Introduction

- Ensure that the room is well lit,
- Patient should have an empty bladder
- Make patient comfortable in a supine position, with a pillow for the head and if available, another pillow under the knees.
- Have the patient keep arms at the sides
- If abdomen is voluntarily rigid, can flex at hip and knee to relax abdominal muscles
- For a child: if uncomfortable place on caregiver's lap as long as abdomen is flat
- Full exposure of the abdomen (from above the xiphoid process to the symphysis pubis). The groin should be visible. The genitalia should be covered.
- Ask the patient if they are experiencing any pain anywhere

You can even slide your hand under the low back to see if the patient is relaxed and flat on the table. Putting a pillow under the knees and allowing the patient to bend their knees so that the soles of their feet rest on the table will also relax the abdomen.
When the patient raises their arms over their heads, it stretches and tightens the abdominal wall, making palpation difficult

The abdominal muscles should be relaxed for all parts of the examination, but especially for palpation

Inspection

- Standing at the right-hand side of the bed, inspect the abdomen. Bend down or look from the side if needed
- Look at the contours of the abdomen - Is the abdomen of normal contour/fullness, or is it distended? Is it scaphoid (sunken)? Comment on this.
- Generalized fullness or distension fat, fluid, flatus, feces, fetus or fulminant mass.
- Localized distension may be symmetrical, or asymmetrical
- Scaphoid abdomen in advanced stages of starvation and malignant disease
- Peristalsis - Observe for several minutes (especially if you suspect intestinal obstruction). Peristalsis may be visible normally in very thin people but again, it usually suggests intestinal obstruction

Inspection (cont)

- Pulsations - may be visible. An expanding central pulsation in the epigastrium suggests an abdominal aortic aneurysm. However, the abdominal aorta can often be seen to pulsate in normal thin people
- Inspect the skin over the abdomen, mentioning the presence of any:
Scars - Describe or outline their location.
Striae - Old brownish red striae or stretch marks
Dilated veins - A few small veins may be visible normally.
Rashes and lesions, discolorations
- Observe the umbilicus - Observe its contour and location, and any signs of inflammation or hernia. The umbilicus is normally slightly retracted and inverted.

Local swellings may indicate enlargement of one of the abdominal or pelvic organs

Auscultation

ASSESS FOR BOWEL SOUNDS:
- Listen for bowel sounds and note their frequency and quality/character.
- Normal sounds consist of clicks and gurgles, occurring at an estimated frequency of 5 - 34 per minute.
- Tinkling bowel sounds - typically associated with bowel obstruction.
- Absent bowel sounds - suggests ileus (a disruption of the normal propulsive ability of the intestine). Causes of ileus include electrolyte abnormalities and recent abdominal surgery.
LISTEN FOR BRUITS:
- Auscultate over the aorta and renal arteries to identify vascular bruits suggestive of turbulent blood flow:
- Aortic bruits: auscultate 1-2 cm superior to the umbilicus, a bruit here may be due to an abdominal aortic aneurysm.
- Renal bruits: auscultate 1-2 cm superior to the umbilicus and slightly lateral to the midline on each side. A bruit here may be due to renal artery stenosis.

To be able to confidently state that a patient has 'absent bowel sounds' you need to auscultate for at least 3-5 minutes (this is unlikely to be done in an OSCE given the time limitations).
A bruit is an abnormal blowing or swishing sound resulting from blood flowing through a narrow or partially occluded artery
For now, just focus on listening for bruit over the aorta and renal arteries

Percussion

Sounds heard on percussion over the abdomen:
1) Tympany (drum-like) sounds – produced by percussing over air filled structures
2) Dull sounds – occur when a solid structure (e.g. liver) or fluid (e.g. ascites) lies beneath the region being examined

Special note should be made if percussion produces pain, which may occur if there is underlying inflammation (E.g.: peritonitis). This would be supported by other history and physical exam findings.

Palpation

Superficial

- Keep your hand and forearm on the same horizontal plane, with fingers together and flat on the abdominal surface – even if this means bending down or kneeling by the patient's side.
- Palpate the abdomen with a gentle but firm motion. Mould the relaxed right hand to the abdominal wall, do not to hold it rigid. When moving your hand from place to place, raise it just off the skin.
- Lightly palpate each of the four quadrants or nine abdominal regions
- Identify any superficial organs or masses and any area of tenderness or increased resistance (guarding) to your hand
SEE IF SUPERFICIAL PALPATION ELICITS
ANY OF THE FOLLOWING:
- Voluntary guarding - contraction of the abdominal muscles in response to pain
- Involuntary guarding/rigidity - involuntary tension in the abdominal muscles that occurs on palpation associated with peritonitis (e.g. appendicitis, diverticulitis)
- Masses - large or superficial masses may be noted on light palpation.

Tenderness is an important sign and maybe associated with guarding.
Try to distinguish between voluntary guarding (conscious contraction or tensing of the abdominal muscles in anxious patients anticipating a potentially painful clinical examination) and involuntary guarding (muscular spasm or rigidity due to localized peritoneal inflammation causing reflex contraction of overlying abdominal muscles upon palpation)

Superficial (cont)

Differentiating between voluntary and involuntary guarding can be done by talking to the patient to divert their attention whilst palpating, which would reduce voluntary but not involuntary guarding.

Rebound Tenderness
Pain that occurs upon the rapid removal of pressure rather than on application of pressure. Due to appendicitis, peritonitis, etc. Also known as 'Blumberg Sign'

Rovsing's Sign
When deep palpation in the left iliac fossa causes pain in the right iliac fossa Indirect or referred tenderness

Deep

- Deep palpation of the abdomen is performed by placing the flat of the hand on the abdominal wall and applying firm, steady pressure. It may be helpful to use two-handed/bimanual palpation method, particularly in evaluating a mass.
- Here the upper hand is used to exert pressure, while the lower hand is used to feel.
- Palpate each of the nine abdominal regions again, this time applying greater pressure to identify any deeper masses.
- If any masses are identified during deep palpation, assess the following characteristics:
Location - note which of the nine abdominal regions is the mass located in
Size and shape - assess approximate size and shape of the mass
Consistency: assess the consistency of the mass (e.g. smooth, soft, hard, irregular)
Mobility - assess if the mass appears to be attached to superficial or underlying structures
Pulsatility - note if the mass feels pulsatile, suggestive of vascular etiology (e.g. abdominal aortic aneurysm).

Inform the patient this may feel uncomfortable and ask them to let you know if they want you to stop.
Carefully monitor the patient's face for any discomfort

Deep

- Deep palpation of the abdomen is performed by placing the flat of the hand on the abdominal wall and applying firm, steady pressure. It may be helpful to use two-handed/bimanual palpation method, particularly in evaluating a mass.
- Here the upper hand is used to exert pressure, while the lower hand is used to feel.
- Palpate each of the nine abdominal regions again, this time applying greater pressure to identify any deeper masses.
- If any masses are identified during deep palpation, assess the following characteristics:

Location - note which of the nine abdominal regions is the mass located in

Size and shape - assess approximate size and shape of the mass

Consistency: assess the consistency of the mass (e.g. smooth, soft, hard, irregular)

Mobility - assess if the mass appears to be attached to superficial or underlying structures

Pulsatility - note if the mass feels pulsatile, suggestive of vascular etiology (e.g. abdominal aortic aneurysm).

Inform the patient this may feel uncomfortable and ask them to let you know if they want you to stop.
Carefully monitor the patient's face for any discomfort