Acute Abdomen

Surgery team

Notes in green :)

Sarah bin hussian

Reham al henaki

Acute Abdomen

❖ Objectives:

- Define acute abdomen
- Describe a general approach to acute abdomen
- Discuss common causes of acute abdomen through case scenarios

❖ Definition:

Acute abdomen denotes any sudden, spontaneous -by itself not inflected by something-, non-traumatic - disorder –acute abdomen from traumatic is different - in the abdominal area that requires urgent surgery in some cases –not all but the majority-

❖ General Approach to Acute Abdomen:

You are in the ER to see a patient with acute abdomen, how can you approach him? (SOUP)

- **S**ubjective (data) – History Taking
- **O**bjective (confirm) - Physical Examination
- **A**ssessment – Investigations
- **P**lan –Treatment (based on the final Diagnosis)

If you give pain killer symptoms & signs – which you need to act- will disappear so not preferable to give painkiller unless you reach the diagnosis

- not that much different from an elective case
- Unless the patient is hemodynamically unstable –in shock- you have to resuscitate first.

❖ History:

- **Age** (certain disease occurs in certain age -not commonly across all age groups- **ex**.. disease in child not existing in adult: mesenteric adenitis –never occur in adult- on the opposite, disease in adult never happen in a child diverticular disease "acute diverticulitis" usually in elderly patients.
- **Pain (SOCRATES)**
  - ✓ **Site:** give you an idea about what is the organ involved so if the pain in the Rt. Upper quadrant we think of gall bladder and liver (never think of something in left lower quadrant like diverticulitis)
  - ✓ **Onset:** sudden Vs gradual

- ✓ **Character:** dull (mild pain), trooping (in wounds), stapping (something in closed space like gallbladder and renal colic) ,compression(MI) , burning (gastritis), colicy in nature (bowel obstruction)
- ✓ **Radiation:** cholecystitis to the tip of right shoulder, pancreatitis to the back
- ✓ **Associated symptoms:** nausea and vomiting "with severe pain"
- ✓ **Timing**: important to decide management (patient have pain in right lower quadrant most likely it is appendicitis, if he told you the pain start last night →surgery , but if he tell you that he had this pain since 4-5 days ago then pain is getting worse then you diagnose him with appendicular mass →your approach will be conservative not surgical
- ✓ **Exacerbating and relieving factor:** fatty food elicit biliary colic, antacid is a good example for relieving factor if patient tell you that he has burning pain in epigastrium, milk temporarily relieve the pain but after an hour pain will become worsen (milk contain protein → protein increase gastric acid secretions "temporal buffer"),
- ✓ **Severity**: pain scale from 1 to 10 you ask the patient " where you put yourself in that scale"
  0 → no pain \ 10 → worst pain
  Mild pain (0-4), moderate (5-7), severe (8-10) "acute abdomen in sever category"

- **Vomiting** (hematemesis "blood", volume "small or large amount", projectile "force" usually due to pyloric stenosis in children or newborn due to congenital hypertrophy of pylorus , or more commonly in adult due to gastric outlet obstruction commonly due to scarring from chronic peptic ulcer, frequent or occasional, relieve pain or not "most of abdominal colic's relieved by vomiting", content "indigestive food →stomach not empting well, digestive food", greenish in color→ obstruction is beyond the gastric outlet "something distant" .
- **Defecation** (bowel habit): constipation for 2 days with acute abdomen→obstruction, diarrhea with acute abdomen →infection "gastroenteritis usually does not cause acute abd. Unless bowel perforation happened –"salmonella" lead to typhoid fever and typhoid fever can cause gastroenteritis that lead to bowel perforation and acute abdominal pain.
- **Fever**: rigors with acute abd. → Sepsis due to cholangitis

- **Past history :**

  Previous surgery and come with acute abd. →could be bowel obstruction , bowel strangulation or ischemia.
  Other disease like: crohn's can lead to bowel perforation and acute abd.

❖ **Physical Examination:**

- **General Look** : lying on bed and they look ill and in pain , uncomfortable moving b\c they want to obtain to a position that relieve peritoneal irritation, some time they roll in the bed "in renal colic or some time in acute colistitis when gallbladder get contracted with stones" -so anything related to stone make patient roll in bed,
  "appendicitis dull aching pain that not make them role in bed"

- **Vital Signs**: imp. To check the hemodynamic wither the patient is sick or not

- **Head & Neck:** check the eye for jaundice, tongues and mucous memb. for cyanosis but more for dehydration, lymph node may with lymphadenopathy

- **Chest:** lobar pneumonia can give abd. pain " symptom : bronchial breathing , crackles" → imp. To check the chest before you go to abdomen

- **Abdomen :**
  Inspection: distended, doesn't move with respiration b\c the peritoneum contracting the muscles of the abdomen, might see other signs (ex. In chronic liver disease...etc)
  Palpation: very superficial, if patient hold your hand or jump from the bed →sign of peritoneal so don't proceed to deep palpation and be careful (tenderness in superficial→ acute abd.) stop in this stage and go to the next step.
  Percussion
  Auscultation

- **Rectal Examination :** trickling of exudates in the Douglas pouch "between the rectum & uterus in female , rectum & bladder in male" pressing anteriorly to see if there is tenderness. And look for blood & malena.

- **Vaginal Examination :** ectopic pregnancy by moving the uterus "put your finger till you reach cervix then you move the cervix" but more commonly you inspect with speculum you see pelvic inflammatory disease manifest by exudates\ pus"vaginal discharge"

❖ **Investigations:**

- **Complete Blood Count** (Leukocytosis, Hg to see if he is anemic, platelet count if patient is thrombocytopenic b\c some time thrombocytopenia can happen due to sever sepsis also it is an indication of a problem that might prevent you from doing surgery or in spleenomegaly.

- **Electrolytes, BUN, Creatinine :**
  hypokalemia from upper gI cause(In vomiting you expect low potassium)
  hyponatremia from lower GI cause (diarrhea)
  BUN & Creatinine if elevated renal impairment due to hydration usually "sign of pre renal failure or pre renal azotemia"

- **LFTs :** if you suspect jaundice, biliary disease and cholangitis

- **Serum Amylase:** pancreatitis

- **Lactate** (product of anaerobic metabolism): if there is a gut ischemia

- **ABGs:** ischemia , severe sepsis, metabolic acidosis, before anesthesia

- **CXR:** perforation of hollow viscous (commonly duodenal ulcer perforation), see air under the diaphragm. Ask for upright chest x ray

- **AXR – KUB:** in bowel obstruction the abdomen will look distended this is in supine, other AXR we ask for is standing we call it erect "upright" →look for air fluid level "significant obstruction or not" if more than 3 significant obstruction
  In gastroenteritis you can see dilated loops of small or large bowel but not necessary to have obstruction.

- **Abdominal Ultrasound:** mainly used to rule out stones (gall bladder or renal)

- **Abdominal CT:** to diagnose difficult echo vocal "not sure" appendicitis (diagnosis of appendicitis commonly is clinically), rule out pancreatitis and tumors

- **Angiography / Duplex Scanning:** if we suspect mesenteric ischemia so we can see the blood vessels(clot, ischemic…)
  we usually do CT and angiography (CT→to see the bowel , angiography →to see bl. Vessel) "if they match no blood in the vessel and bowel is edematous this is gangrene.

❖ **Diagnosis:**

- Acute Abdomen + Shock – Acute Pancreatitis/ Ruptured AAA (abd. aortic aneurysm) →resuscitate & immediate surgery otherwise patient may died in mins.
- Generalized Peritonitis – Ruptured Viscus
- Localized Peritonitis - for ex. RLQ rebound tenderness Acute Appendicitis
- Bowel Obstruction (distention of the abd., no movement during respiration)
- Medical Causes (Lobar Pneumonia, Acute Inferior MI)

❖ **Management:**

- Immediate operation – Ruptured AAA (amount of bleeding is huge so if you don't stop it patient will die and whatever you put "IV fluid" will not match the loss from ruptured AAA so you have to go immediately and stop it)
- Preoperative preparation and urgent operation within 6 hours b\c the condition can get worse if we operate immediately (ruptured Viscus but hypertensive, dehydrated, quit septic so if you take him immediately to operation he might die → to prevent mortality such condition resuscitate the pts and prepare him for surgery by giving fluids, antibiotics (when they become stable usually they do it in ICU)
- Urgent operation within 24 hours (especially in cases of acute appendicitis)
- Conservative treatment in acute (pancreatitis operation will worsen the condition - except when there is pancreatic abscess or necrosis we operate on them-)
- Observation patient come with sudden onset acute abd. pain, you examine him and there was tenderness but diagnosis not established→ admit the patient and observe him (check him ever 2-4 hours tell next day if they have a disease it will manifest for ex: early appendicitis after 24 hours will be obvious or some time there is a follicle somewhere or ruptured Graafian follicle next day they feel better then you can discharge the patient at this step)
- Discharge

Scenario 1:

A 35 year-old male presented to the ER with 2 days history of abdominal pain. He took antacids but did not help him at all!

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Scenario 2:

A 55 year-old business man presented to the ER with severe abdominal pain since 6 hours when he felt something like a burst in his abdomen. He is known with PUD and H-pylori but he was not taking his medications regularly.

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Scenario 3:

A 73 year-old male developed atrial fibrillation while recovering from an acute MI in the medical ward. The surgery team was consulted to evaluate a new onset of severe mid-abdominal pain.

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Scenario 4:

A 54 year-old lady presented to the ER complaining of generalized abdominal pain associated with vomiting, constipation for 2 days, and abdominal distention. She had an emergency Cesarean Section for her 5th baby 5 years back.

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❖ **Summary:**

- Acute abdomen is a sudden abdominal disorder that requires an urgent operative intervention in some cases.
- Almost all acute abdominal events have a common general surgical approach based on the nemonic SOAP.
- We have applied this general approach to some case scenarios such as acute appendicitis, perforated DU, acute mesenteric ischemia, and small bowel obstruction .