the surface markings of the kidneys

The kidneys are bean shaped organs, about 11 cm long, 5-6 cm wide, 3 cm thick, and about 4-5 cm from the midline at the level of about T12 through the first lumbar vertebrae.

The kidneys are posterior/retroperitoneal organs. Their upper poles are protected by the 11th and 12th ribs posteriorly. The inferior poles may be 3-4 cm above the iliac crests. The right kidney is slightly lower than the left kidney.

20. Identify and locate the surface markings of the colon

The colon is approximately 5 feet in length. The colon begins in the RLQ as the cecum and then turns into the ascending colon as it ascends to hepatic flexure (just under the liver) at about the 9th intercostal space.

The transverse colon is the longest and most mobile part of the colon. It runs from the hepatic flexure in the RUQ to the splenic flexure in the LUQ.

The colon then turns into the descending colon and at the level of the pelvic brim becomes the sigmoid colon and finally terminates in the rectum and anus.

21. Inspect the abdomen.

Note any skin lesions, scars, rashes, striae, dilated veins or umbilical hernias. Then note the contour of the abdomen. Is it flat, scaphoid, protuberant, or distended?

22. Auscultate abdomen in four quadrants

In the abdominal exam, auscultation always comes before palpation since any contact with bowel can increase the bowel's motility. Gently place the diaphragm of the stethoscope on the abdominal wall. Normally there are 5-34 bowel sounds per minute. Listen for a total of 2 minutes before saying that bowel sounds are absent. Note any bruits that may come from the renal arteries, iliac arteries, or aorta.

23. Palpate the abdomen superficially

The student places a hand flat on the abdomen and while keeping the fingers together, uses gentle, light dipping motions to palpate. ALL 4 QUADRANTS must be palpated.

24. Palpate the abdomen deeply

The student may use a 2 handed technique, exerting pressure from the top hand and palpating with the bottom hand. Again, ALL 4 QUADRANTS must be palpated deeply.

25. Palpate for the liver edge and spleen

With their right hand at about the level of the umbilicus and lateral and parallel to the rectus abdominus muscle, the student presses gently up and in while asking the patient to take a deep breath. If the liver edge is not palpated, the student repositions their right hand closer to the costal margin and repeats the step to try to feel the liver edge pass beneath their fingers as the patient takes a deep breath. Again, if the liver edge is not felt, the student then places their right hand just under the costal margin and repeats the step.

The student may place their left hand behind the lower ribs and lift up while attempting to palpate the liver edge with the right hand.

A common mistake is to start with the right hand too high, at the level of the costal margin. If the liver edge is below the costal margin, the student may never feel the edge because they start “too high.”

Normally a spleen tip is not felt. The same examination approach is used for the spleen. The student should place their right hand at about the level of the umbilicus, lateral to the rectus abdominis muscle and gently press up and in as the patient takes a deep breath. The student may place their left hand behind the lower ribs and lift up. This technique is repeated as the student’s right hand is eventually placed next to the costal margin.

26. With SP in right lateral decubitus position, palpate for the spleen

Remember, a spleen tip is not normally felt. If the spleen is palpable, it is usually 3x its normal size. As the spleen enlarges, it enlarges diagonally, toward the RLQ. (It enlarges anteriorly, downward, and medially). Also, remember that the spleen is normally posterior to the midaxillary line. By having the patient lie on their right side, gravity may bring the spleen forward and to the right into a palpable location. Again, the student may place their left hand behind the left lower ribs and then they gently press up and in as the patient takes a deep breath.

27. Palpate for the kidneys

In most normal adults, the kidneys are not palpable. In a very thin and relaxed person, you may feel the lower pole of the right kidney. The student is trying to “trap” the lower pole of the kidney between their hands as the patient takes a deep breath.

To palpate for the right kidney, the student places their right hand below the costal margin in the RUQ, lateral to the rectus abdominus muscle but parallel to it, and place their left hand BELOW and parallel to the 12th rib. (The left hand is between the lower end of the rib cage and the iliac crest – note that this is a LOWER position than the step when the liver edge is being palpated) While the left hand is lifting up, the patient is asked to take a deep breath and at the peak of inspiration, the student presses deeply into the right upper quadrant just below the costal margin and attempts to “capture” the right kidney between their two hands. Then the patient can breathe out and the student slowly releases the pressure from their right hand, feeling at the same time for the kidney to slide back into its expiratory position higher up. If the kidney is “trapped” the patient is aware of a capture and release sensation.

The right kidney is normally lower than the left. The left kidney is rarely palpable, but the same technique is used. Or the student may move to the patient’s left side and use their left hand to feel deep while their right hand lifts up from behind the patient.

28. Percuss for the liver span

The goal of this step is to measure the vertical span of the liver in the right mid-clavicular line. The student must percuss both above the liver (in the lung area) and below the liver to hear the different percussion notes of air in the lungs and bowels as opposed to the solid percussion note of the liver. In the abdomen, the student should start at the level of the umbilicus and then percuss up toward the liver. The student should not percuss over the gown.

A normal adult liver span is 6-12 cm in the right midclavicular line.

WASH HANDS