21 Examination of Mass Abdomen

In a patient presenting with abdominal mass, generally following history should be elicited carefully.

Pain: Site, nature, aggravating or relieving factors, duration of pain, referred pain.

Vomiting: Type, content, haematemesis, relation to food, frequency.

Jaundice: It is an important factor in relation to liver, gallbladder or pancreatic masses.

Bowel habits: Constipation, diarrhoea, bloody diarrhoea, furious diarrhoea, tenesmus.

Decreased appetite and weight.

Inspection of the mass: Anatomical location, margin, surface, movement with respiration.

Palpation of the mass: Site, extent, surface, tenderness, consistency, movement with respiration, mobility, borders, plane of the swelling (by leg rising test), presence of other masses.

Percussion: It is an important aspect of examination in case of an abdominal mass. Percussion over the mass is important to determine the anatomical location of the mass. If mass is dull, then it lies in the anterior abdominal wall or intra-abdominally in front of the bowel, liver, spleen, gallbladder, etc. If the mass is with an impaired resonant note, then the mass is arising from the bowel like stomach, colon, and small bowel. If the mass is resonant on percussion, then the mass is probably in the retroperitoneal region. Other than this, liver dullness, free fluid in the abdomen should be elicited during percussion.

***Per-rectal examination*:** It is done to look for any secondaries in rectovesical pouch, any primary tumour or relation of lower abdomen masses (pelvic masses).

***Pervaginal examination*:** It is done to assess pelvic masses.

***Abdomen is divided into nine regions by four lines* (Fig. 21.1).**

Upper horizontal or *transpyloric line* is midway between the suprasternal notch and symphysis pubis or line between tips of ninth costal cartilages on each side. It is often midway between xiphisternum and umbilicus.

Lower horizontal line *is transtubercular line* at the level of two tubercles (5 cm behind the anterior superior iliac spine along the iliac crest) on the iliac crest.

Right vertical line is the line through the midpoint of right anterior superior iliac spine and pubic symphysis. It is usually a line joining right midclavicular and right midinguinal points.

Left vertical line is the line through the midpoint of left anterior superior iliac spine and pubic symphysis. It is usually a line joining left midclavicular and left midinguinal points.

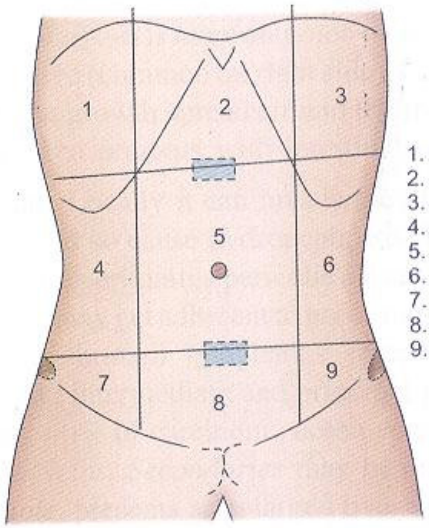


Fig. 21.1: Different regions in the abdomen.

Regions in the abdomen
Right hypochondrium
Epigastrium
Left hypochondrium
Right lumbar region
Umbilical region
Left lumbar region
Right iliac fossa
Hypogastrium
Left iliac fossa

Quadrants in the abdomen are four in number formed by two lines—one is vertical midline through the umbilicus; another is horizontal line passing through the umbilicus. Quadrants are—right upper, right lower, left upper and left lower **(Fig. 21.2)**.

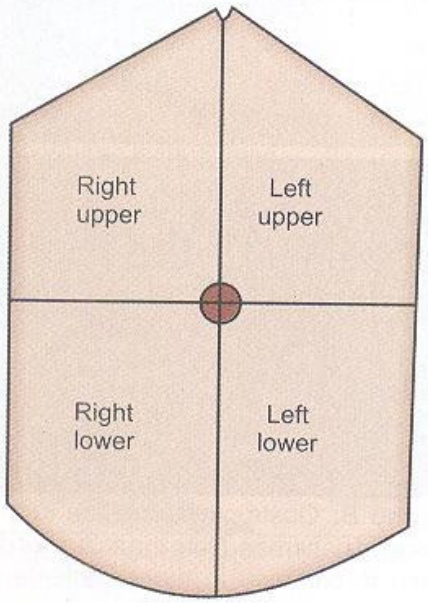


Fig. 21.2: Different quadrants in the abdomen. They are four in number formed by two lines—one is vertical midline through the umbilicus; another is horizontal line passing through the umbilicus. Quadrants are—right upper, right lower, left upper and left lower.

Chief Complaints

- Mass per abdomen—ask for duration, progress, site, mass appearing/disappearing (like in intussusception, Dietl's crisis of hydronephrosis kidney, and choledochal cyst)
- Pain in the abdomen—region of pain; duration of pain to be mentioned
- Vomiting—duration
- Haematemesis, malaena—duration
- Satiety—sensation of fullness after taking food (early satiety signifies gastrointestinal pathology like carcinomas
- Yellowish discolouration of sclera—duration
- Loss of appetite and decreased weight—weight loss more than 10 Kg in short period/6 months is significant
- Altered bowel habits/constipation/diarrhoea
- Fever—Its character is important to be noted in abdominal tuberculosis, amoebic liver abscess, cholangitis, malignancy with tumour necrosis, infected pseudocyst of pancreas.

History

History of Present Illness

Pain

Site of origin of pain; onset (sudden/insidious); duration; radiation of pain/referred pain; type of pain—intermittent/persistent; dull, severe pricking, colicky; periodicity with an interval of free period—ulcer pain has often got periodicity unless it is complicated; relation to food intake—more/less/not related to meals; relation to vomiting/induced vomiting; aggravating/relieving factors; pain in relation to bowel habits/urinary habits.

Vomiting

- Duration, frequency, relation to food, type (projectile/effortless)
- Vomitus—content (food/blood/bile), quantity, smell, colour—coffee ground/bloody/yellow, taste
- Relation to pain, details of haematemesis if present
- It is better to ask the patient to collect and keep the vomitus and clinician should personally observe it.

Jaundice

- Duration, colour (greenish yellow suggests obstruction), severity, progress (progressive/intermittent/static/reducing)
- Presence of fever with jaundice—cholangitis
- Association with pruritus, clay coloured stool/silvery stool.

Altered Bowel Habits

- Duration, type, malaena, with distension of abdomen

Altered Urinary Symptoms

History of frequency/urgency/haematuria/pyuria/oliguria/painful urination/burning urine/difficulty in passing urine/hesitancy/hiccough/oedema feet or face; relation of urinary symptoms to pain, mass in abdomen should be asked for.

Other Relevant History

Cough and haemoptysis, bone pain, etc.—suggestive of metastases.

Past History

Earlier history of abdominal surgery—reason for surgery, how long ago it was done, whether earlier symptoms are relieved or not, whether the symptoms are now similar or different, whether it was an emergency or an elective surgery, whether it was earlier properly investigated or not, whether drain was placed or not—if placed when it was removed; what content was coming through the drain, whether blood transfusion was done during surgery or in postoperative period.

Personal History

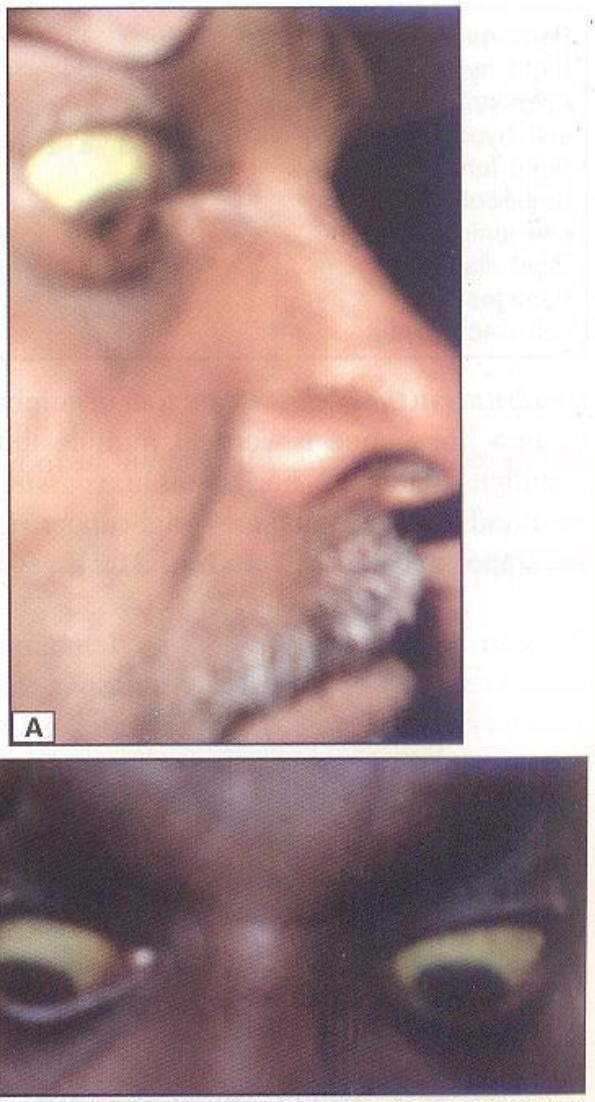
History of alcohol intake, diet, smoking, etc. has to be noted.

Treatment history—any relevant history of surgery in the past, chemotherapy for malignancies, abdominal tuberculosis treated, and so on.

Family history—any relevant history in the family should be taken as some GI malignancies run in families.

General Examination

Pallor/jaundice/clubbing/oedema feet /cachexia is noted. Pulse/blood pressure is recorded. Genitalia/respiratory and cardiovascular system should be examined **(Figs 21.3A and B)**.



Figs 21.3A and B: Obstructive jaundice in a patient with carcinoma head of pancreas. Note the sclera for discoloration. Severe itching is common in these patients.

Local Abdominal Examination

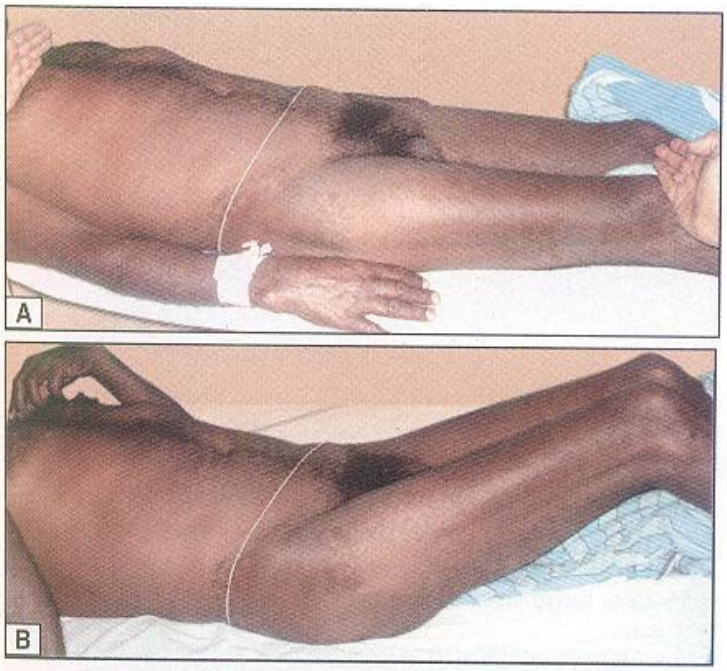
Inspection

Inspection of the abdomen is done in supine position exposed from midchest to midthigh region with arms extended. Inspection is done from side of the bed as well as from foot end with eye level at the level of the patient **(Figs 21.4A to 21.5B)**.

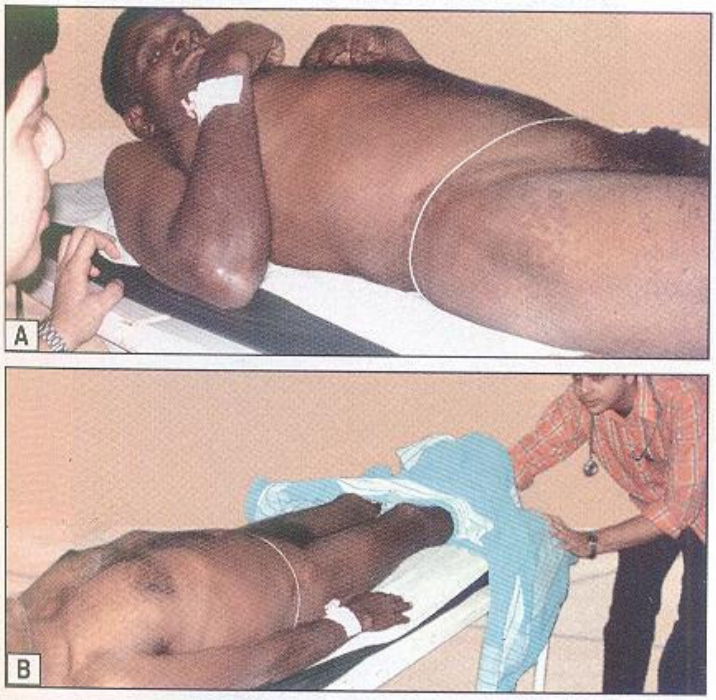
Shape of the abdomen—contour—normal/scaphoid/distended.

Skin over the abdomen whether stretched/pigmented; presence of scar whether healed primarily or secondarily; site of scar; length and width of scar; whether there is any incisional hernia or not.

Dilated veins over the abdomen should be looked for—*caput medusae* is dilated veins radiating from the umbilicus—seen in portal hypertension. In *inferior vena caval obstruction* (lateral abdominal wall) dilated veins are visible with their flow of blood from below upwards towards superior vena cava. In *superior vena caval obstruction* dilated veins are visible with blood flow from above downwards. Dilated veins should be inspected in standing position and also



Figs 21.4A and B: Proper exposure of the abdomen is important from midchest to midthigh and position of the patient for proper abdominal examination.



Figs 21.5A and B: Inspection of the abdomen should be done at the level of the patient's abdomen both from right side as well as from foot end.

direction of flow should be checked by placing two fingers apart over the vein and the fingers are released one by one to see the direction of blood flow. Normally abdominal wall drains to superior vena cava above the umbilicus and to inferior vena cava below the umbilicus—*water shed area* **(Figs 21.6 and 21.7A and B).**

Movements of regions with respiration should be noted.

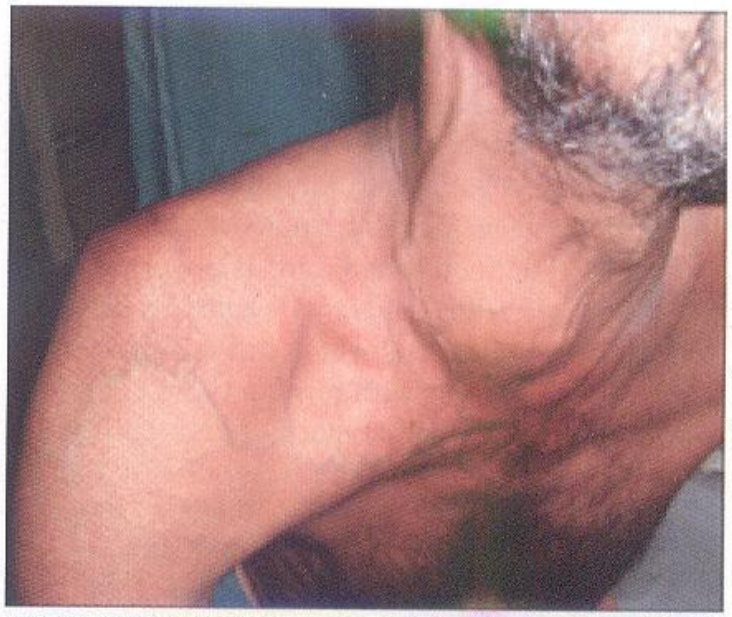
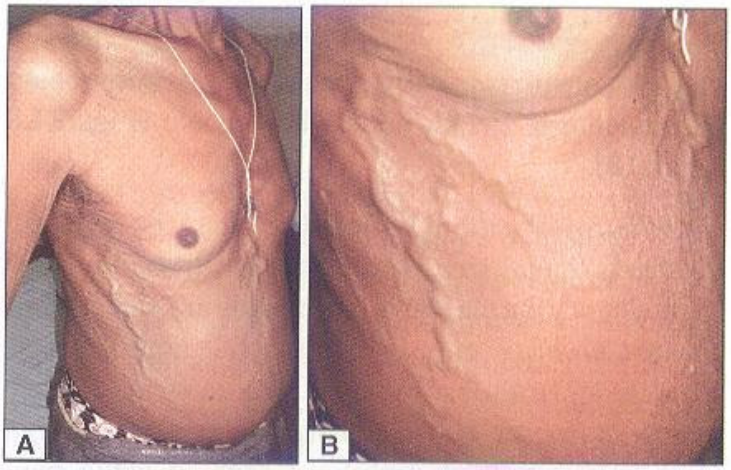


Fig. 21.6: Superior vena caval obstruction causing dilated veins in the neck chest wall and shoulder. Note the neck swelling extending into the mediastinum.



Figs 21.7A and B: Inferior vena caval obstruction causing dilated veins over the lateral aspect of the flank with flow of blood upwards.

Pulsations over the mass or any region should be noted. Patient should hold the breath after full expiration to see for pulsations.

Any visible peristalsis should be looked for—*Visible gastric peristalsis (VGP)* is seen in upper middle region with waves beginning from left upper abdomen directed downwards and towards right to umbilical region. It is stimulated by drinking glass of water or by massaging the epigastrium. It signifies gastric outlet obstruction. But may be absent in gastric outlet obstruction where gastric paresis develops and stomach becomes dilated and silent without any motility. *Visible intestinal peristalsis (VIP)* occurs in *step ladder* pattern in central abdomen from left to right or vice versa