

# Abdominal Assessment



## **Objectives**

- Develop structured approach to abdominal assessment – history taking
- Review the anatomy of the abdomen
- Develop a systematic approach to abdominal physical assessment
- Make accurate clinical / diagnostic decisions related to assessment findings

## **Communication**

### **Good Communication Can Improve Health Outcomes**

- Introduce yourself
- Make patient comfortable
- Ensure privacy
- Ensure dignity is maintained and be culturally aware
- Explain procedures
- Avoid jargon
- Listen to your patient

## History Taking - General

- Structured approach
- SOAPIE model
- S – Subjective data
- O – Objective data
- A - Assessment
- P - Plan
- I - Implementation
- E – Evaluation
- Allergies
- PMHX/PSHX

PMHX – past medical history

PSHX – past surgical history

## **Pain Assessment**

- **PQRST Model**

- P – Provocation
- Q – Quality
- R – Radiation
- S – Severity
- T - Timing

- **SOCRATES Model**

- S - Site
- O - Onset
- C - Character
- R - Radiation
- A – Associated features
- T - Timing
- E – Exacerbating/relieving factors
- S – Severity (scale 1 – 10)

Pain assessment allows the clinician to track the patient's response to treatment such as analgesia. A detailed description can also be helpful in identifying the pathology that is required to be collected. Pain can be more difficult to assess in the elderly patient, as it may be diffuse. Try not to be swayed by patient's explanations for their pain, they may lead you down the wrong track.

## History Taking - focused

- Abdominal Pain
- Indigestion, vomiting, nausea
- Bowel motions
- Urination
- Menstruation
- Appetite
- Weight loss

### *High-Yield Historical Questions*

1. How old are you? Advanced age means increased risk.
2. Which came first—pain or vomiting? Pain first is worse ( , more likely to be caused by surgical disease).
3. How long have you had the pain? Pain for less than 48 hours is worse.
4. Have you ever had abdominal surgery? Consider obstruction in patients who report previous abdominal surgery.
5. Is the pain constant or intermittent? Constant pain is worse.
6. Have you ever had this before? A report of no prior episodes is worse.
7. Do you have a history of cancer, diverticulitis, pancreatitis, kidney failure, gallstones, or inflammatory bowel disease? All are suggestive of more serious disease.
8. Do you have human immunodeficiency virus (HIV)? Consider occult infection or drug-related pancreatitis.
9. How much alcohol do you drink per day? Consider pancreatitis, hepatitis, or cirrhosis in patients with history or signs of significant intake.
10. Are you pregnant? Test for pregnancy—consider ectopic pregnancy.
11. Are you taking antibiotics or steroids? Effects of these drugs may mask infection.
12. Did the pain start centrally and migrate to the right lower quadrant? High specificity for appendicitis.
13. Do you have a history of vascular or heart disease, hypertension, or atrial fibrillation? Consider mesenteric ischemia and abdominal aneurysm.

*From Colucciello SA, Lukens TW, Morgan DL: Abdominal pain: An evidence-based approach. Emerg Med Pract 1:2, 1999.*

### *Red Flags from the elicited History*

**(should raise the index of suspicion of more serious causes)**

- Pain that:

Is steady, severe and unresponsive pain

# Anatomy - Quadrants

## Abdominal quadrants

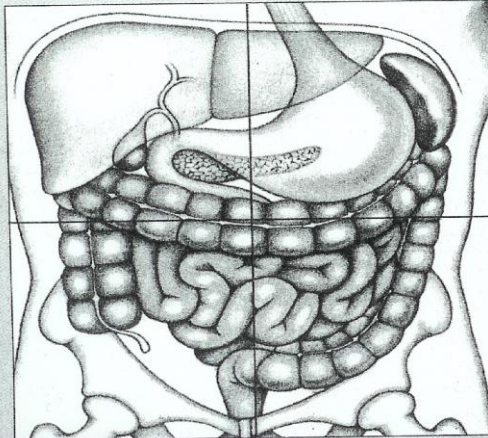
To perform a systematic GI assessment, try to visualize the abdominal structures by dividing the abdomen into four quadrants, as shown below.

### Right upper quadrant

- Right lobe of liver
- Gallbladder
- Pylorus
- Duodenum
- Head of the pancreas
- Hepatic flexure of the colon
- Portions of the ascending and transverse colon

### Right lower quadrant

- Cecum and appendix
- Portion of the ascending colon



### Left upper quadrant

- Left lobe of the liver
- Stomach
- Body of the pancreas
- Splenic flexure of the colon
- Portions of the transverse and descending colon

### Left lower quadrant

- Sigmoid colon
- Portion of the descending colon

## **Abdominal Assessment**

- Systematic approach
  - Patient position
  - General Appearance
  - Vital observations – Temp, RR, HR, BP and BSL
- Four basic techniques
  1. Inspection
  2. Auscultation
  3. Percussion
  4. Palpitation

Pt may require postural BP and HR – document any postural dizziness.



## **Patients Position**

- Lie flat
- One pillow under head
- Arms alongside the body
- Abdomen exposed – above xiphoid process to symphysis pubis
- Can expose the area in stages to preserve the patients dignity

## **General Appearance**

- Distressed
- Unwell
- Diaphoretic
- Restless or wants to stay still
- Confused
- Jaundice
- Cyanosis

When documenting, use these to describe the patients general appearance. Patients that lie very still with shallow breathing should be assessed for an acute abdomen.

## Pain Positions

- Parietal Pain – peritoneal irritation – fetal position
- Visceral Pain – lie supine with legs outstretched – dull, deep, aching
- Occlusion in hollow organ – restless prefer to be upright - colic
  
- Numerical Rating Scale
  - 0 – 10 Scale
  - 0 is no pain
  - 10 is the worst pain experienced

Visceral pain – stretching of the peritoneum or organ capsule

## Inspect

- Scars
- Distension
- Local swelling
- Prominent veins
- Pulsations
- Visible peristalsis
- Broken Skin – Lesions / Stoma
- Discolouration

Scars – could indicate previous surgery or trauma – old scars are usually white new scars are red/pink.

Stomata – colostomy, ileostomy, ileal conduit

7 F's of distension – fat, fluid, fetus, flatus, faeces, 'filthy' big tumor, 'phantom' pregnancy.

Local swelling – enlargement of the one of the abdominal organs

Veins – portal hypertension

Pulsations – AAA

Peristalsis – could be normal in thin patients – intestinal obstruction

Skin lesions – herpes/sister Joseph nodule

Discolouration – cullen's / grey turner

## Auscultation

- Bowel Sounds
  - diaphragm of stethoscope under umbilicus
- Document as absent or present bowel sounds
- Obstructed bowels – louder and higher pitch sound

Absent bowel sounds can only be documented if not present for 4 mins and this is from a paralytic ileus

Obstructed bowel sounds – louder and higher pitch with a tinkling quality due to the presence of air and liquid.

## Percussion

- Tapping the middle finger with the other middle finger while it is pressed against the patients abdomen
- Allows clinician to identify structures under the abdomen
- Sounds of percussion

Dull – solid/fluid filled structures (liver/spleen)

Tympany – Air filled spaces (stomach)

## Palpation

- Warm hands
- Assess painful area last
- 9 regions of the abdomen
- Light palpation to each region  
– 1 – 2 cm
- Deep palpation to each region  
– 4 – 5 cm

- 9 regions of the abdomen

Right Hypochondrium	Epigastrium	Left Hypochondrium
Right Lumbar region	Umbilical region	Left Lumbar region
Right Iliac Fossa	Hypogastrum	Left Iliac Fossa

- Use these regions to help document where the pain is

Each region can be palpated – regions can also be used to document the location of tenderness

## Seven Abdominal Signs

- ***Cullens Sign***

- Look for a blue tinged haemorrhagic patch around the umbilicus
- Indicative of haemorrhagic pancreatitis

- **Grey Turners Sign**

- Asses for evidence of bluish discolouration to flanks/ lower back
- Indicative of haemorrhagic pancreatitis

- ***Kehr's Sign***

- Patient may c/o left shoulder tip pain
- Indicative of splenic injury, ruptured ectopic



## **Seven Abdominal Signs**

- ***Ballances Sign***

- O/E percussion over the LUQ is dull
- Indicative of splenic injury, accumulation of blood

- ***McBurneys Point***

- The patient has pain in the RLQ, 1/3 the distance from the anterior ileac crest to the umbilicus
- Indicative of appendicitis

## Seven Abdominal Signs

- ***Murphy's Sign***

- Apply pressure below the R sub costal arch, ask the patient to take a deep breath. When the patient does the liver moves down which brings the gallbladder closer to the examiners hand. If this causes pain & inspiratory arrest it is a positive sign.

- Indicative of Cholecystitis

- ***Rovsing's sign***

- The patient experiences pain in the RLQ when palpating the LLQ

- Indicative of appendicitis

Rovsing's sign – pressure over the descending colon produces rebound tenderness in the RLQ

## Diagnostic Tests

- Depend on the findings of the Abdominal Examination

### Common blood tests

Test	Normal range	Significance in abdominal pain
Haemoglobin	13-18 (males) 11.5-16.5 (females)	May be lowered with acute or chronic blood loss
White blood cells	4-11	May be raised in the presence of infection
Platelets	150-400	May be lowered in blood loss. If abnormal, clotting levels should also be checked
Sodium Potassium	135-145 3.5-5.0	Abnormalities of electrolytes may be present during vomiting and diarrhoea
Urea Creatinine	3.0-6.5 60-125	Urea and creatinine may be raised in renal impairment. Urea alone may be raised in severe dehydration
Amylase	0-180	Raised in pancreatitis. May also be raised with a perforated ulcer
Group and save/ cross match		Should be taken for patients with suspected or known hypovolaemia and any patients who may need urgent surgery. Also to confirm Rhesus status in all pregnant patients

(Andreoli *et al* 2004, Longmore *et al* 2004, Provan and Krentz 2004)

- Cole *et. al.* (2006)

## Diagnostic Tests

- Bhcg – females in child bearing age
- Urine analysis
  - Blood – infection/renal stones
  - Protein – infection
  - Nitrates – infection
  - Leukocytes – infection
  - Bilirubin – hepatic/biliary disease
  - Ketones – anorexia/vomiting/DKA

## **Analgesia**

- True surgical cases will not be masked by analgesia
- Early pain relief is essential
- Decision - IV analgesia or oral analgesia with a sip of water – will depend on the patients degree of pain
- Evaluate effectiveness of analgesia

## Types and Locations of Abdominal Pain – adapted from Bartley (2008)

Disorder	Pain	Referred Pain
Abdominal Aortic Aneurysm	Central Abdominal & Back Pain	Back
Appendicitis	Periumbilical pain to RLQ pain	Right shoulder pain
Bowel Obstruction	Epigastric or periumbilical pain	
Cholecystitis	Middle epigastric pain	Right shoulder/scapula pain
Diverticulitis	LLQ pain	
Pancreatitis	Middle epigastric pain or periumbilical pain	Back, left flank and left shoulder
Pelvic Inflammatory disease	Lower abdominal pain	
Ectopic Pregnancy	One side lower abdominal pain	Shoulder tip pain

## Red Flags

- Change in vital observations – increased RR, hypotension
- Pain that changes location
- Pain that awakens the patient from sleep
- Weight loss
- Pain that persists for longer than 6 hours
- Pain post vomiting
- Elderly
- Diabetics
- Immunocompromised patients
- Anyone you are concerned about

## References & Acknowledgement

### References

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### Developed with thanks

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