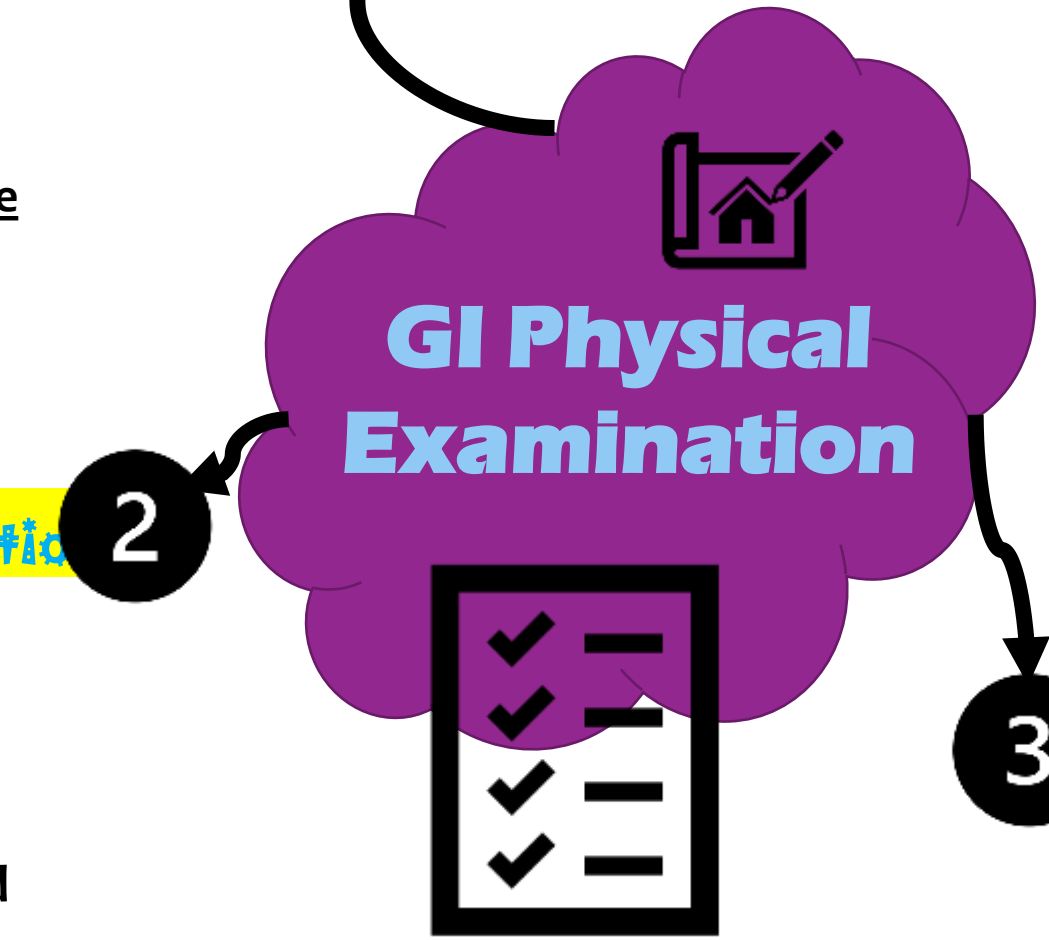
GI Physical Examination

Ghada O.Odeh, General Surgeon

GI Physical Examination



1 General Examination

- General Appearance
- Hands
- Face
- Mouth, Throat & Tongue
- Neck
- Chest
- Chronic Liver Disease

2 Abdomen Examination

A. Position

B. Exposure

C. Inspection

- From Foot of Bed
- From Right Side
- Ask pt. to ..

3 Others

- *External Genitalia*
- *Hernial Orifices*
- *DRE (PR)*
- *Back*
- *Lower Limbs*

A. Palpation & Percussion

1) Light ..
2) Deep ..
3) Organomegaly
   - Liver & GB
   - Spleen
   - Kidney & UB
4) Special Signs
5) Ascites

B. Auscultation

- ✓ Bowel Sounds
- ✓ Bruit
- ✓ Friction Rub
- ✓ Splash

General Examination

GENERAL APPEARANCE

- **LOC & Orientation.**
  - Orientation impaired in hepatic encephalopathy, why?
- **Looks well or ill (in pain?)**
  - Acute Abdomen vs. Renal Colic.
- **Vital signs.**
- **Nutritional status, Obese or Cachectic?**
  - Ht., Wt., WC, BMI
  - Truncal vs. Generalized Obesity?
- **Skin redundancy.**
- **Striae.**

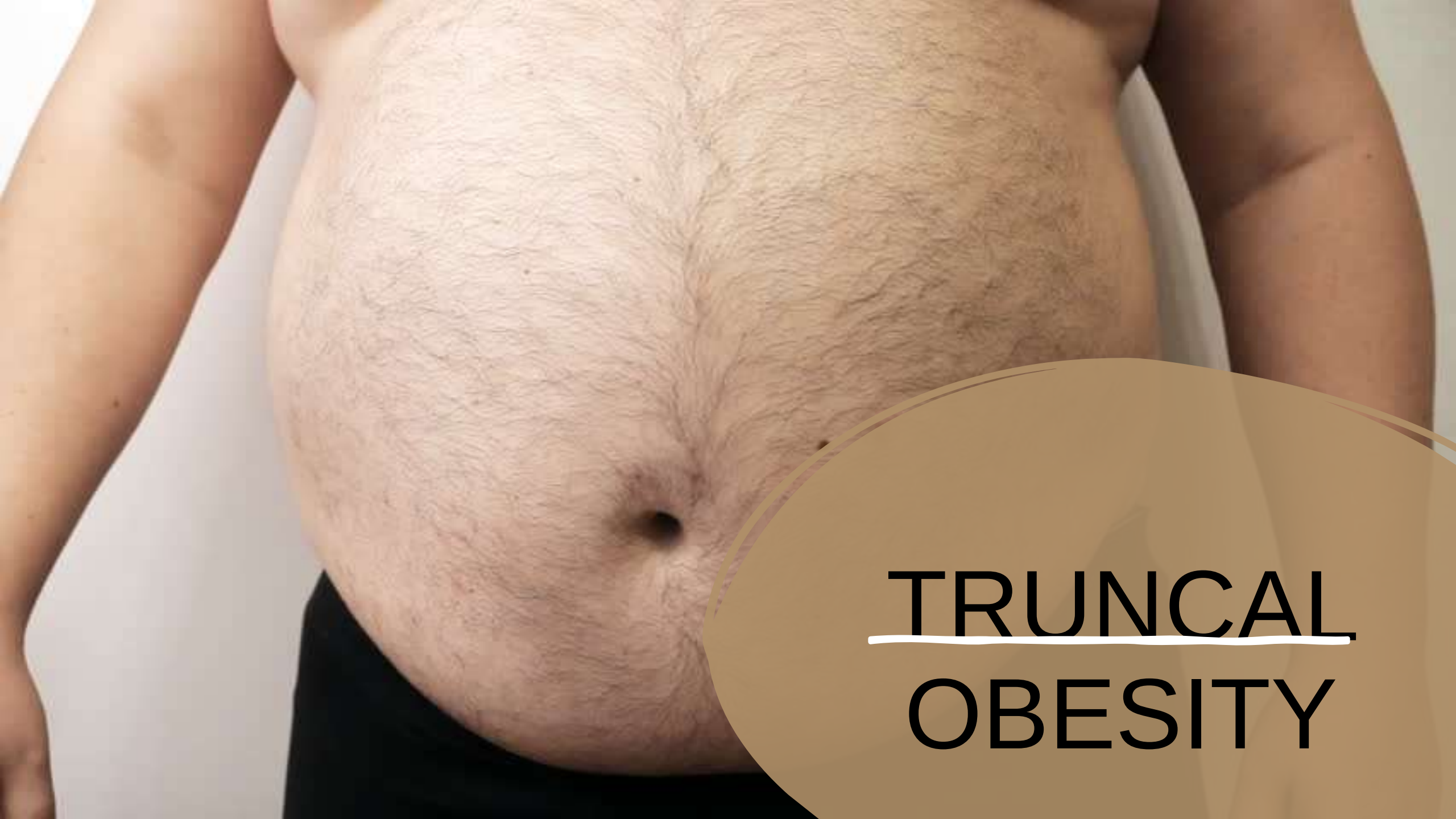
Hepatic Encephalopathy (West Haven)

6.11 Grading of hepatic encephalopathy (West Haven)

Stage	State of consciousness
0	No change in personality or behaviour No asterixis (flapping tremor)
1	Impaired concentration and attention span Sleep disturbance, slurred speech Euphoria or depression Asterixis present
2	Lethargy, drowsiness, apathy or aggression Disorientation, inappropriate behaviour, slurred speech
3	Confusion and disorientation, bizarre behaviour Drowsiness or stupor Asterixis usually absent
4	Comatose with no response to voice commands Minimal or absent response to painful stimuli

CACHEXIA

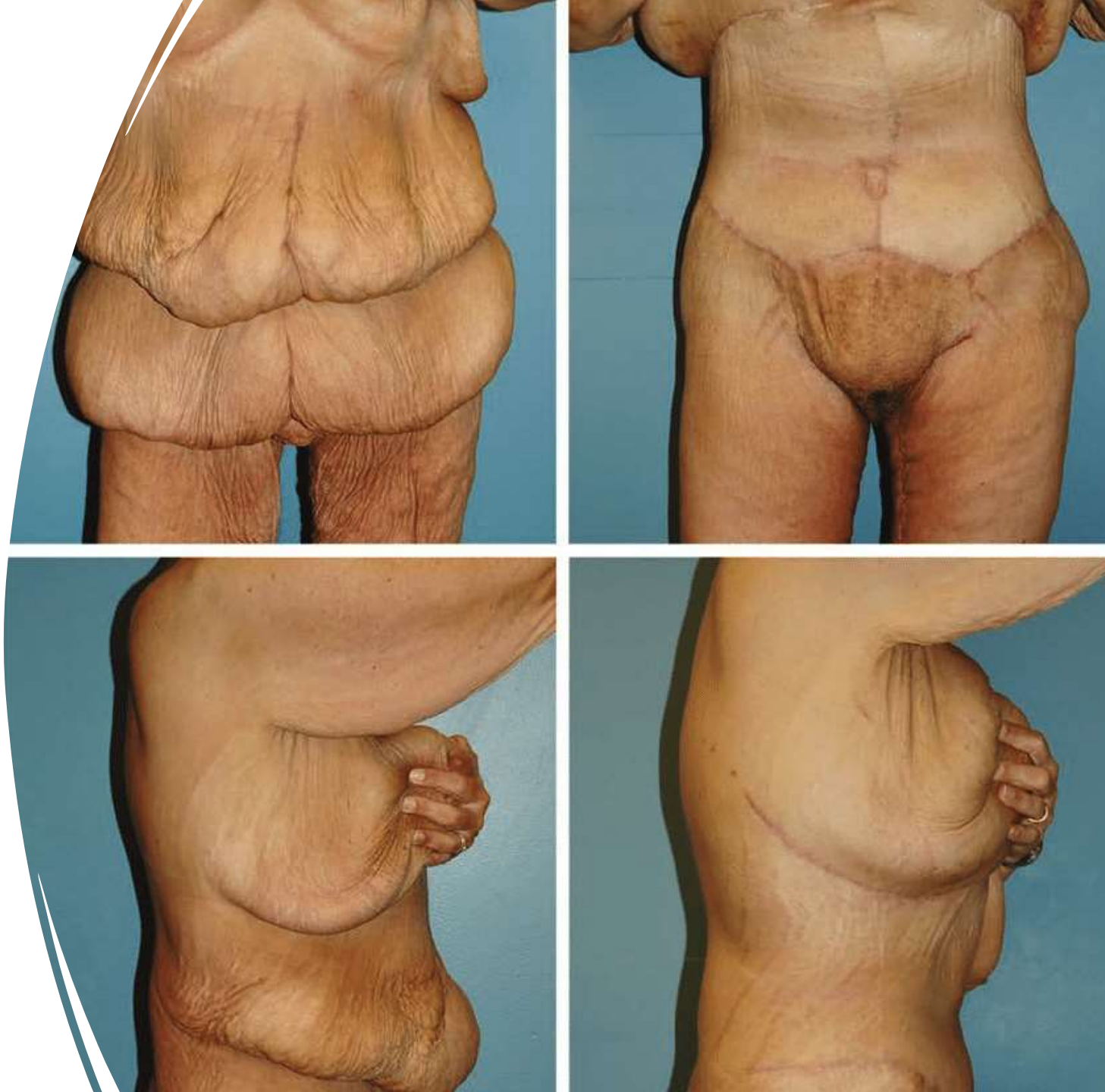
(MUSCLE WASTING)



TRUNCAL OBESITY

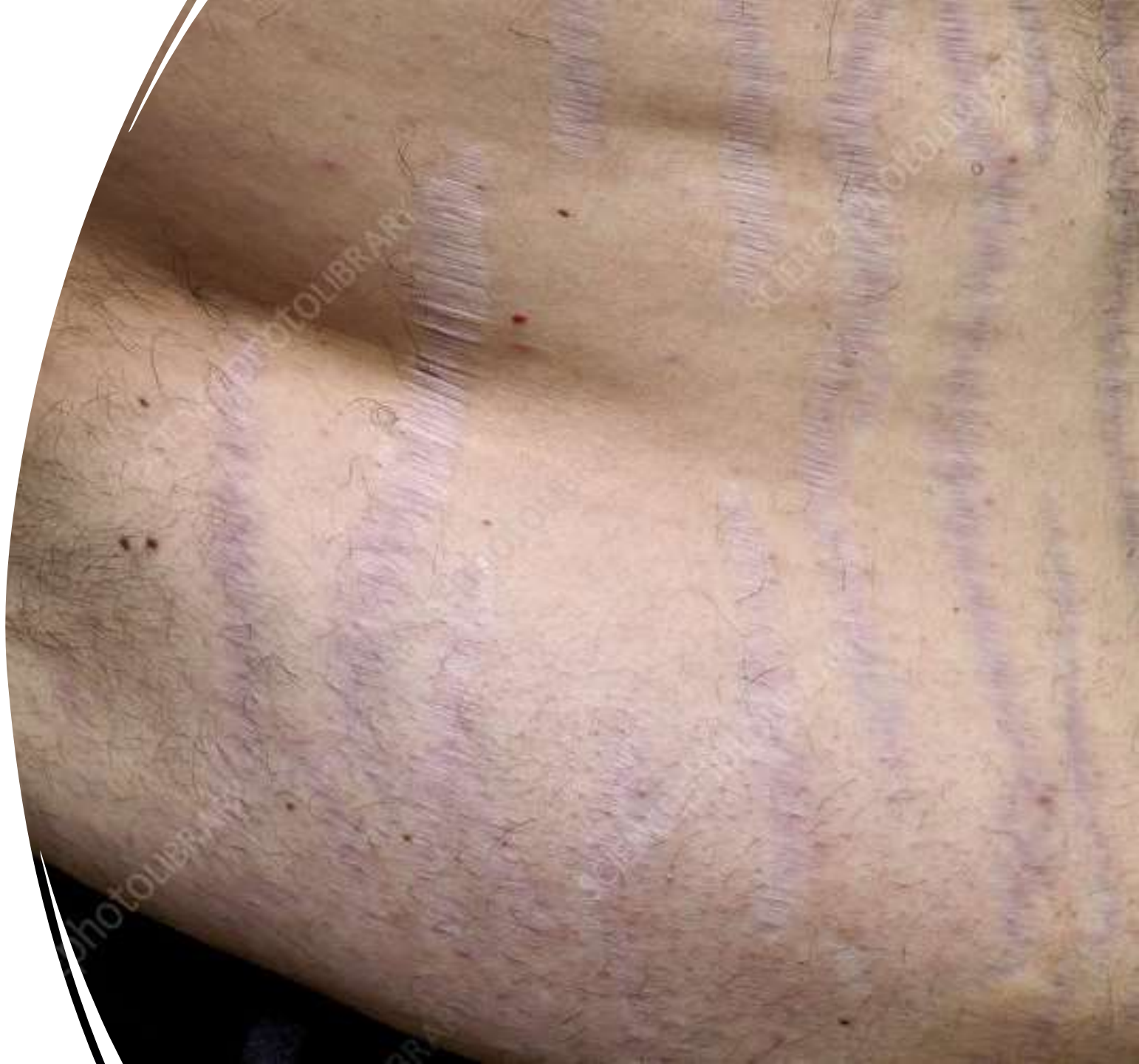
Skin Redundancy

* Skin fold thickness.
* Rapid wt. loss



Striae

- Asymmetric raised linear streaks (stretch marks).
  - ❑ Rapid wt. gain.
  - ❑ Pregnancy
  - ❑ Cushing Disease.



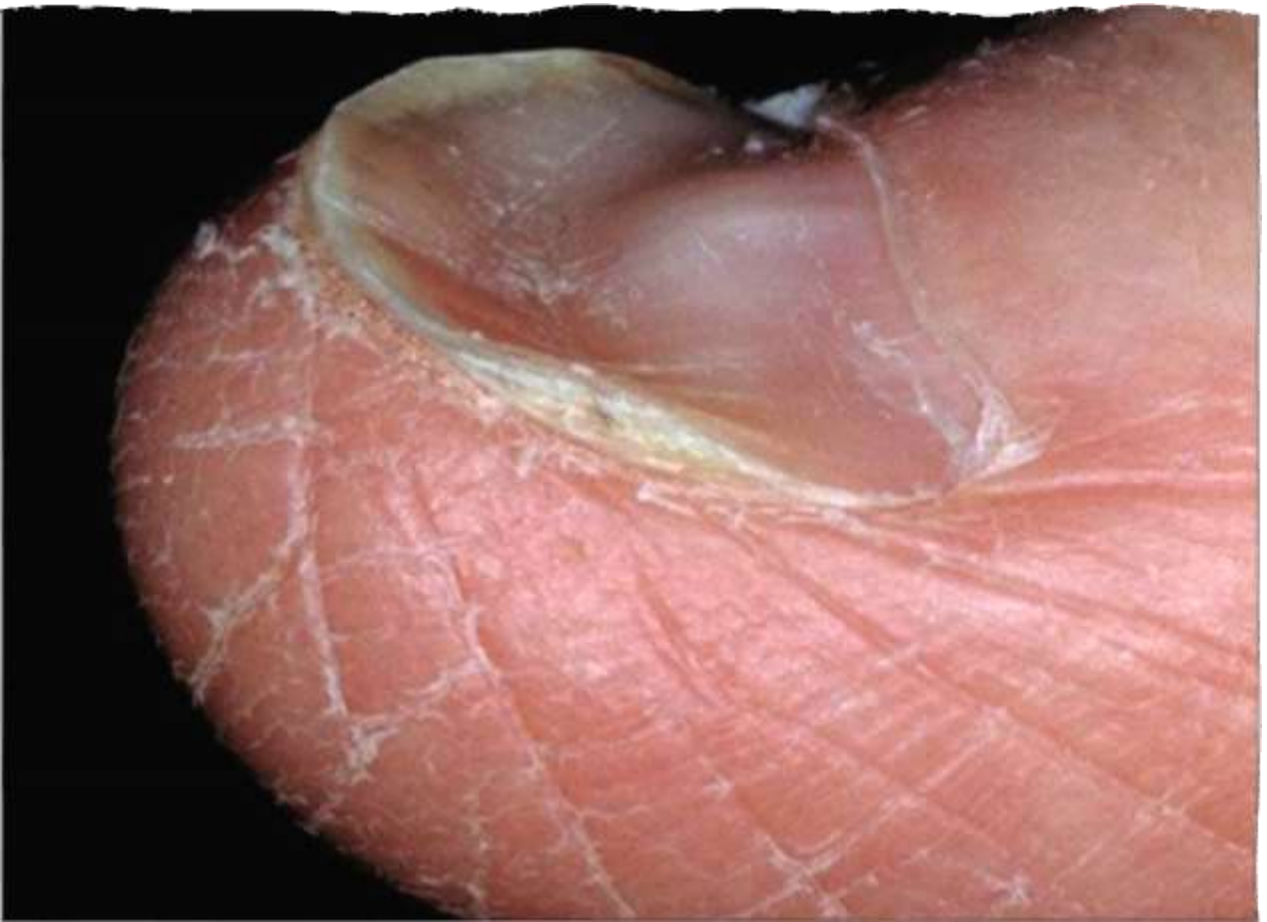
HANDS

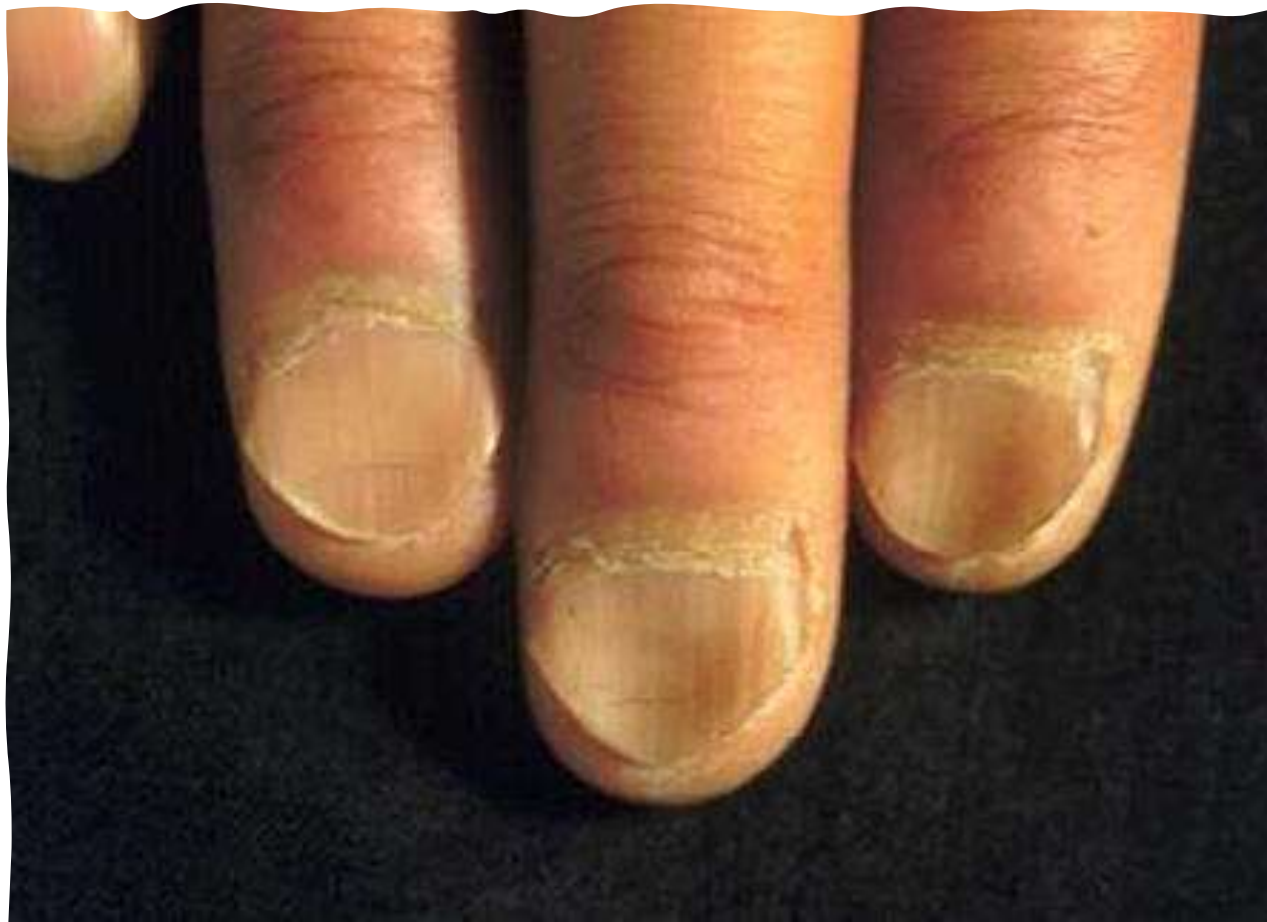
- **Clubbing (IBD, Cirrhosis, Celiac).**
- **Koilonychias (IDA).**
- **Leukonychia (Hypoalbuminemia).**
- **Muscle Wasting.**
- **Skin Creases.**
- **Tar staining.**
- **Flapping Tremor.**
- **Dupuytren's Contracture.**
- **Palmar Erythema (normal in pregnancy)**

>> (Chronic Liver Dis.)

FINGER CLUBBING

Koilonychia | spoon-shaped nails



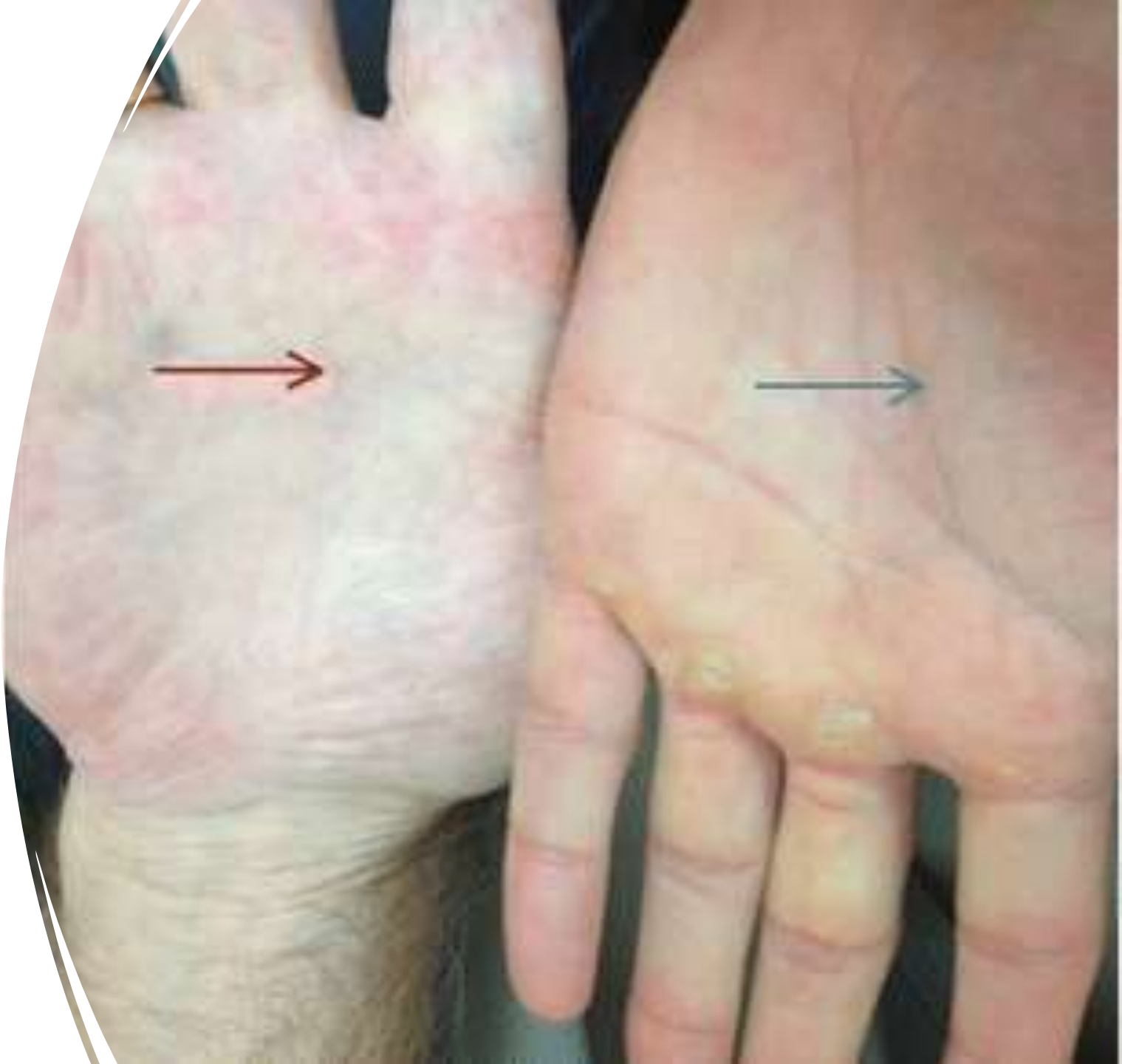


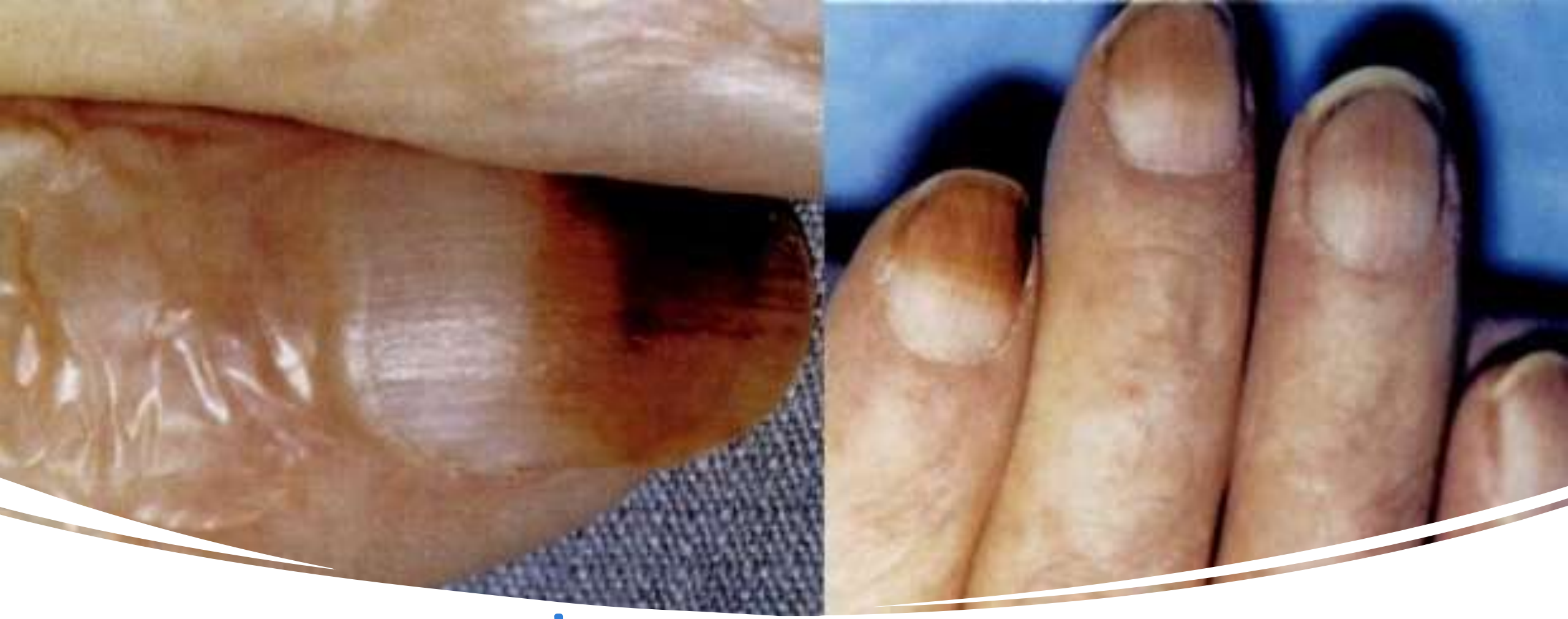
Leukonychia

- **White-colored nails.**
- **Hypo-albuminaemia:**
  1. Chronic **Liver** Disease.
  2. Protein calorie **Malnutrition** (Kwashiorkor).
  3. **Malabsorption** protein-losing enteropathy (Celiac disease).
  4. Heavy & prolonged **Proteinuria** (Nephrotic Syndrome).

Hand Muscle Wasting

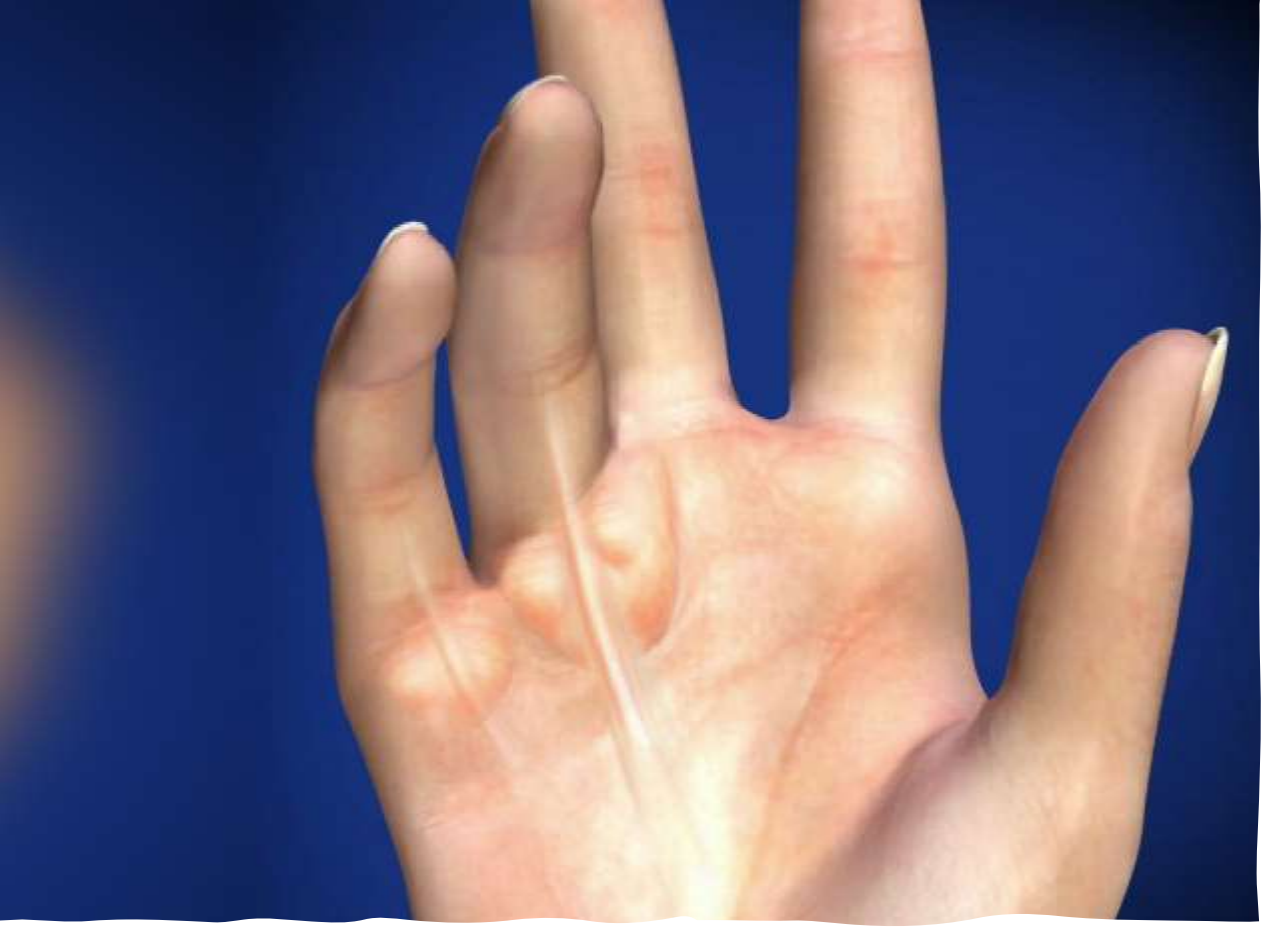
Palmar Crease Pallor

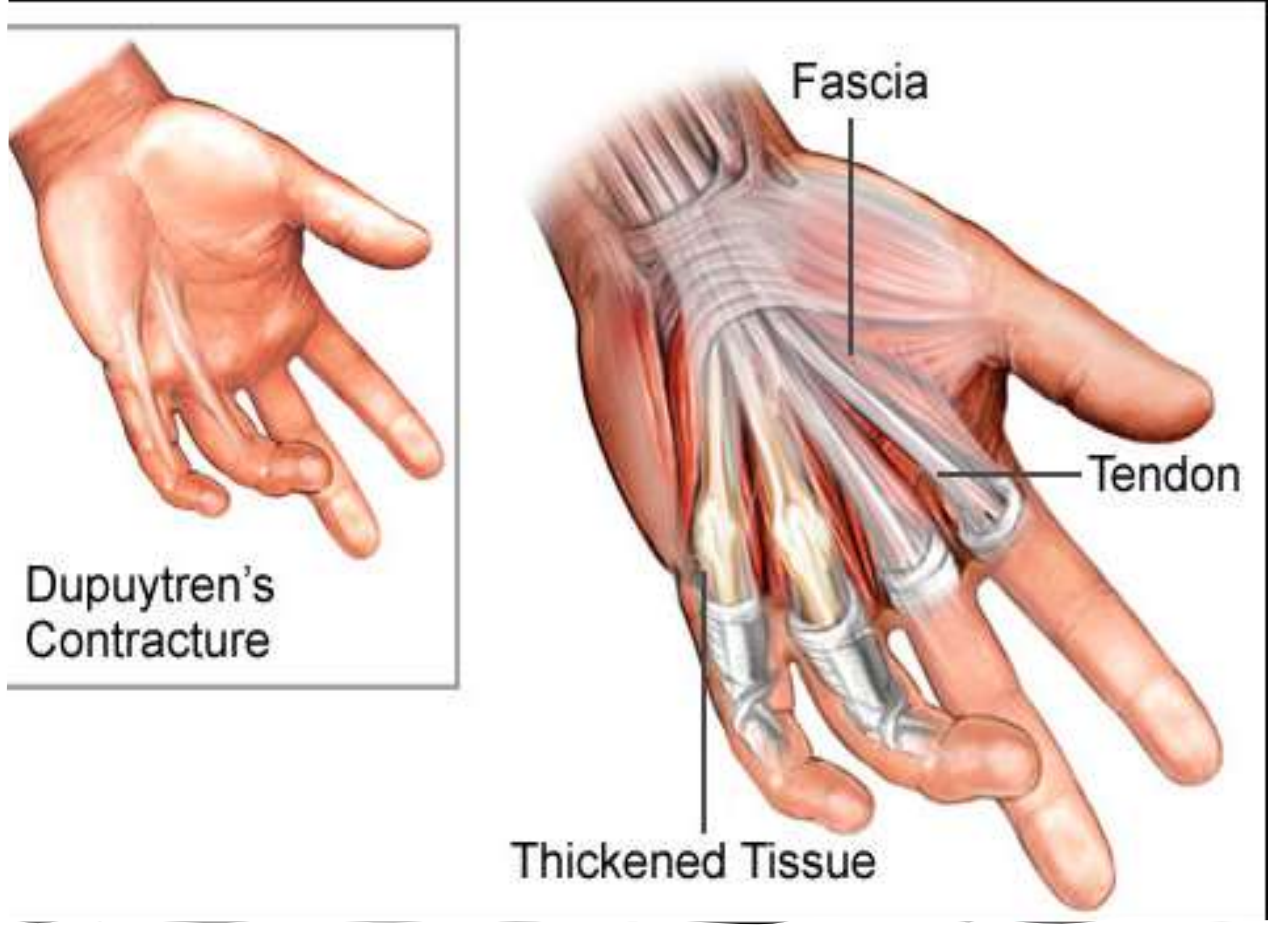




Tar Staining

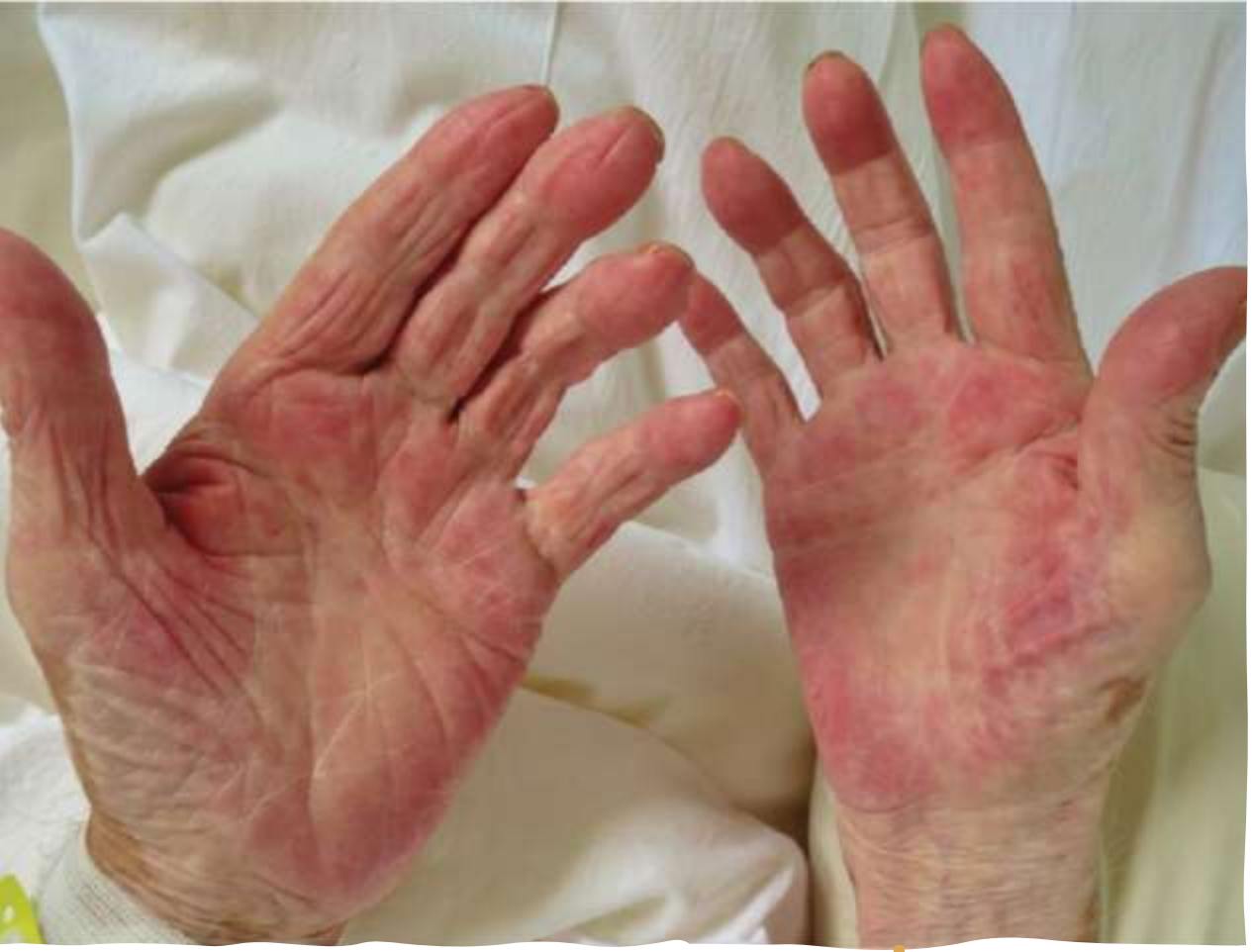
Asterixis | Flapping Tremor





Dupuytren's Contracture

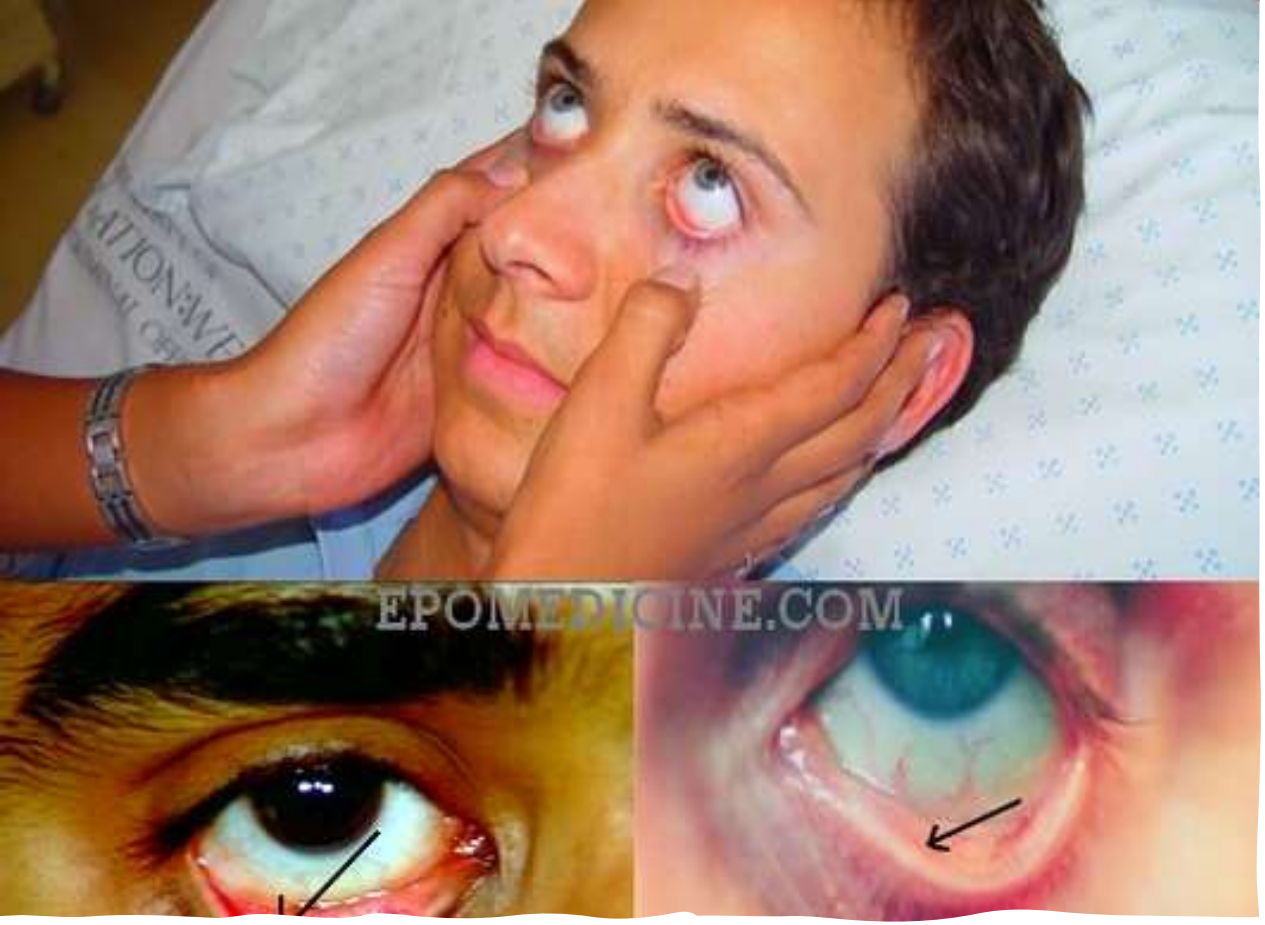
- Contracture of palmar fascia.
- Alcohol-related chronic liver disease.

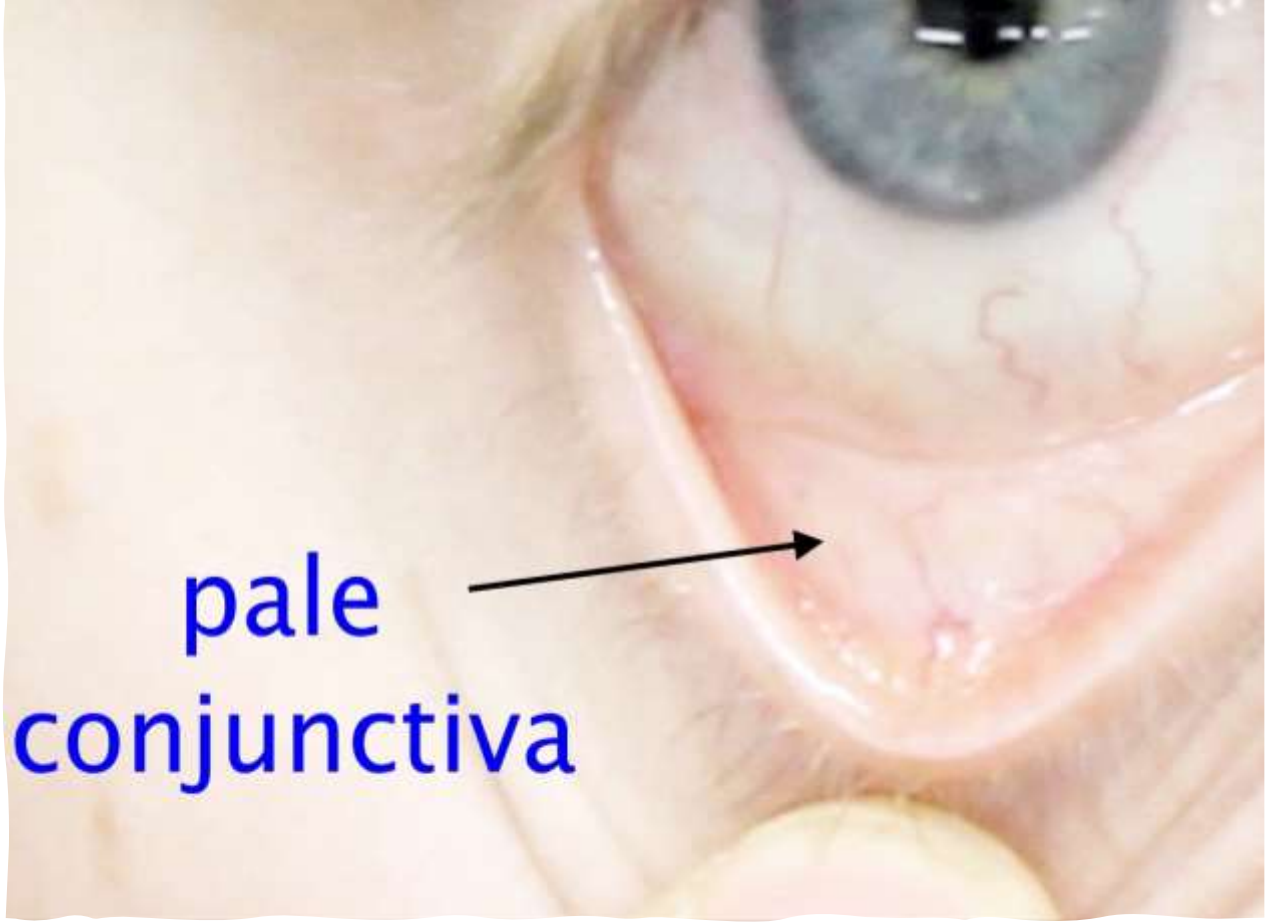


Palmar Erythema

FACE

1. **Pallor** (Anemia).
2. **Jaundice** (vs. pinguecula).
3. **Spider Neavi** (Chronic Liver Disease).
4. **Sialadenitis/Sialadenosis.**





Pallor

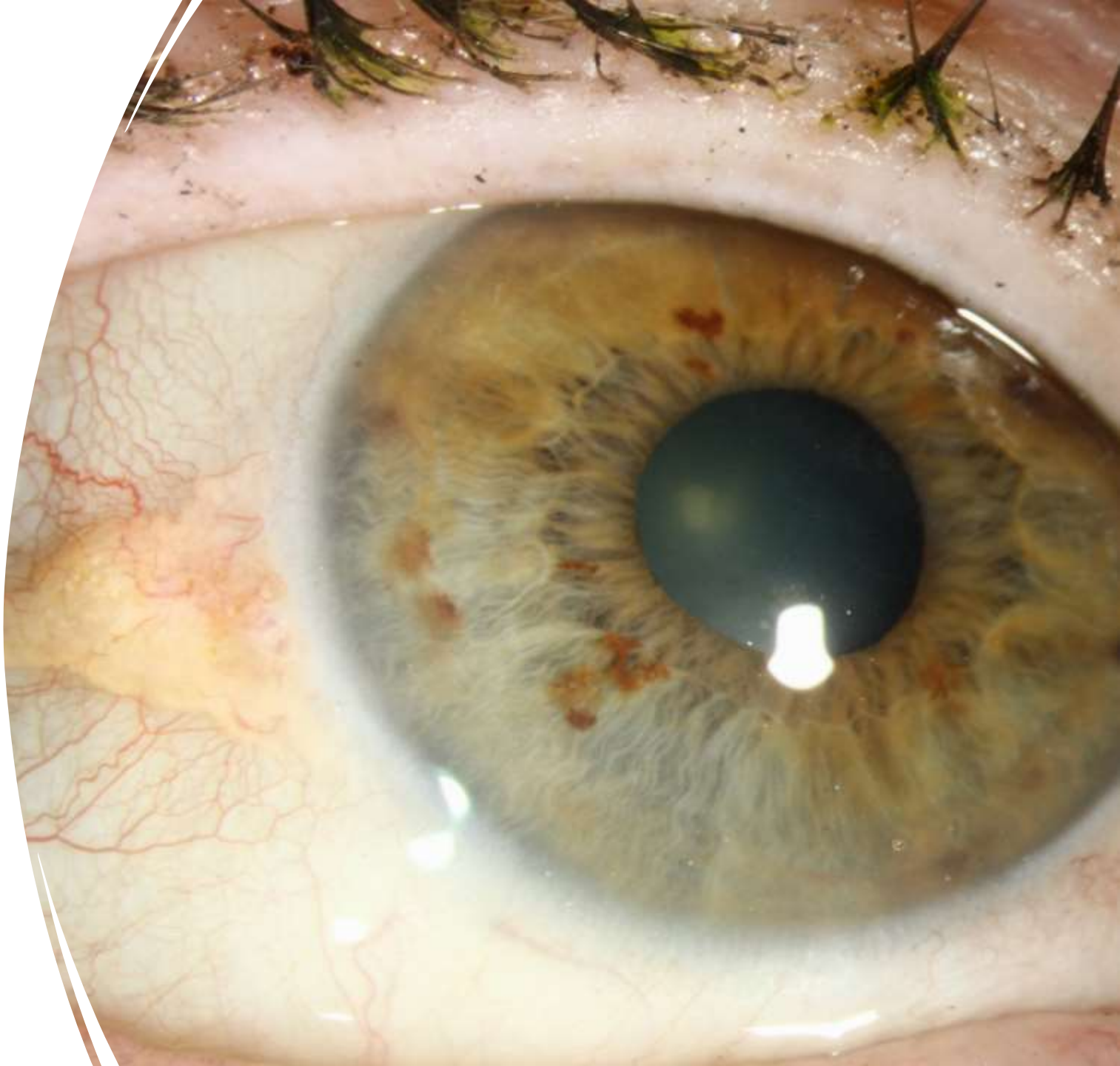
Inner aspect of Lower Eyelid

JAUNDICE

- If not obvious, look down & retract upper eyelid to expose upper sclera.
- Natural Light

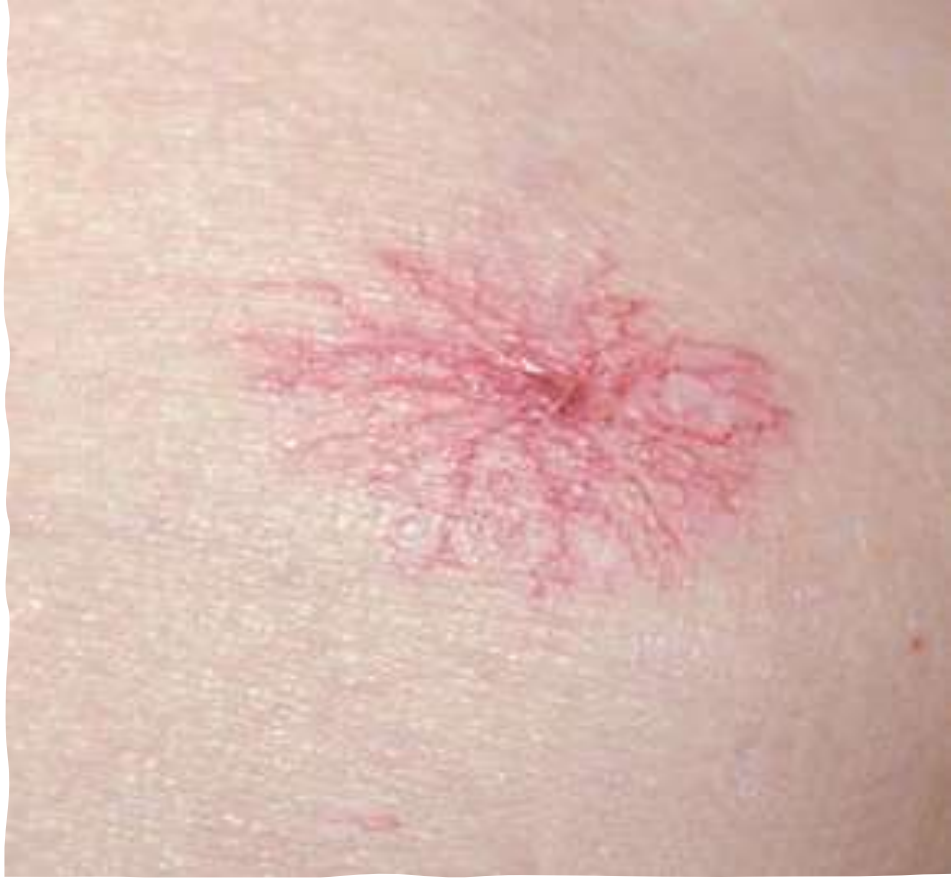
Pinguecula

- Small, yellowish fat pads.
- At periphery of sclerae.



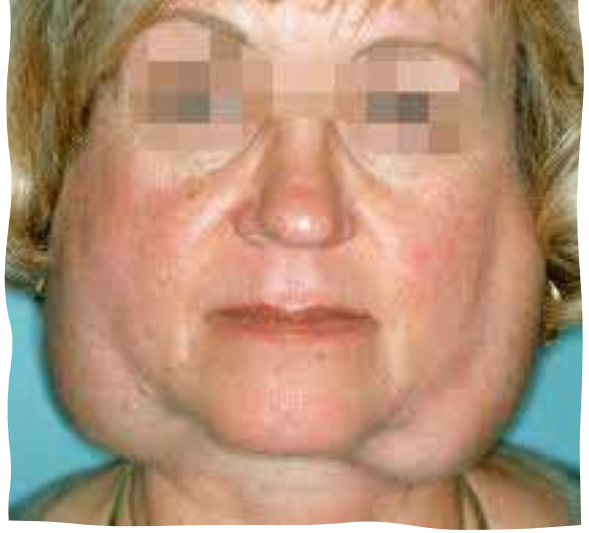
Spider Naevi

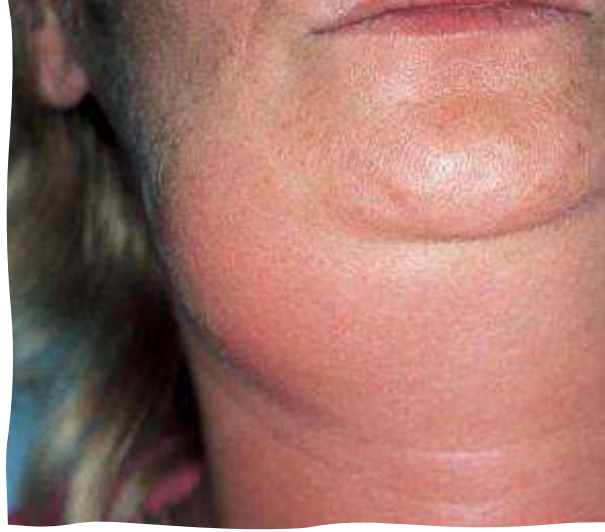
- Isolated telangiectasias.
- Fill from a central vessel.
- In distribution of SVC (upper trunk, arms & face).
- *Excess Estrogen + Reduced hepatic breakdown of sex steroids.*
- Healthy women >> up to 5 spider naevi.
- Normal during pregnancy.

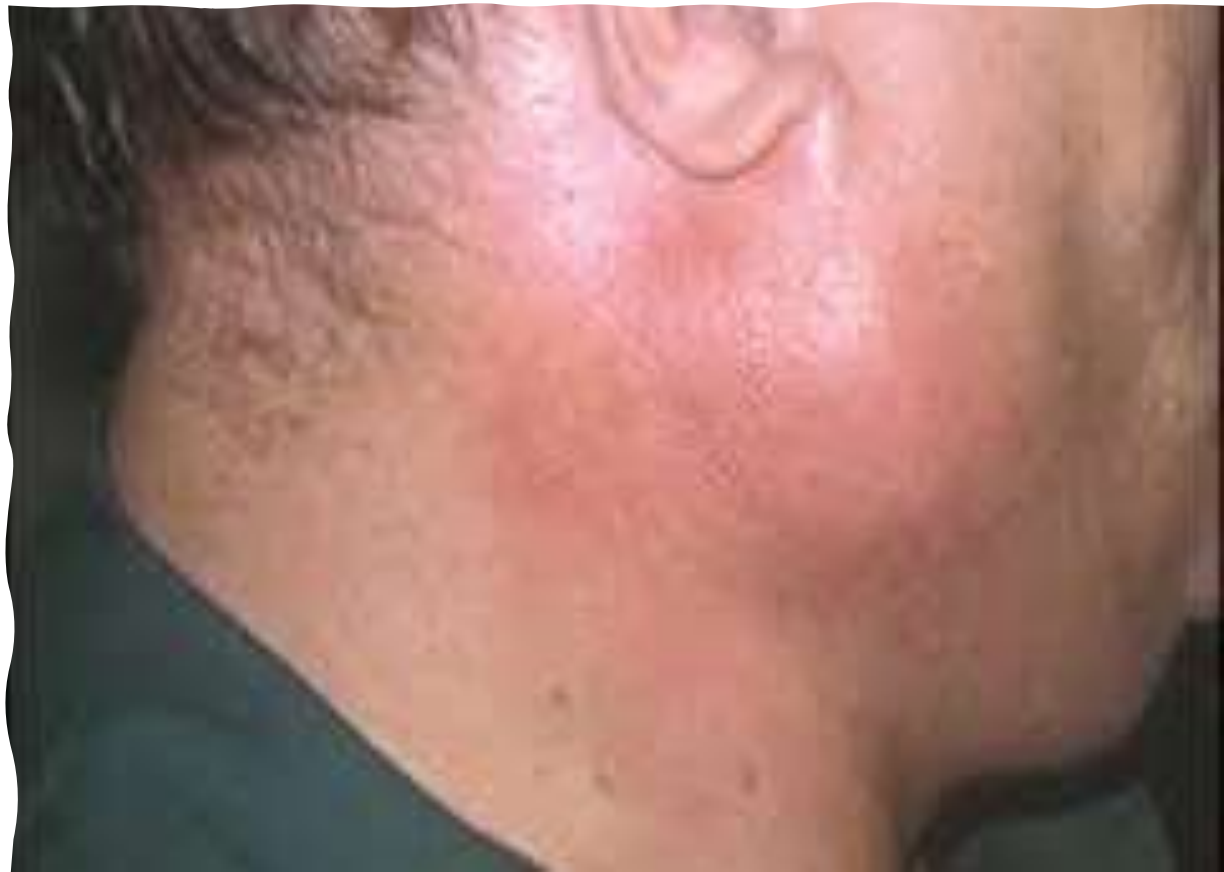


Sialadenitis
Sialadenosis

- Bilateral + Painless >> Chronic Alcohol Abuse, Bulimia.



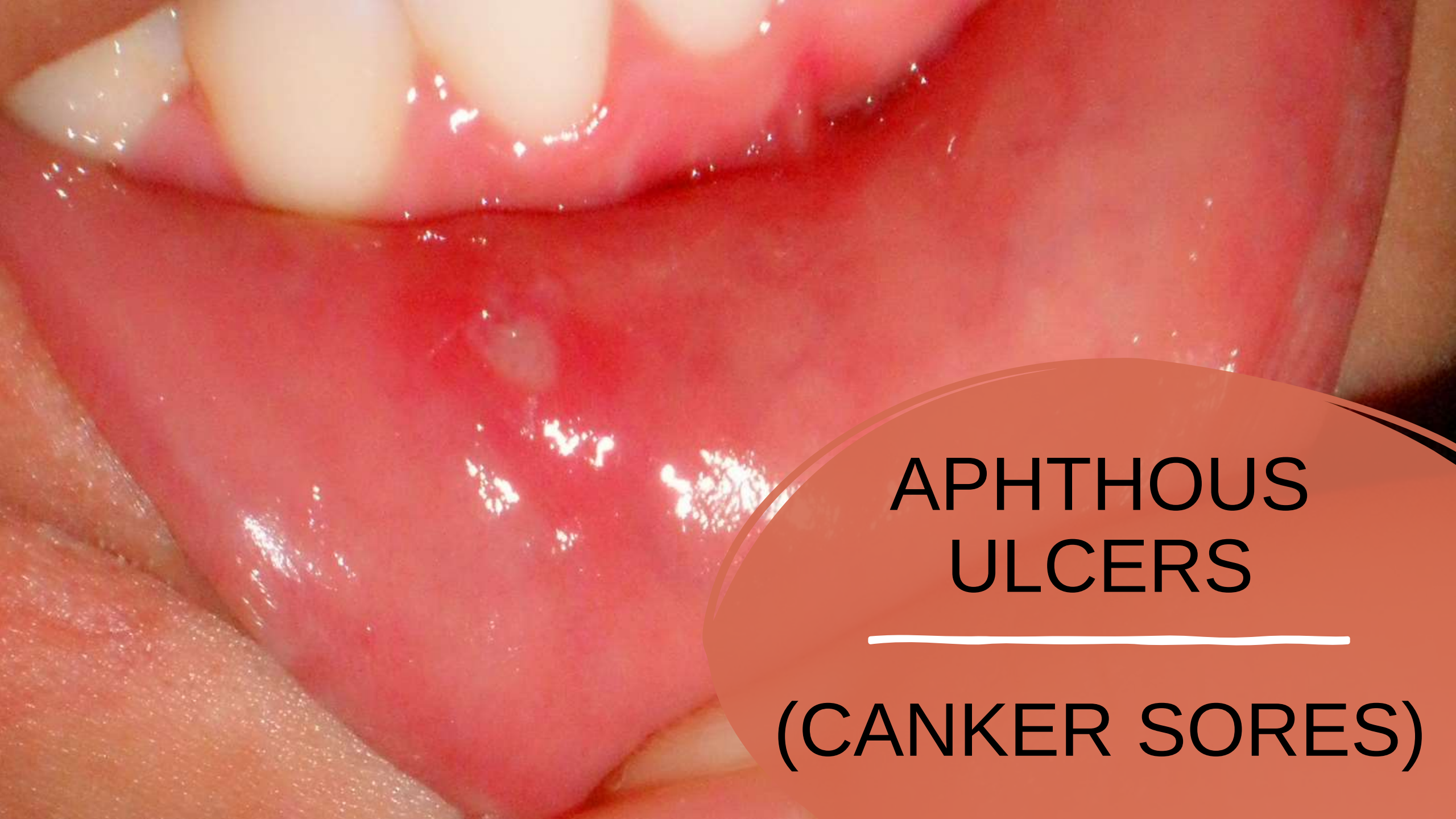




MOUTH, THROAT & TONGUE

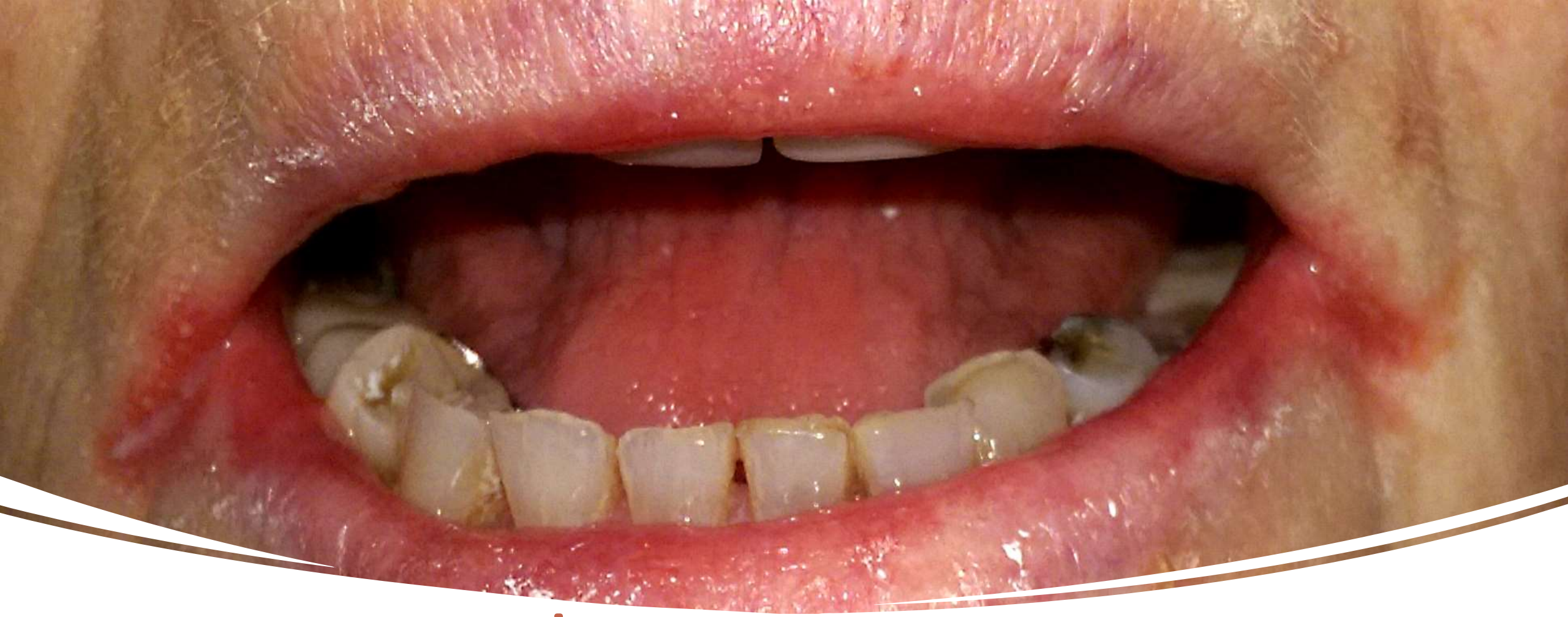
- **Aphthous Ulcers** (Celiac & IBD).
- **Angular Cheilitis** (Iron Def.).
- **Atrophic Glossitis** (Iron Def.)
- **Beefy Tongue** (Vit.B12 & Folate Def.)
- **Jaundice.**
- **Smell** (alcohol, fetor hepaticus, uraemia, melaena or ketones**).**

Fetor Hepaticus: distinctive 'mousy' odour of dimethyl sulphide on breath / evidence of portosystemic shunting (with or without encephalopathy).



APHTHOUS ULCERS

(CANKER SORES)

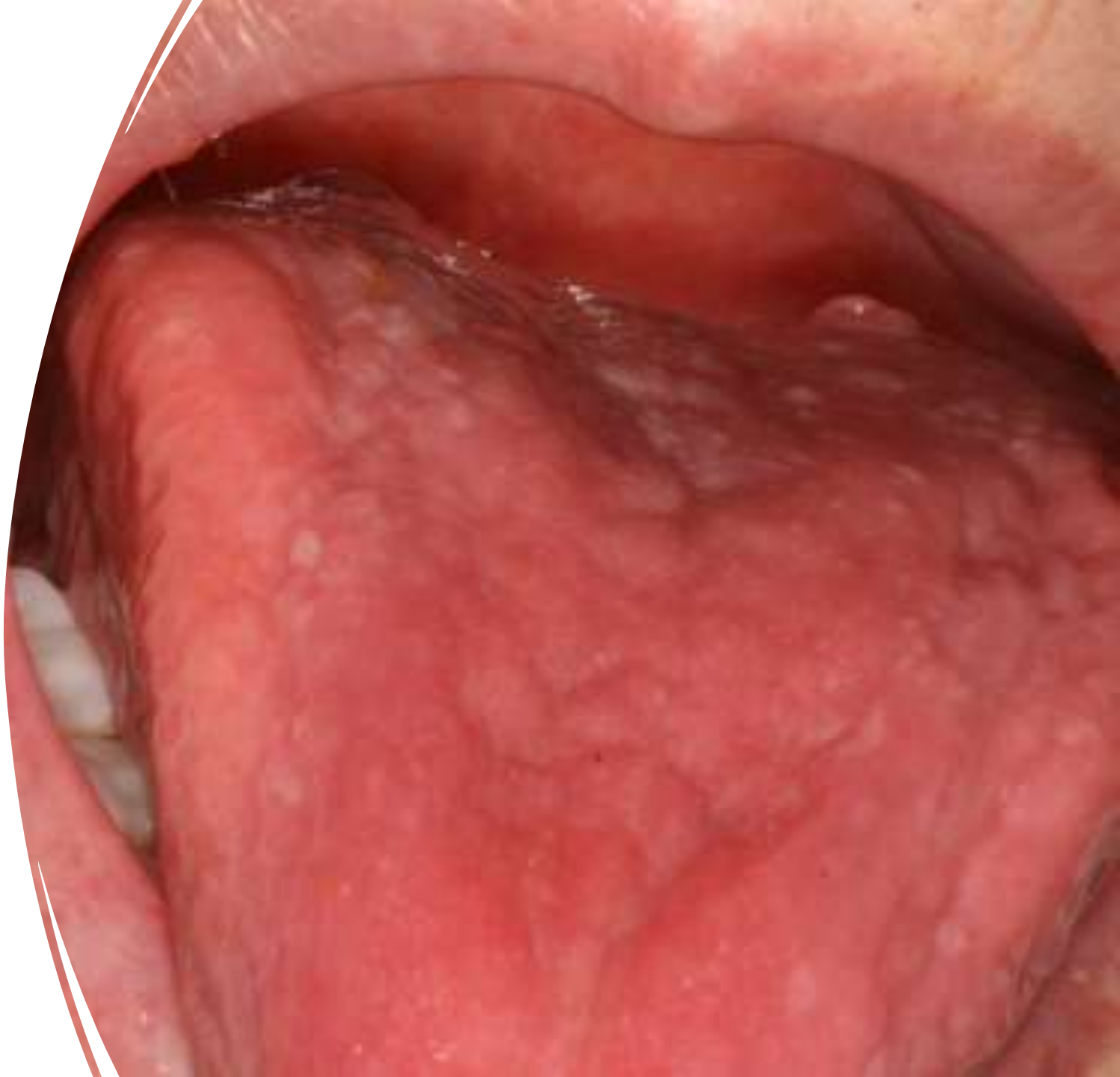


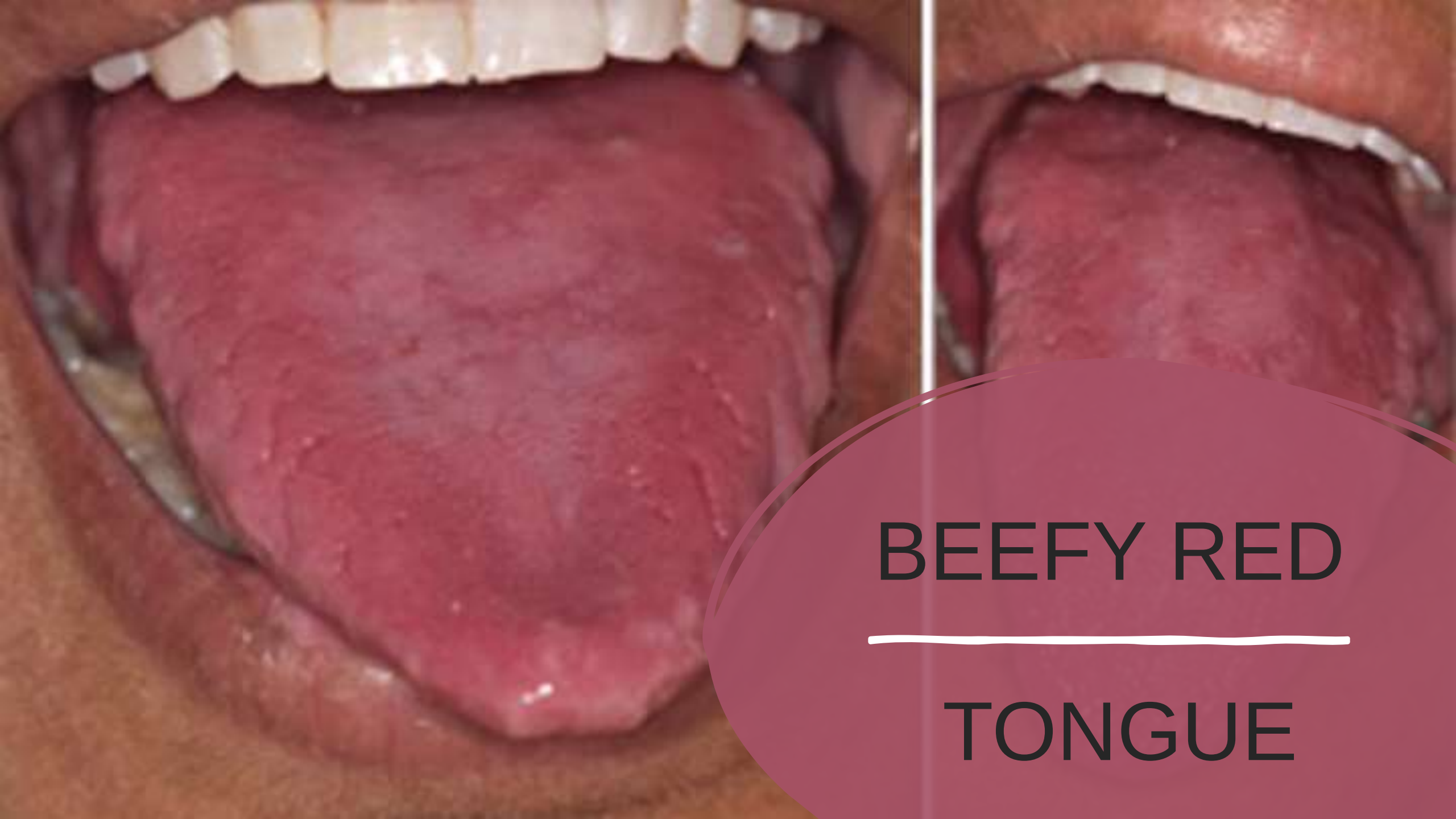
Angular Cheilitis

Painful cracks at mouth corners.

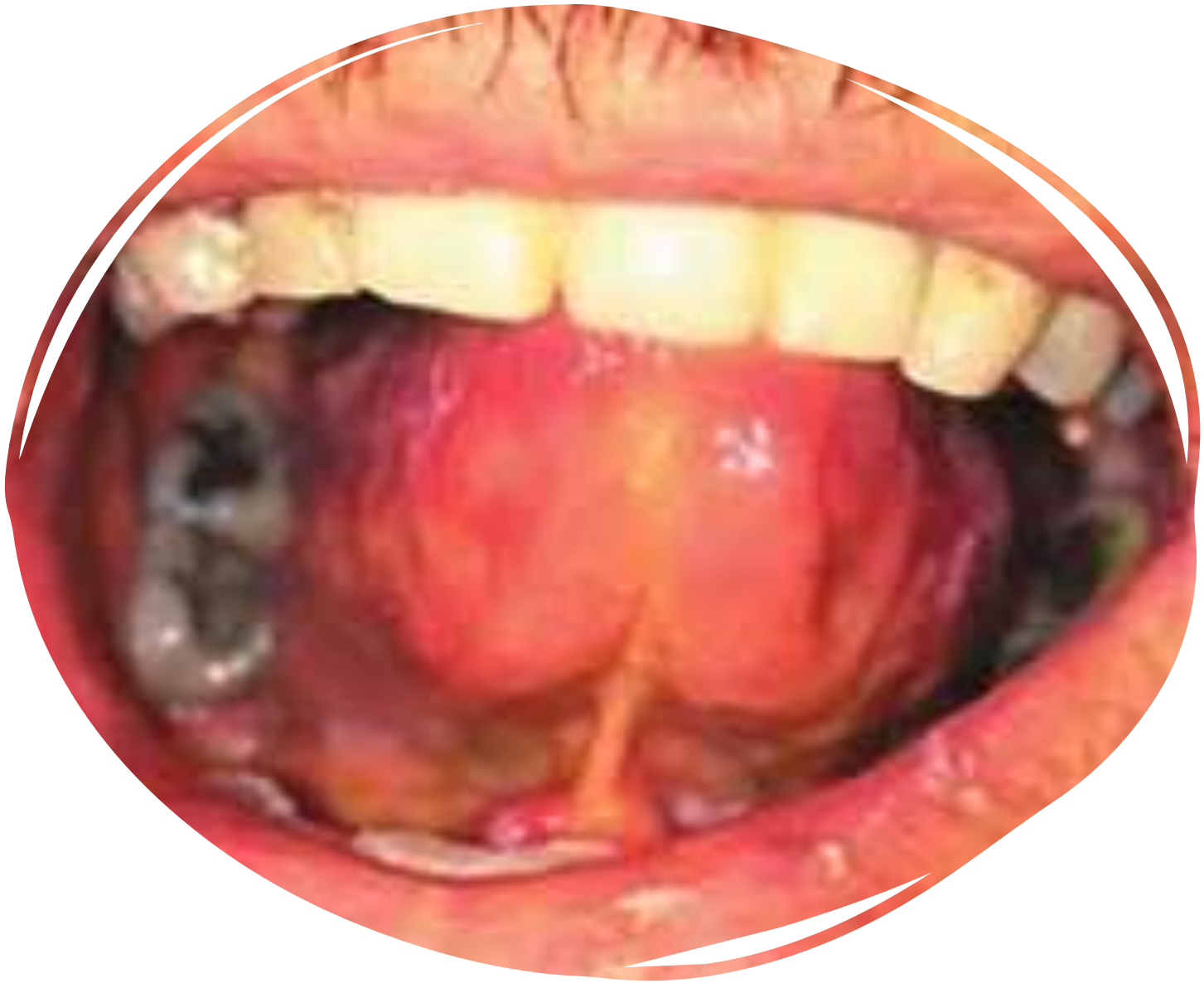
Atrophic Glossitis

Pale Smooth Tongue





BEEFY RED TONGUE



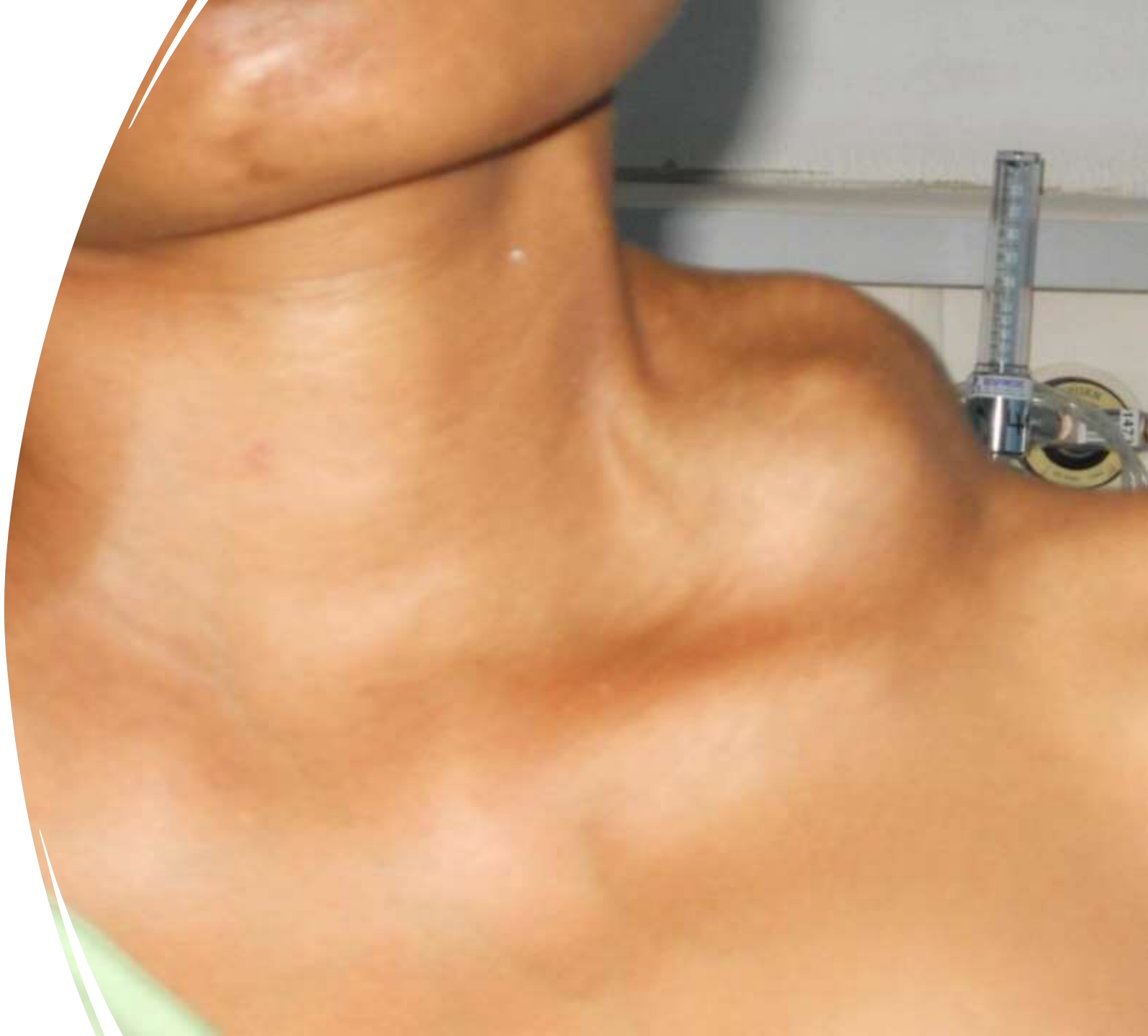
Jaundice

NECK (Cervical LNs)

- ✓ **Enlargement of Left Supraclavicular LN (*Troisier's sign*).**
  - Gastric + Pancreatic CA.

- ✓ **Widespread LAP + Hepatosplenomegaly.**
  - Lymphoma.

Troisier's Sign

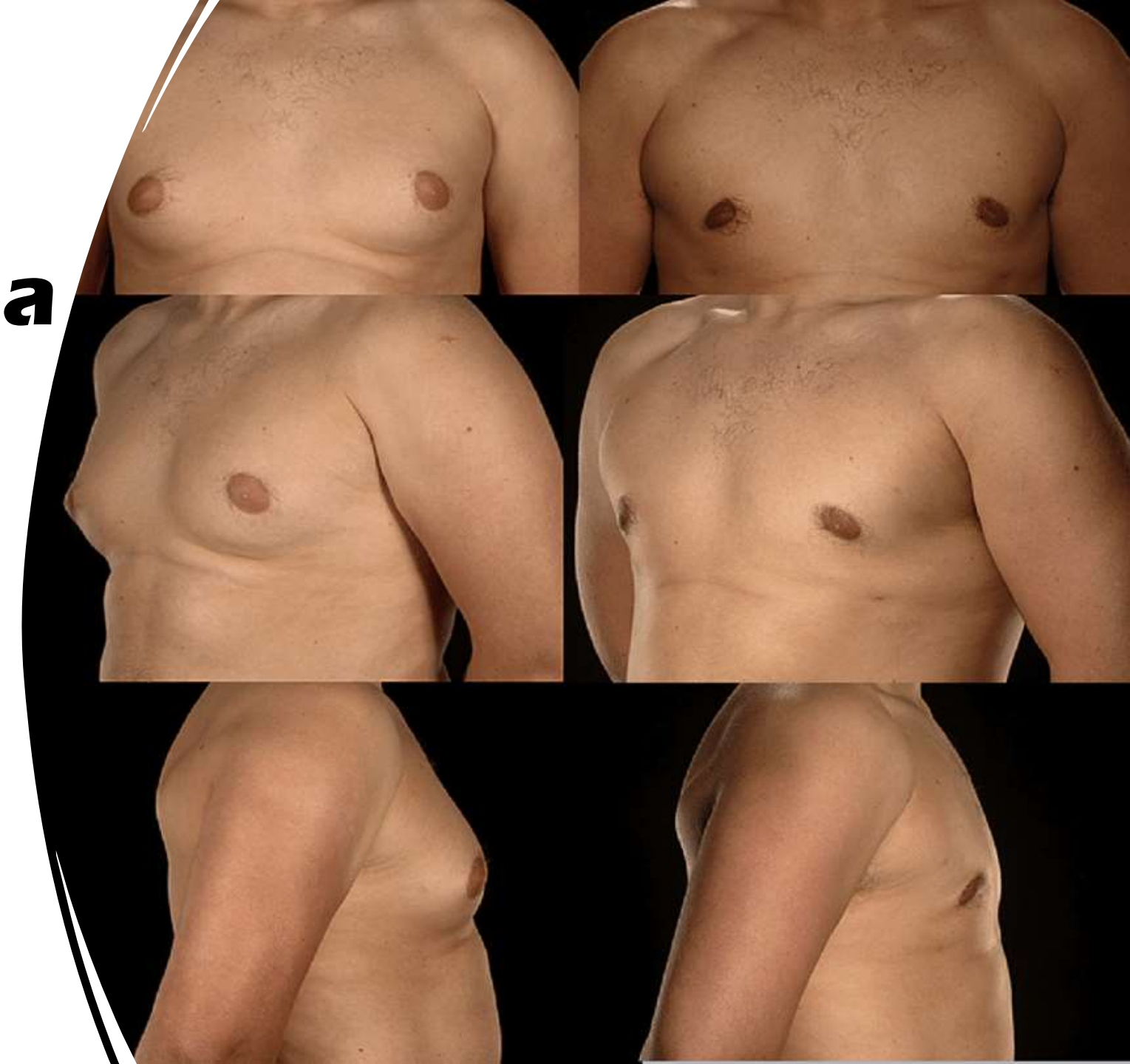


CHEST

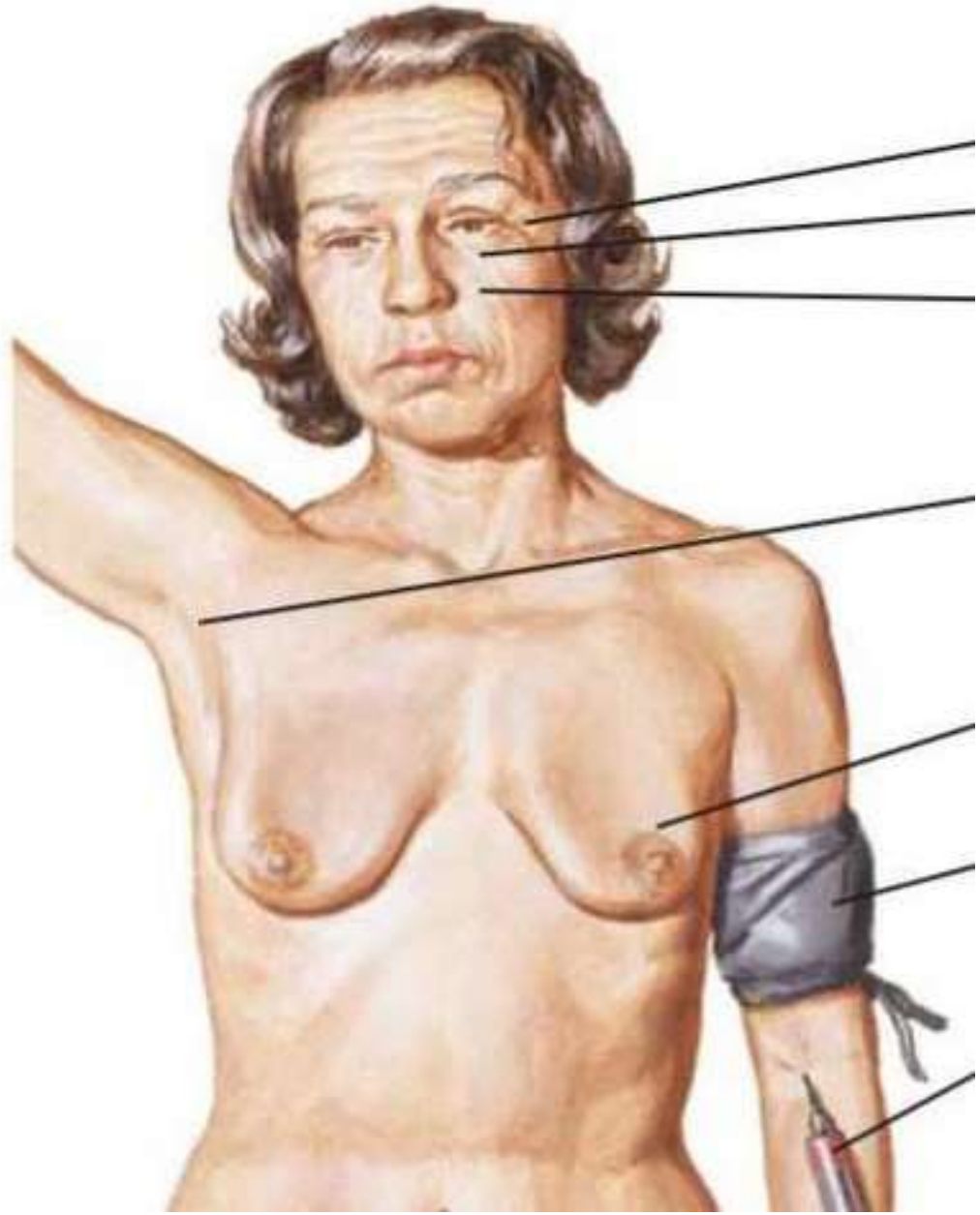
- ✓ Gynecomastia
- ✓ Breast Atrophy.
- ✓ Hair Distribution.
- ✓ Spider Nivea.
- ✓ Scratch Marks.

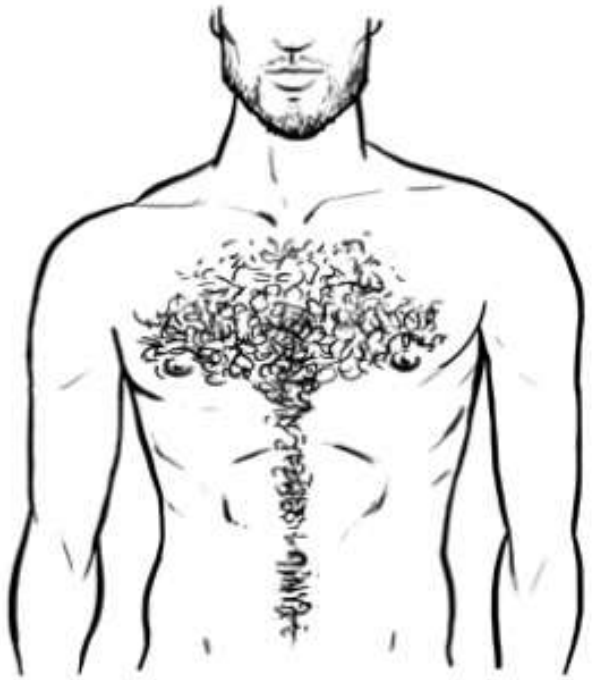
Gynaecomastia

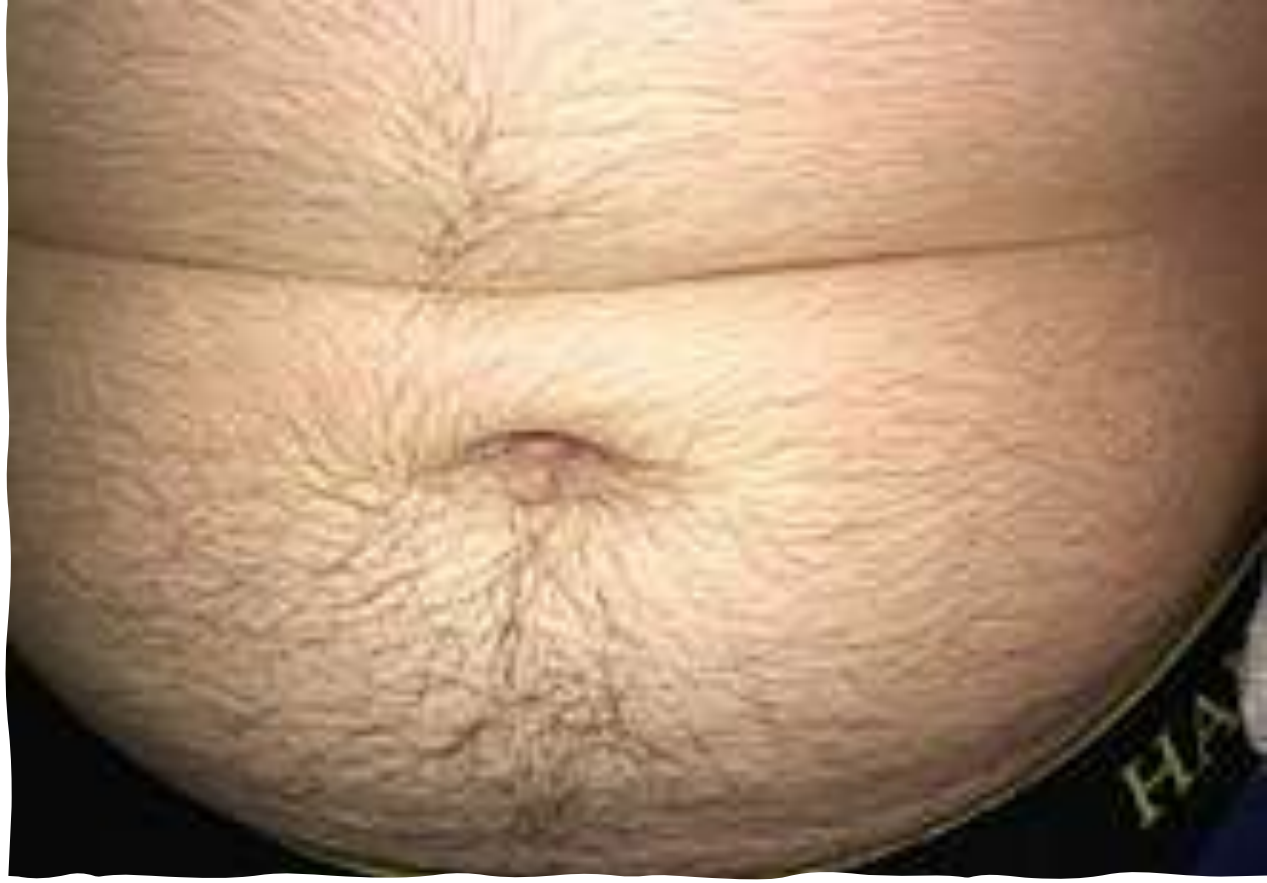
- Breast enlargement in ***Males***.
- Reduced breakdown of ***Estrogens***.



BREAST ATROPHY

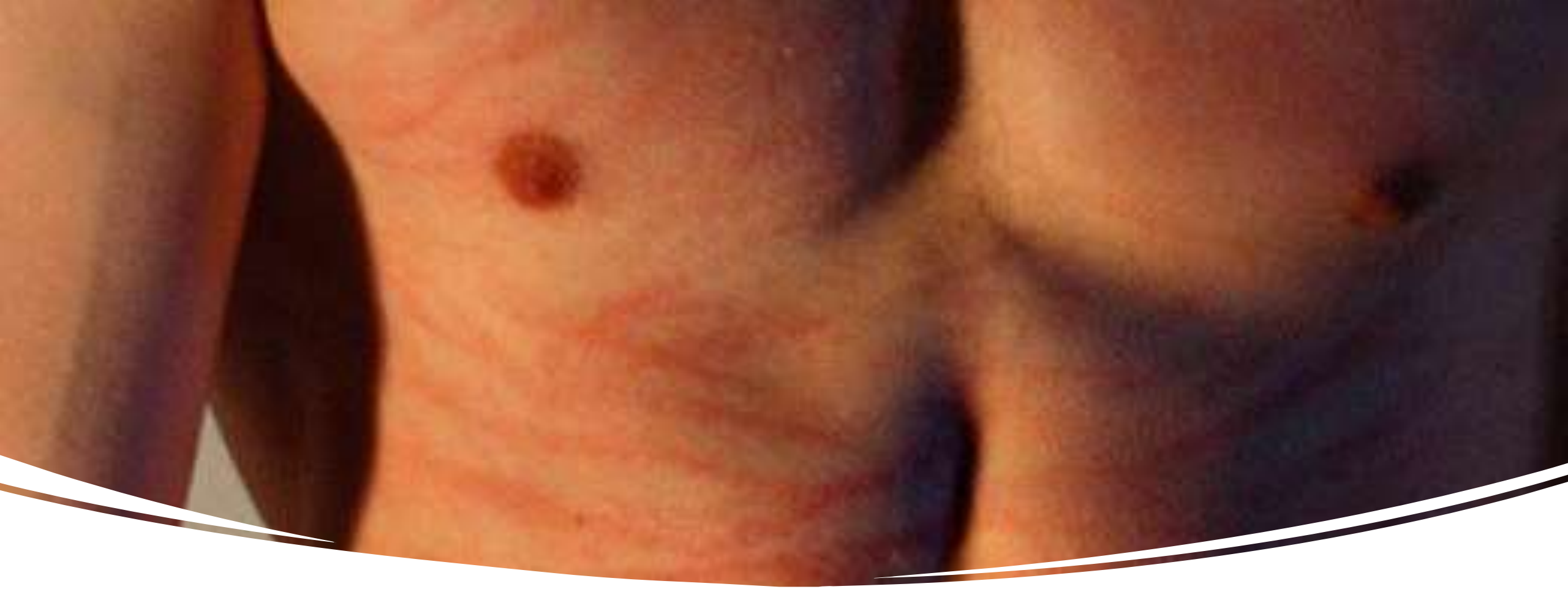




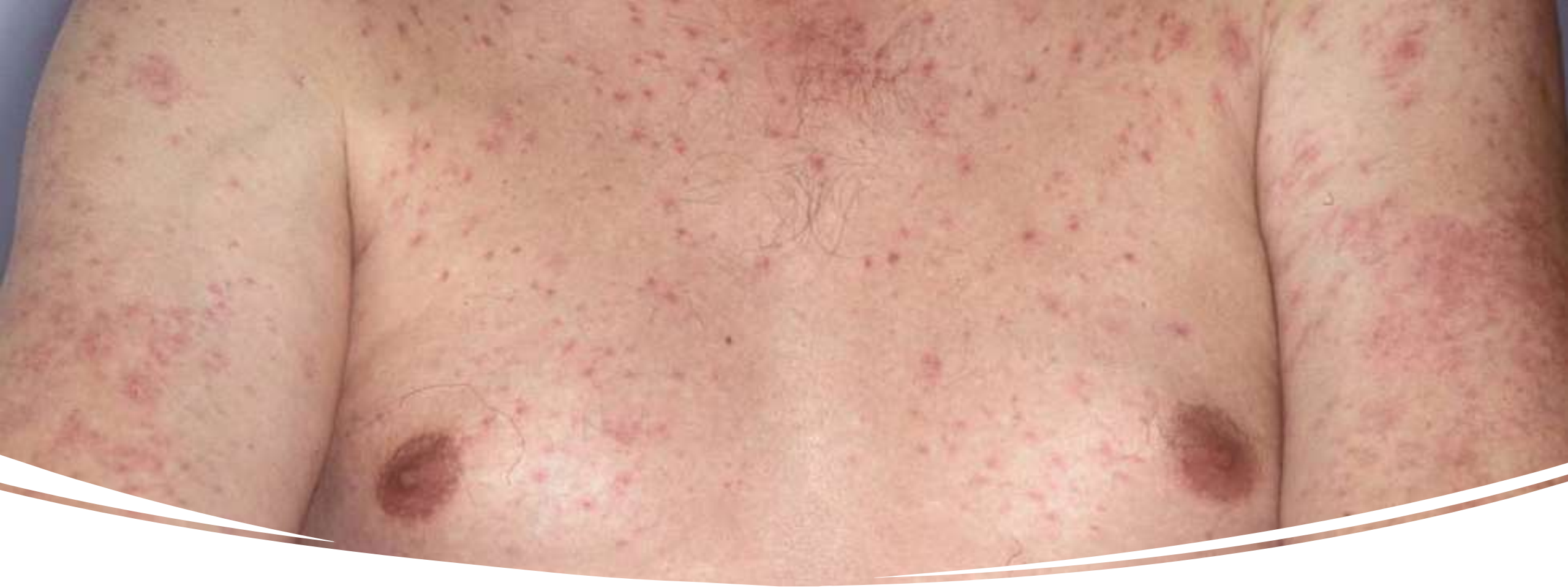


Hair Distribution

- Normal Male-Pattern of Hair Distribution.
- Lost in Chronic Liver Disease.

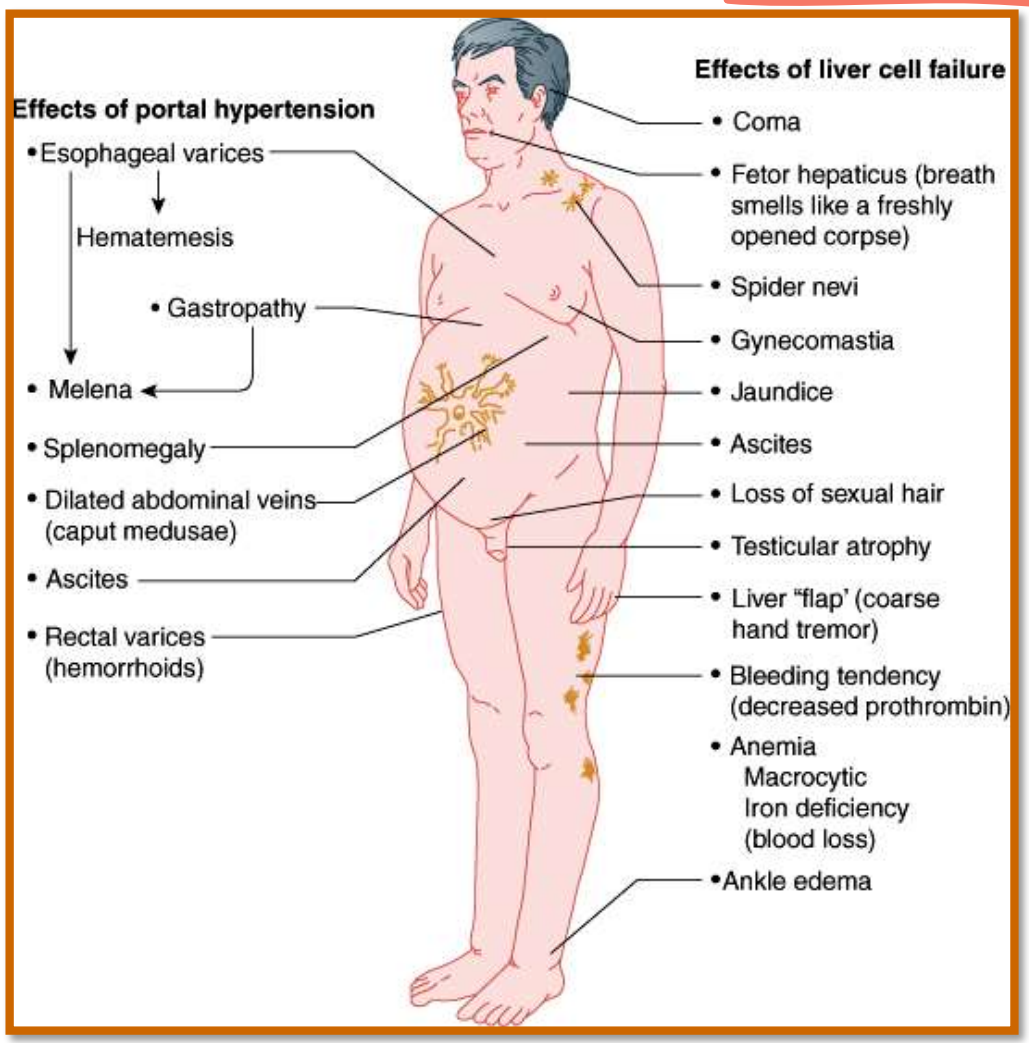


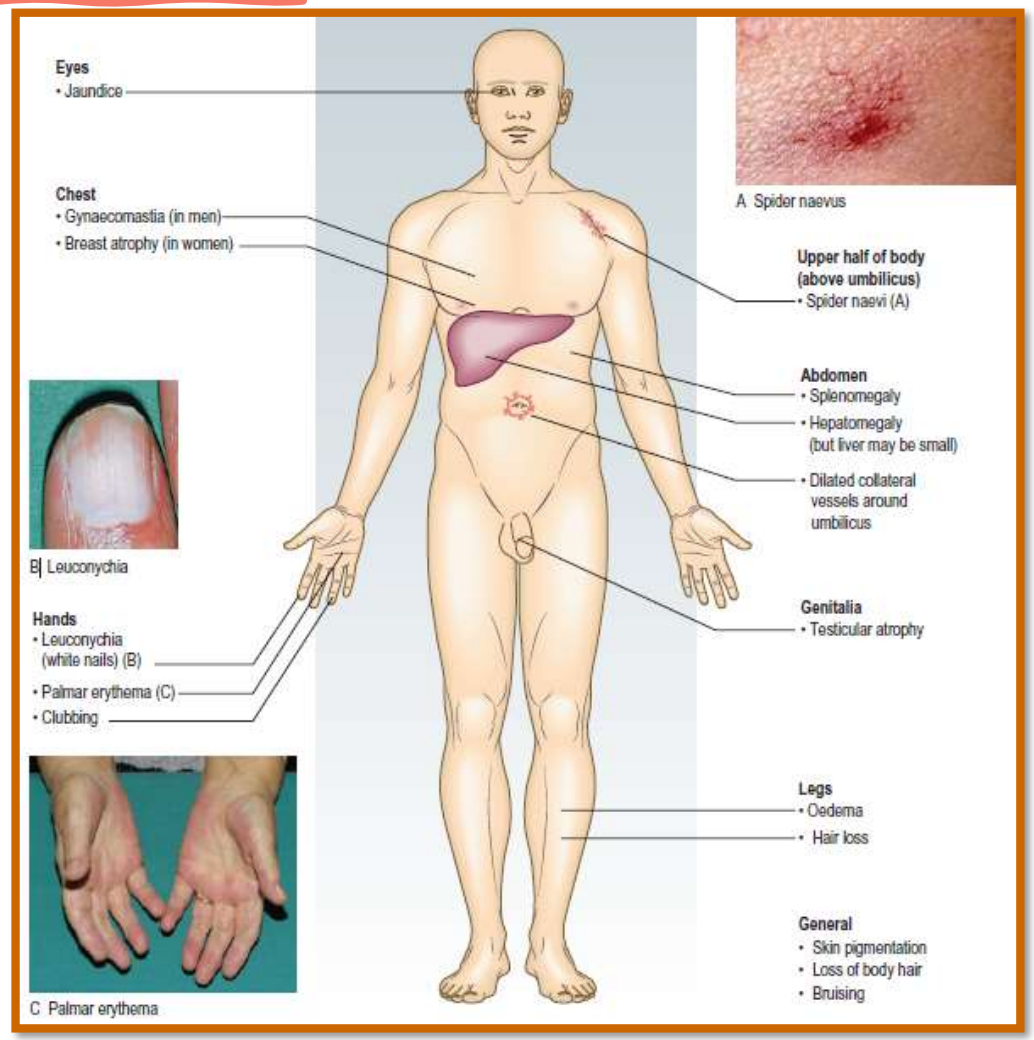
Chest | Scratch Marks



Chest | Spider Nivea

Chronic Liver Disease





Signs suggest Liver Failure:

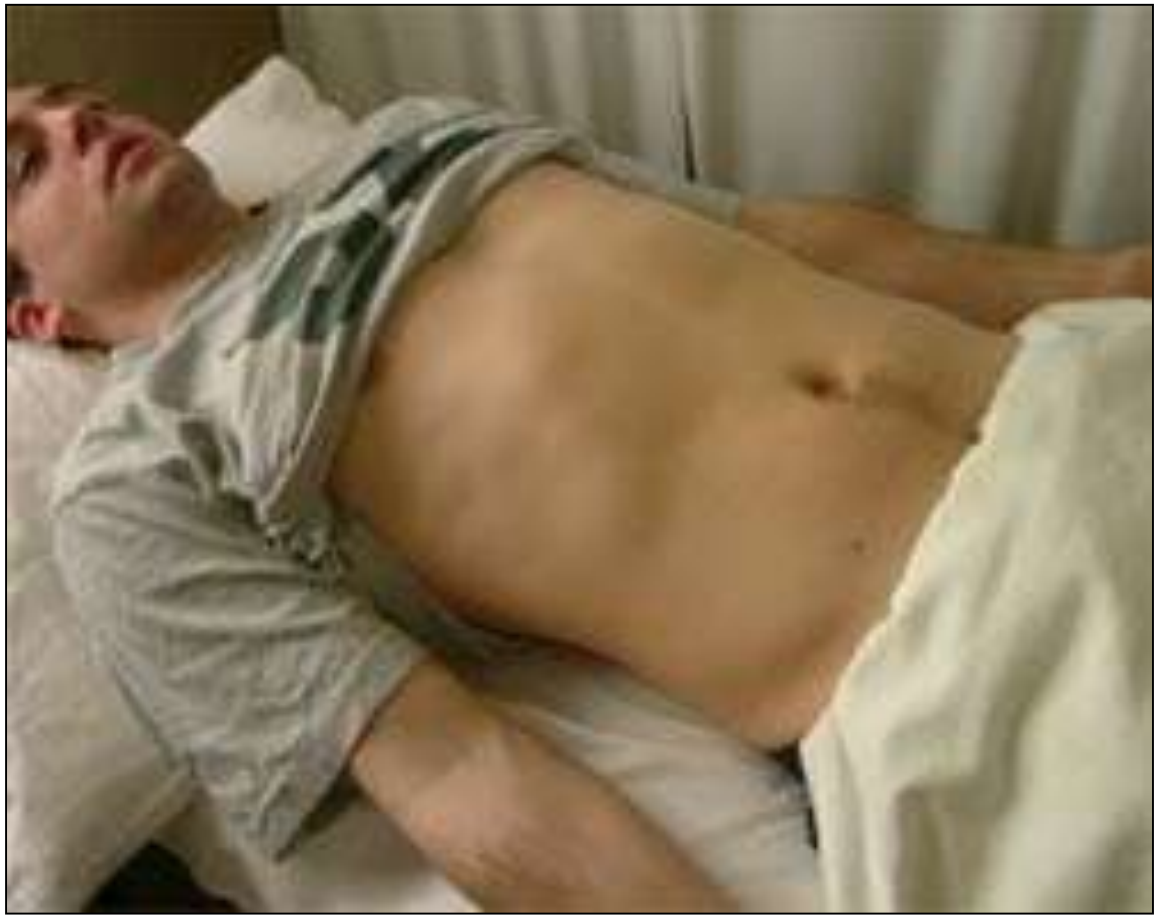
1. Asterixis.
2. Fetor Hepaticus.
3. Altered mental state [varying from drowsiness with day/night pattern reversed, through confusion & disorientation, to unresponsive coma].
4. Jaundice.
5. Ascites.
6. Late Neurological Features [spasticity, extension of arms & legs, & extensor plantar responses].

ABDOMEN EXAMINATION

POSITION

- **Supine** + **Head on 1-2 pillows** (to relax abdominal wall muscles) + **Legs & Arms stretched.**
- ***Extra pillows to support patients with kyphosis or breathlessness.***

EXPOSURE



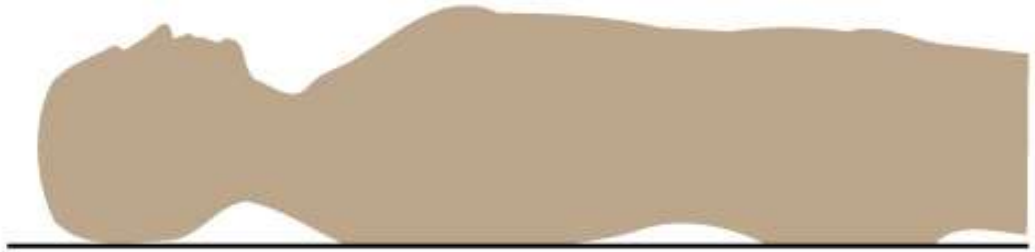
- Nipples-To-Midthighs.
- Xiphisternum-To-Symphysis Pubis.

INSPECTION From Foot of Bed

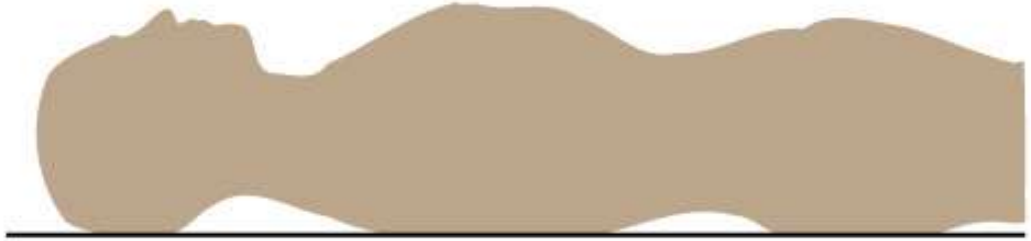
1. **Contour.**
2. **Symmetry.**
3. **Umbilicus.**
4. **Abdominal respiration**
   (absent in peritonitis >> thoracic respiration).

CONTOUR

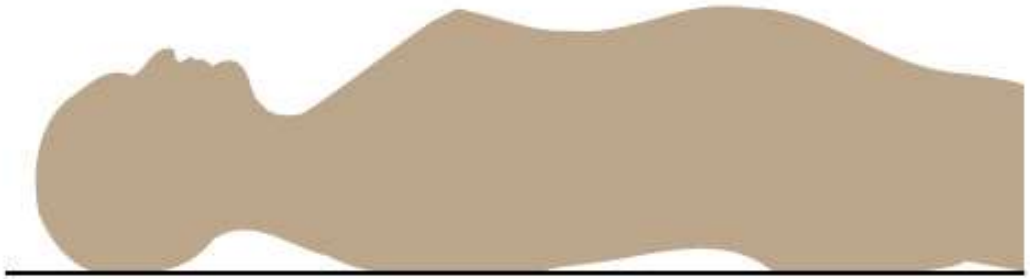
- **Flat, Scaphoid, Protuberant.**
- **5 F's: Fluid, Flatus, Feces, Fetus, Fat.**



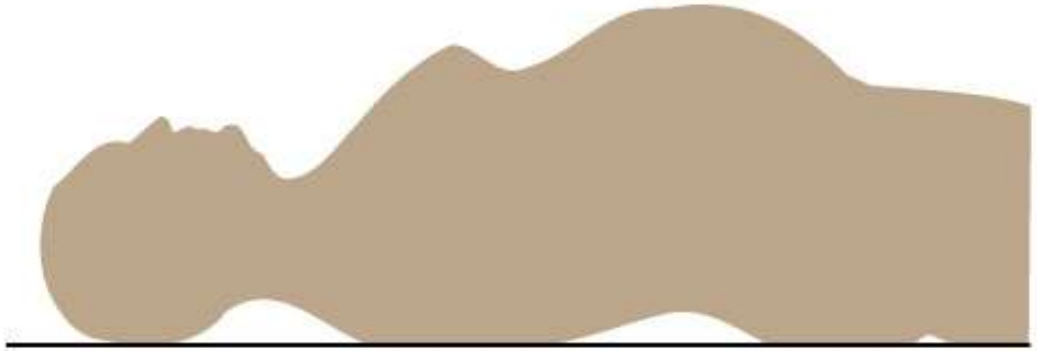
Flat



Scaphoid



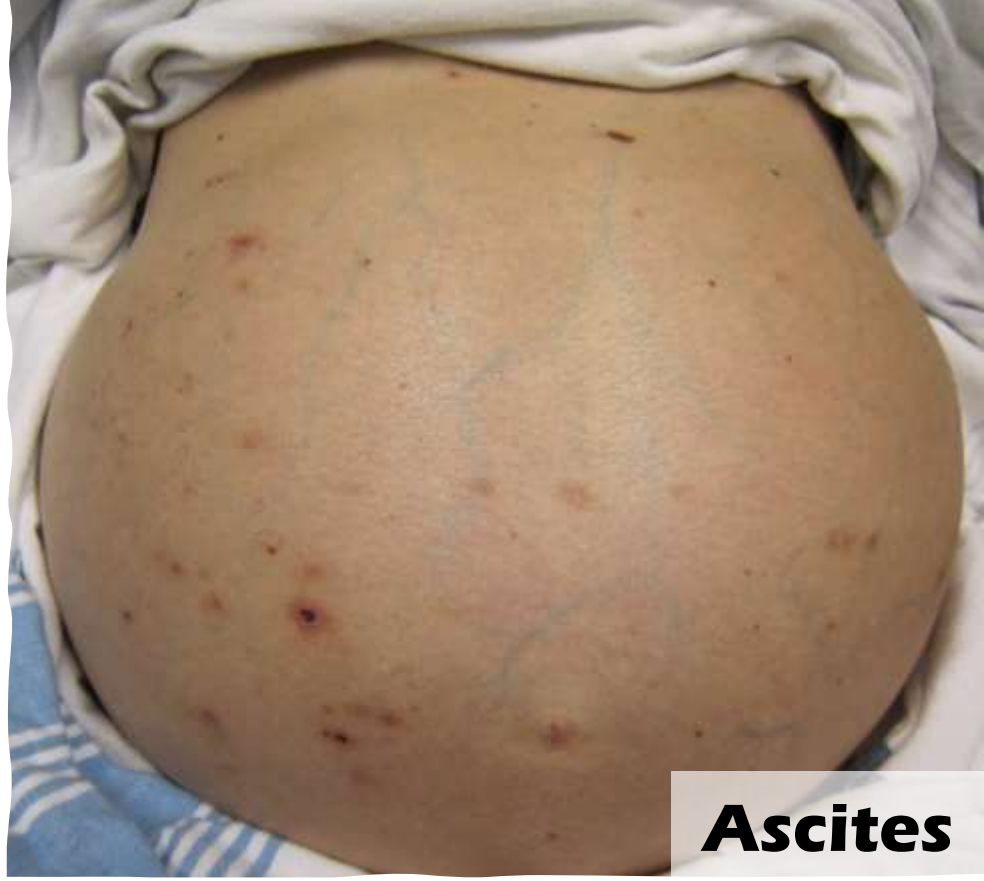
Rounded



Protuberant

SYMMETRY

- Look tangentially from foot of bed & across abdomen.
- **Abdominal swelling:**
  - **Diffuse**: ascites or intestinal obstruction.
  - **Localised**: urinary retention, mass or enlarged organ such as liver.



Ascites

Urinary Retention

UMBILICUS

- **Sunken**: Obesity.
- **Inverted**: Normal.
- **Flat**: Ascites.
- **Everted**: Ascites.

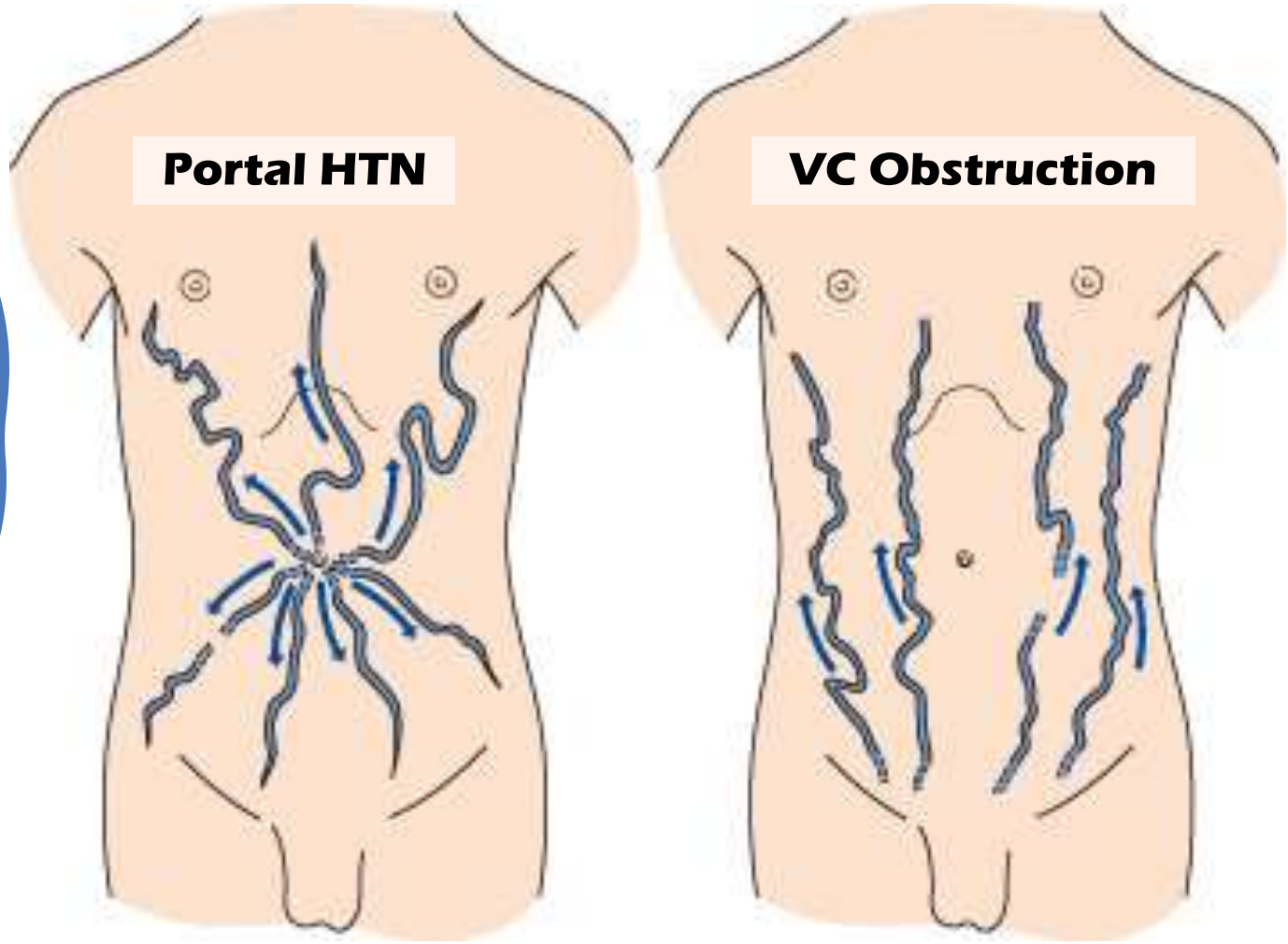
NORMAL ABDOMEN

- ✓ **Flat or slightly scaphoid.**
- ✓ **Symmetrical.**
- ✓ **Respiration is principally Diaphragmatic [at rest].**
- ✓ **Umbilicus is usually Inverted.**

INSPECTION From Right of Patie

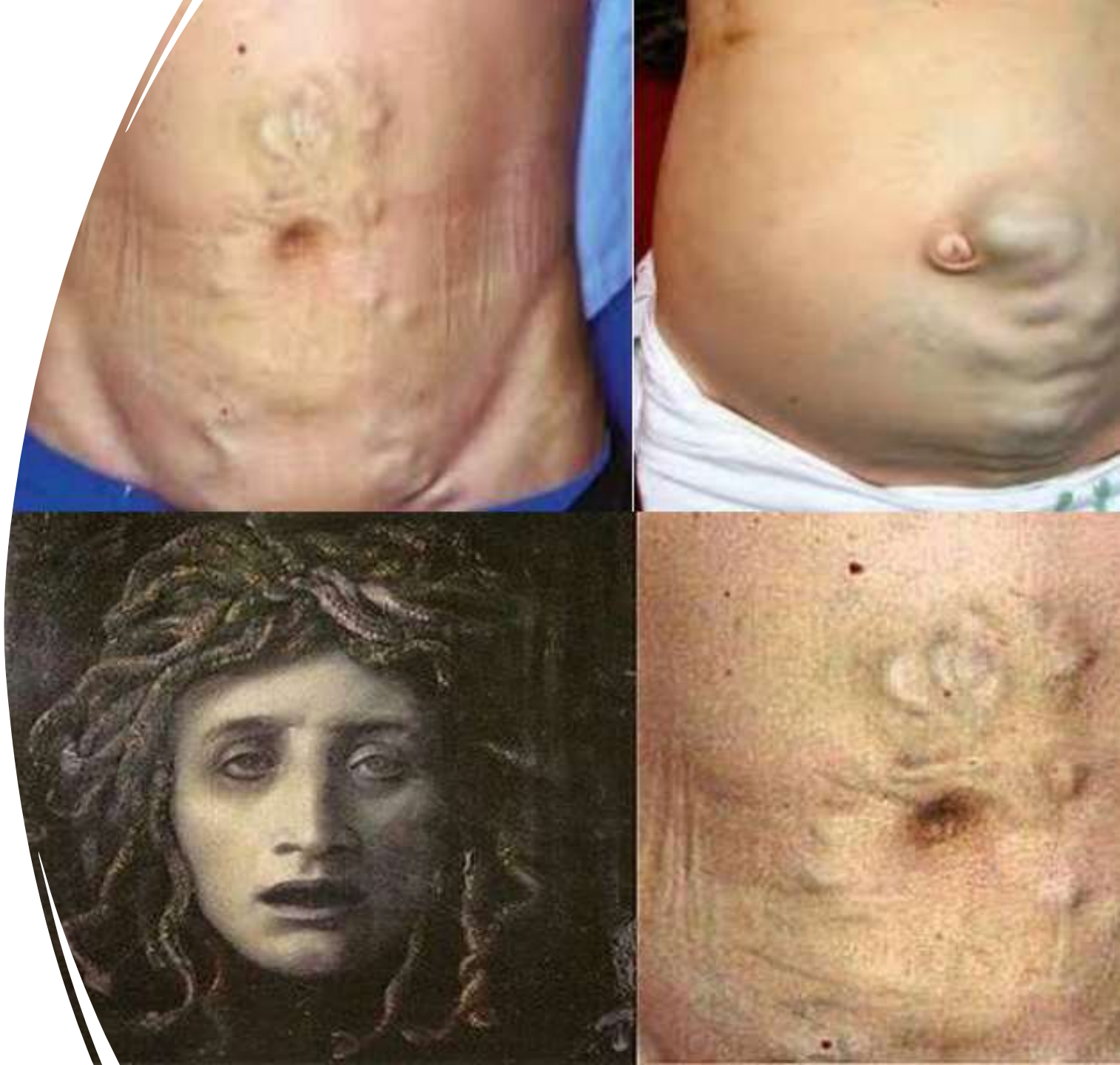
1. **Hair distribution.**
2. **Stomas.**
3. **Scars.**
4. **Skin Lesions.**
5. **Bruising.**
6. **Visible Veins (Caput Medusa).**
7. **Visible Masses.**
8. **Visible Pulsation.**
9. **Visible Peristalsis.**

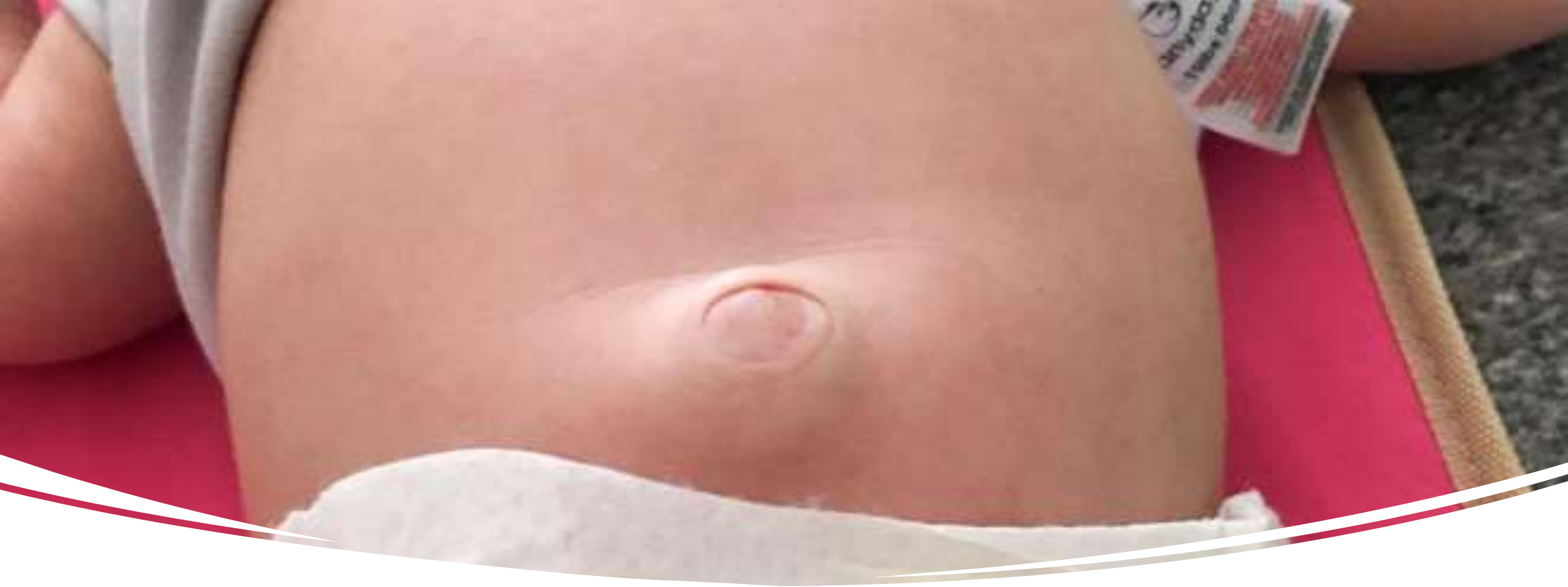
VISIBLE DILATED VEINS



Caput Medusa

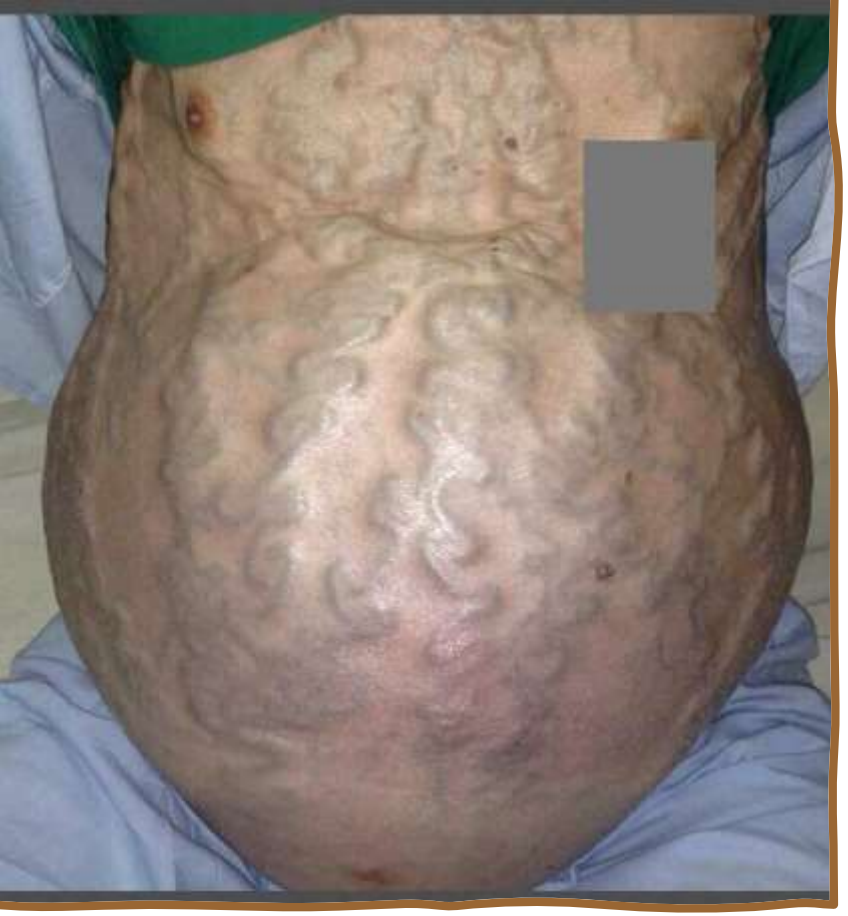
- In portal HTN.
- Re-canalisation of umbilical vein along the falciform ligament.
- Drain away from umbilicus.
- Umbilicus: bluish & Distended due to umbilical varix.

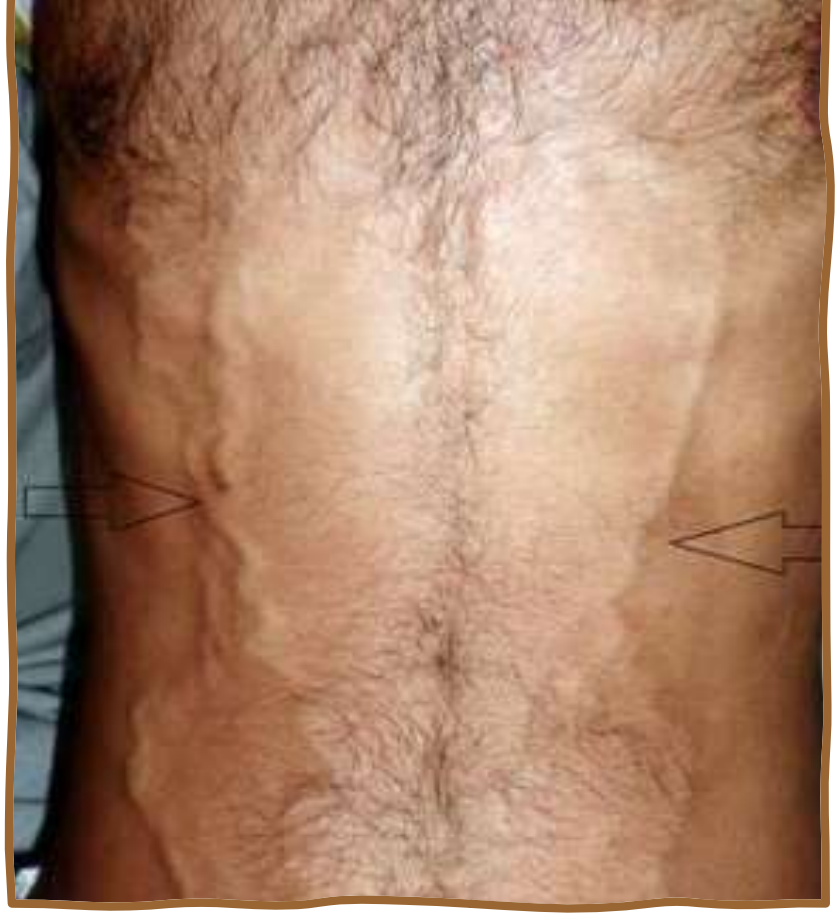


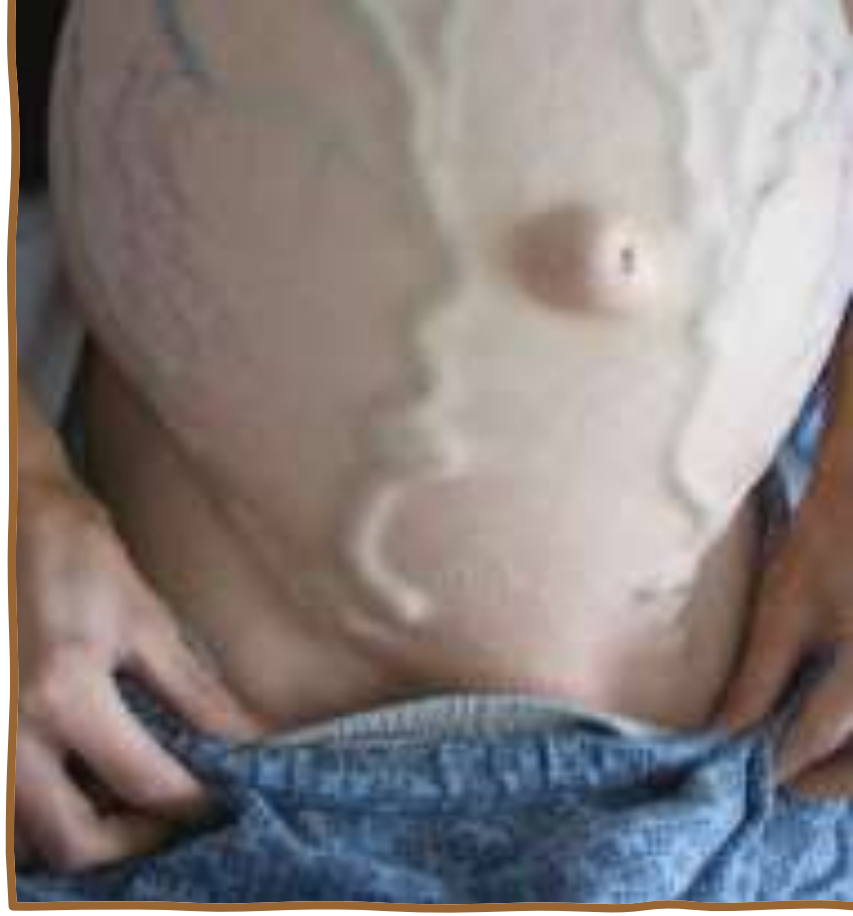


Umbilical Hernia

- Distended & everted umbilicus.
- Does not appear vascular.
- Palpable cough impulse.







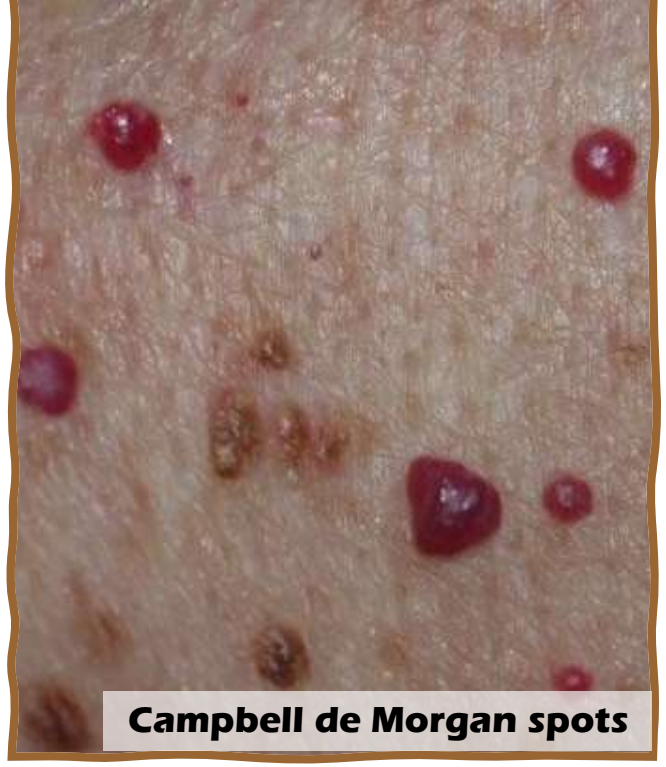
Dilated Tortuous Veins

- Collateral veins >> IVC obstruction.
- Blood flows superiorly.
- *Rarely, SVC obstruction gives rise to similarly distended abdominal veins, but these all flow inferiorly.*

SKIN LESIONS

- **Seborrheic Warts** (Senile Warts / Seborrheic Keratosis).
  - Age-Related.
  - ranging from **pink** to **brown** or black.

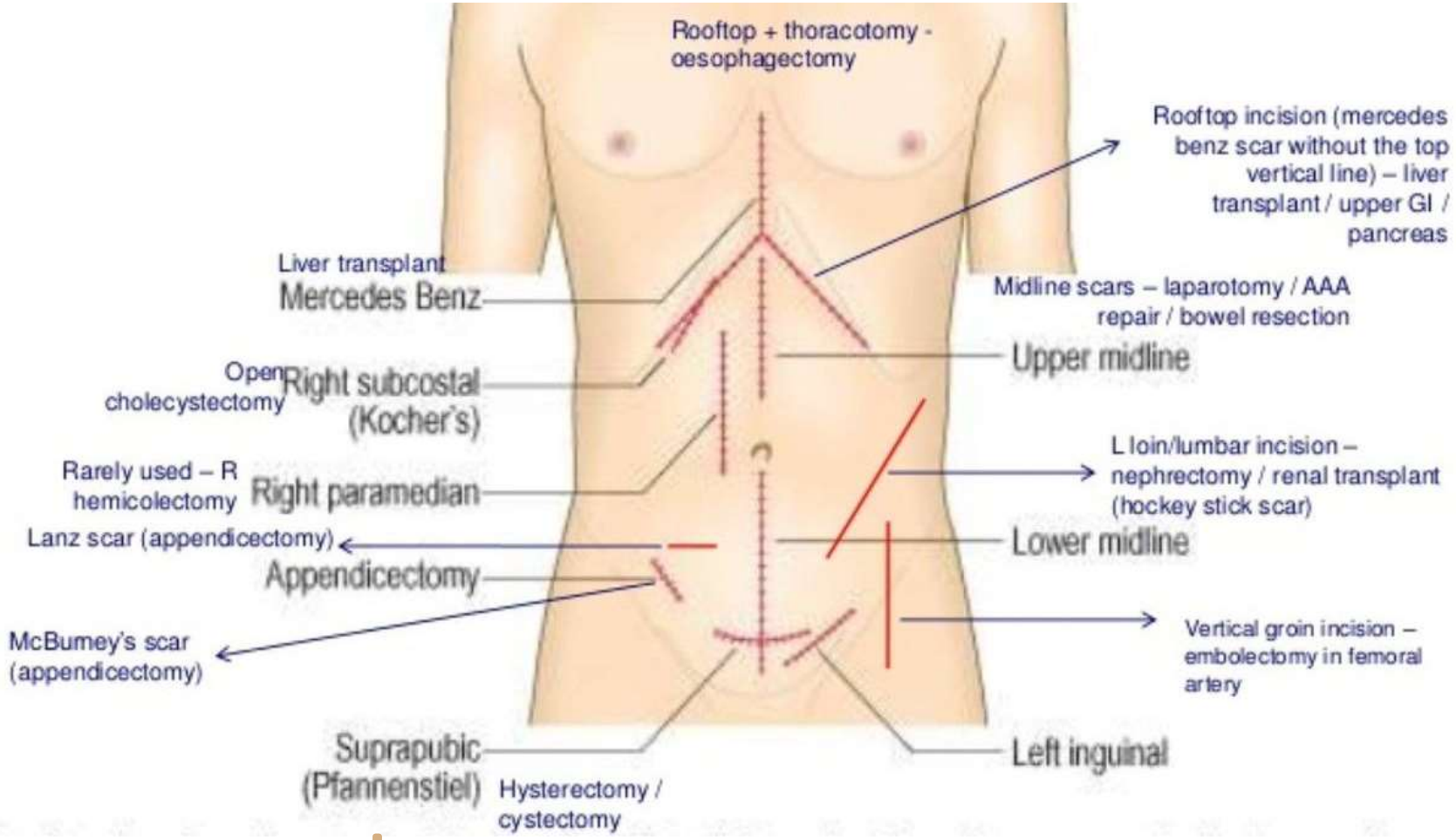
- **Haemangiomas** (Campbell de Morgan spots / Cherry Angiomas).
  - Age-Related.


Campbell de Morgan spots


Campbell de Morgan spot


Seborrheic Wart


Seborrheic Warts



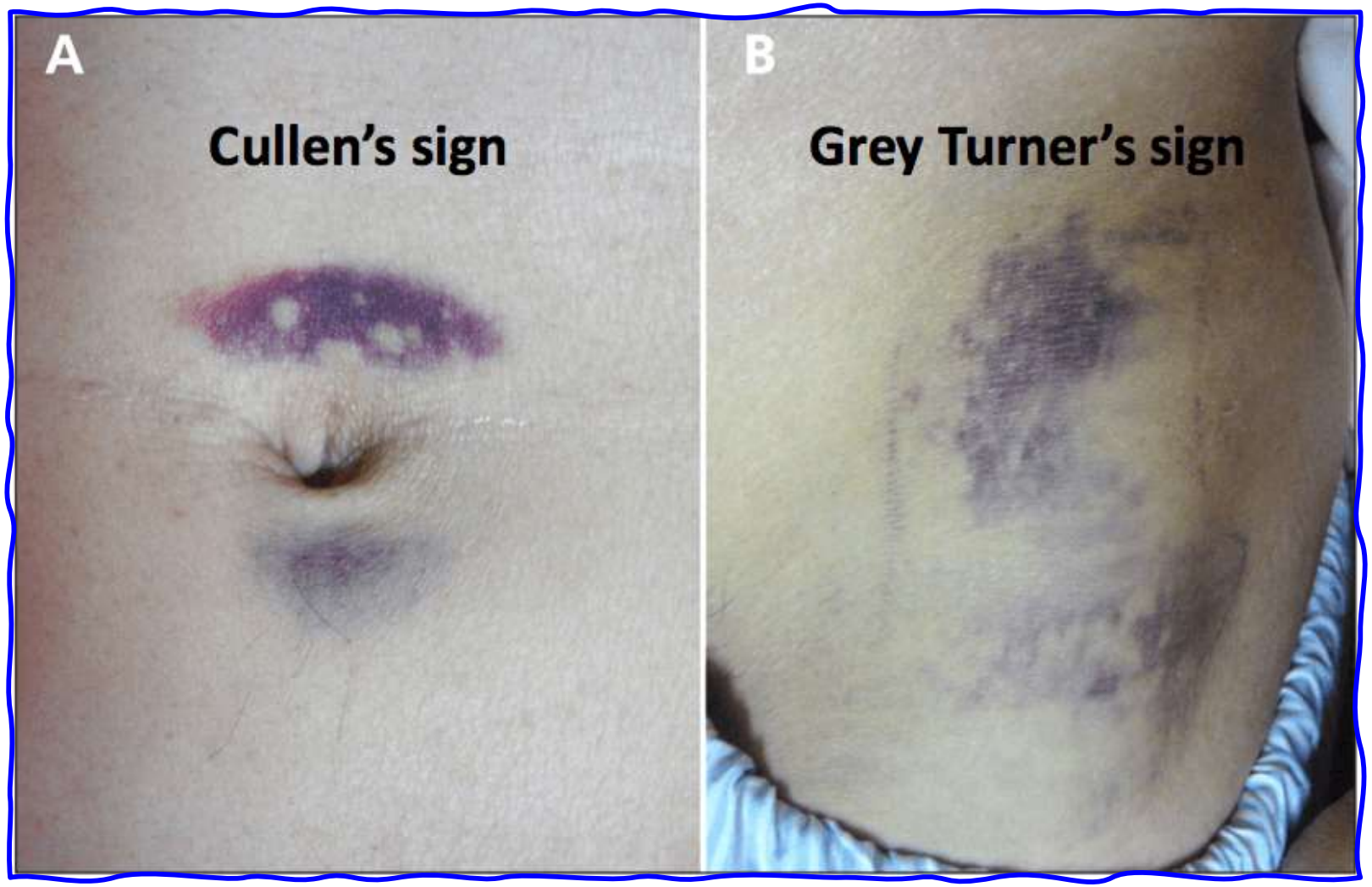
SURGICAL SCARS

Midline & Oblique incisions avoid damage to innervation of abdominal musculature & later development of incisional hernias.

Laparoscopic Surgical Ports Puncture Scars

Old Pale vs. Recent Red Scars

BRUISING



STOMAS

- **Surgically created** opening between *skin & hollow viscus*.
- **To divert** feces outside body, where it's collected by bag.
- **Ile**ostomy vs. **Col**ostomy.

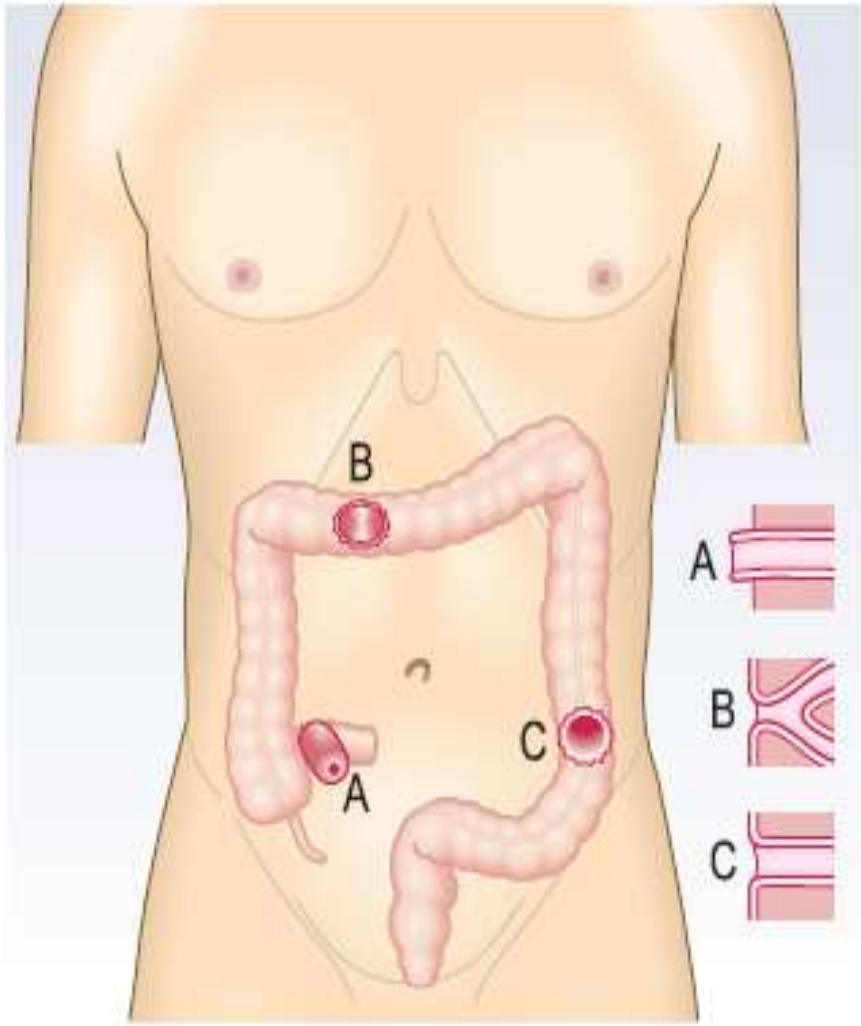
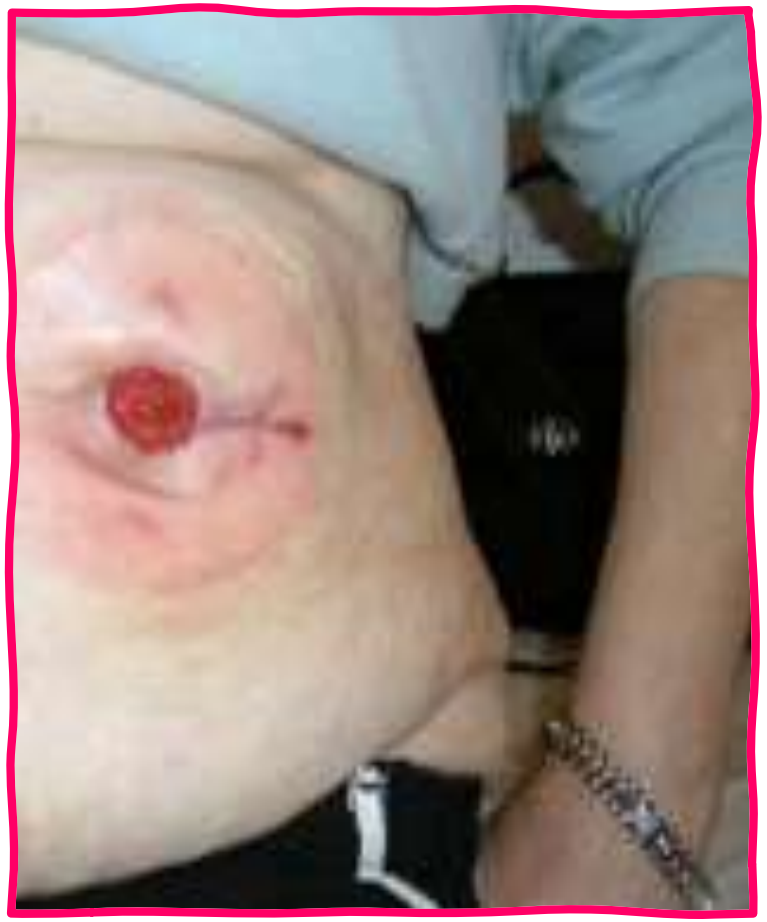
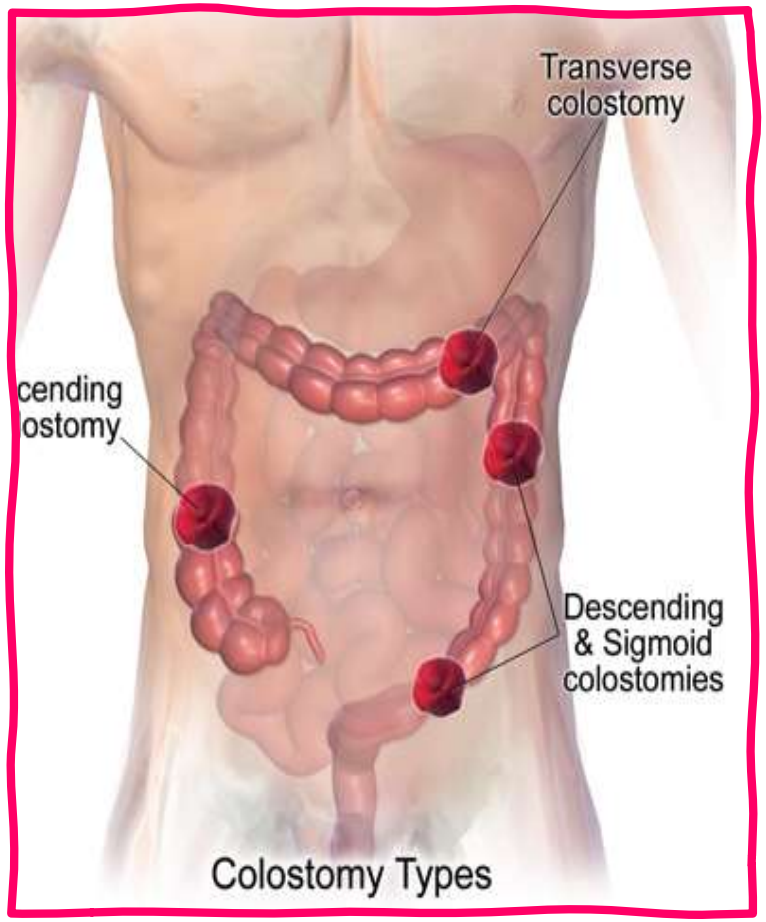


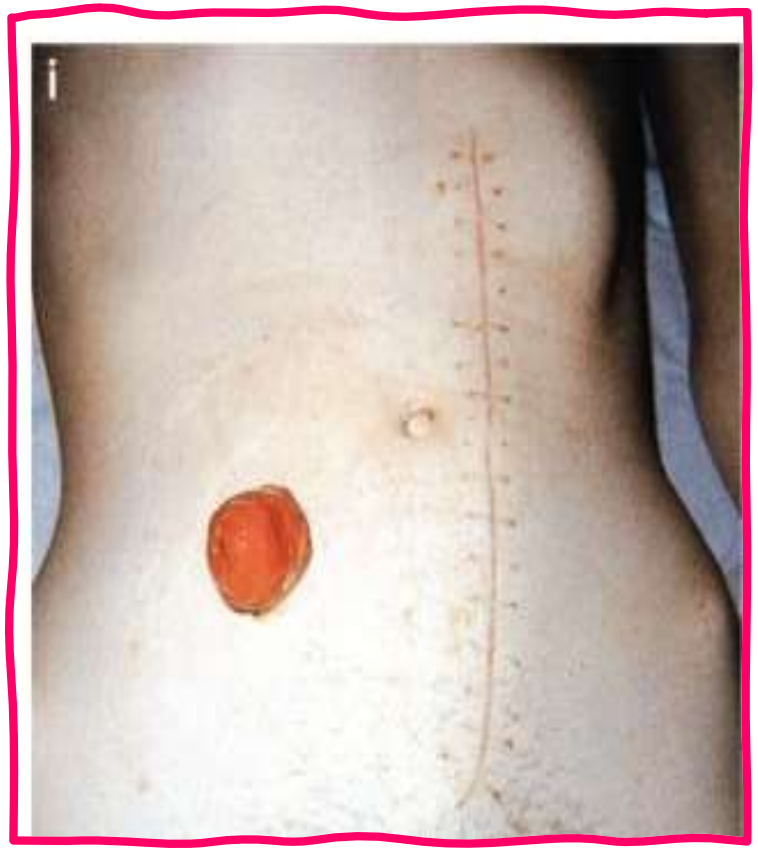
Fig. 6.11 Surgical stomas. A An ileostomy is usually in the right iliac fossa and is formed as a spout. B A loop colostomy is created to defunction the distal bowel temporarily. It is usually in the transverse colon and has afferent and efferent limbs. C A colostomy may be terminal: that is, resected distal bowel. It is usually flush and in the left iliac fossa.

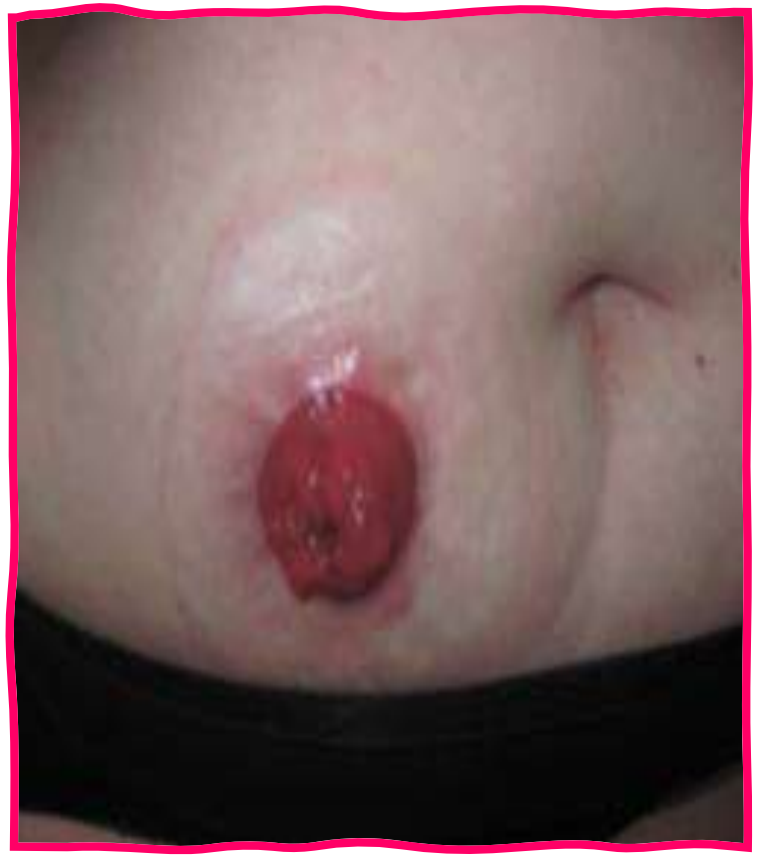
Colostomy

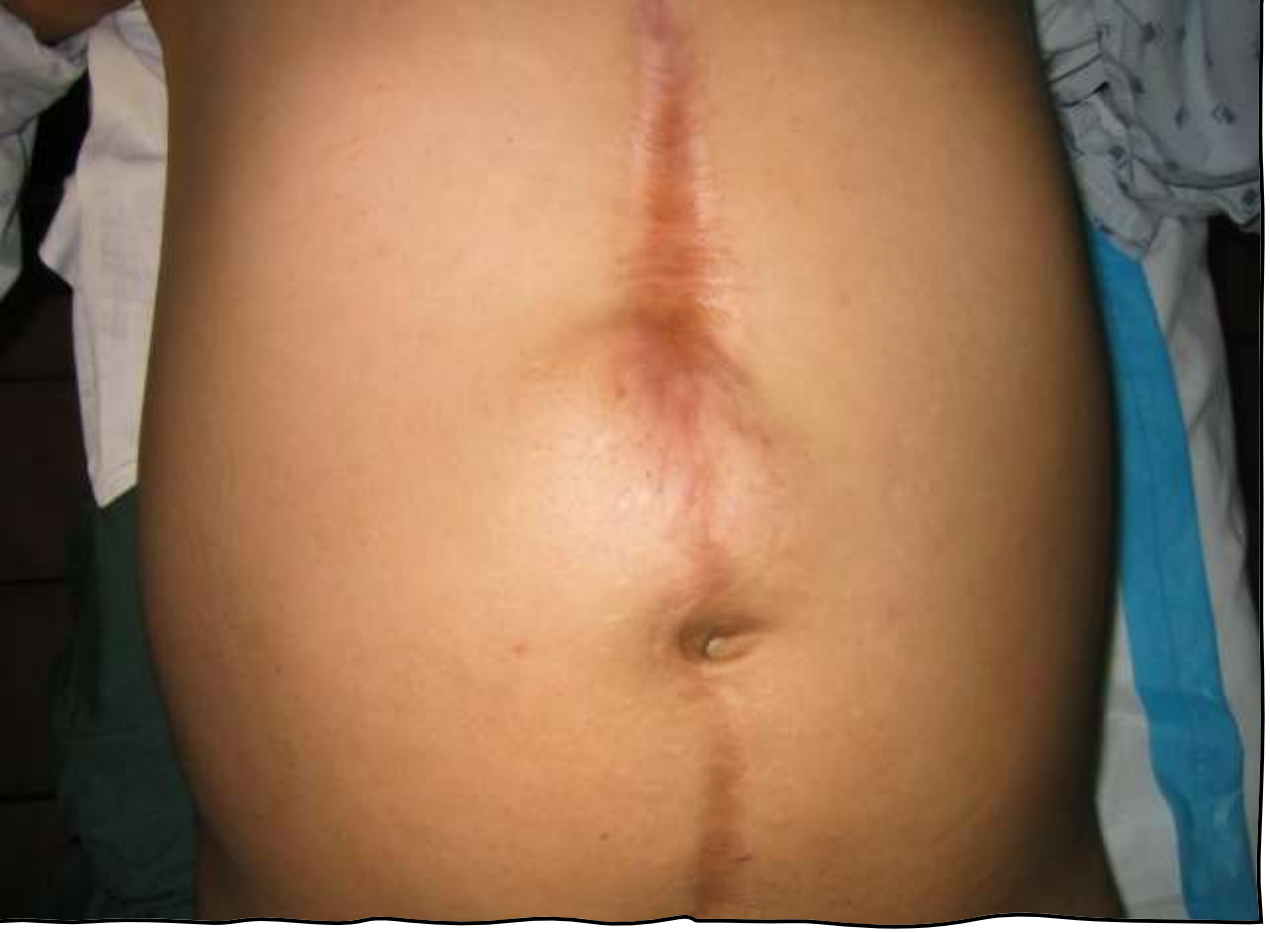


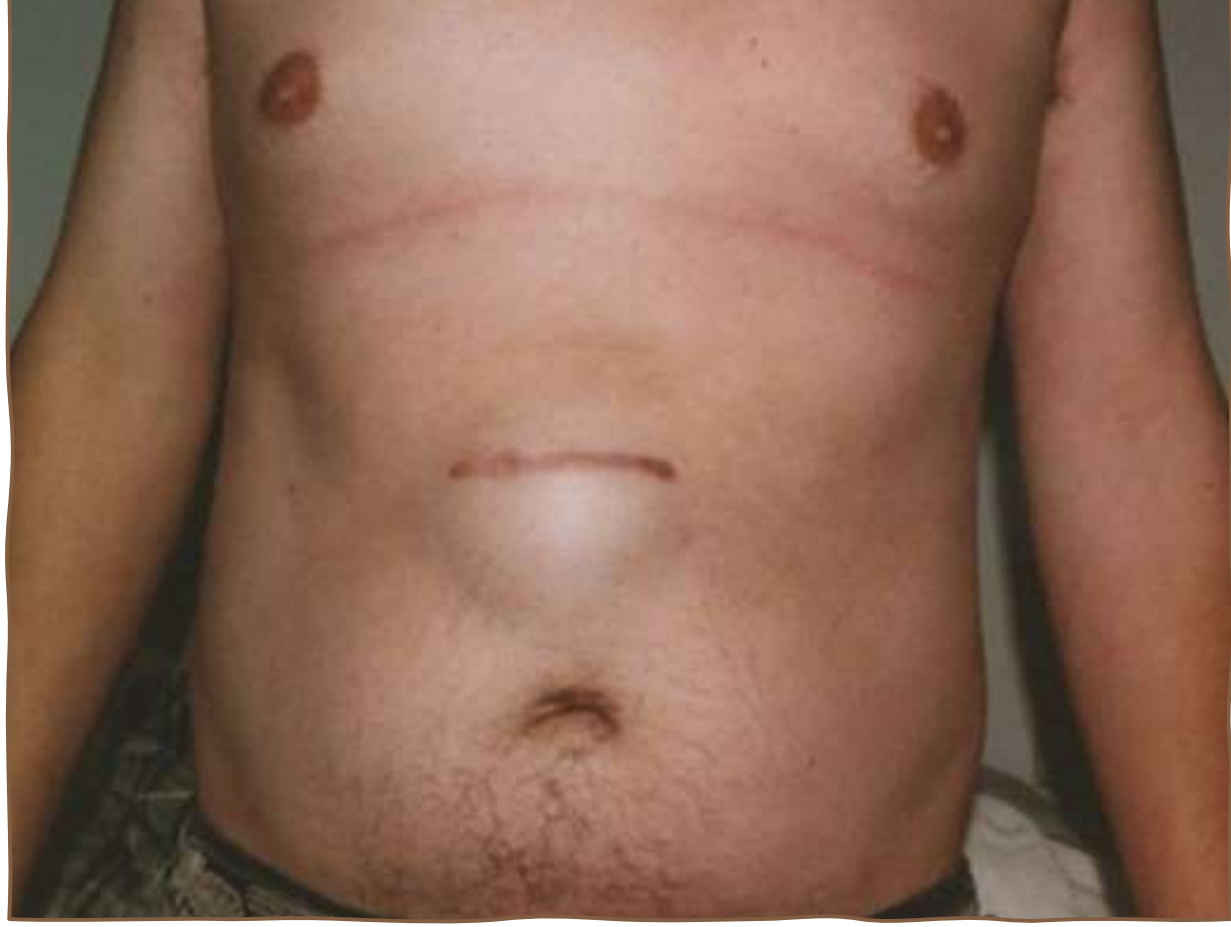

Transverse colostomy
cending ostomy
Descending & Sigmoid colostomies
Colostomy Types

Ileostomy









Incisional hernia

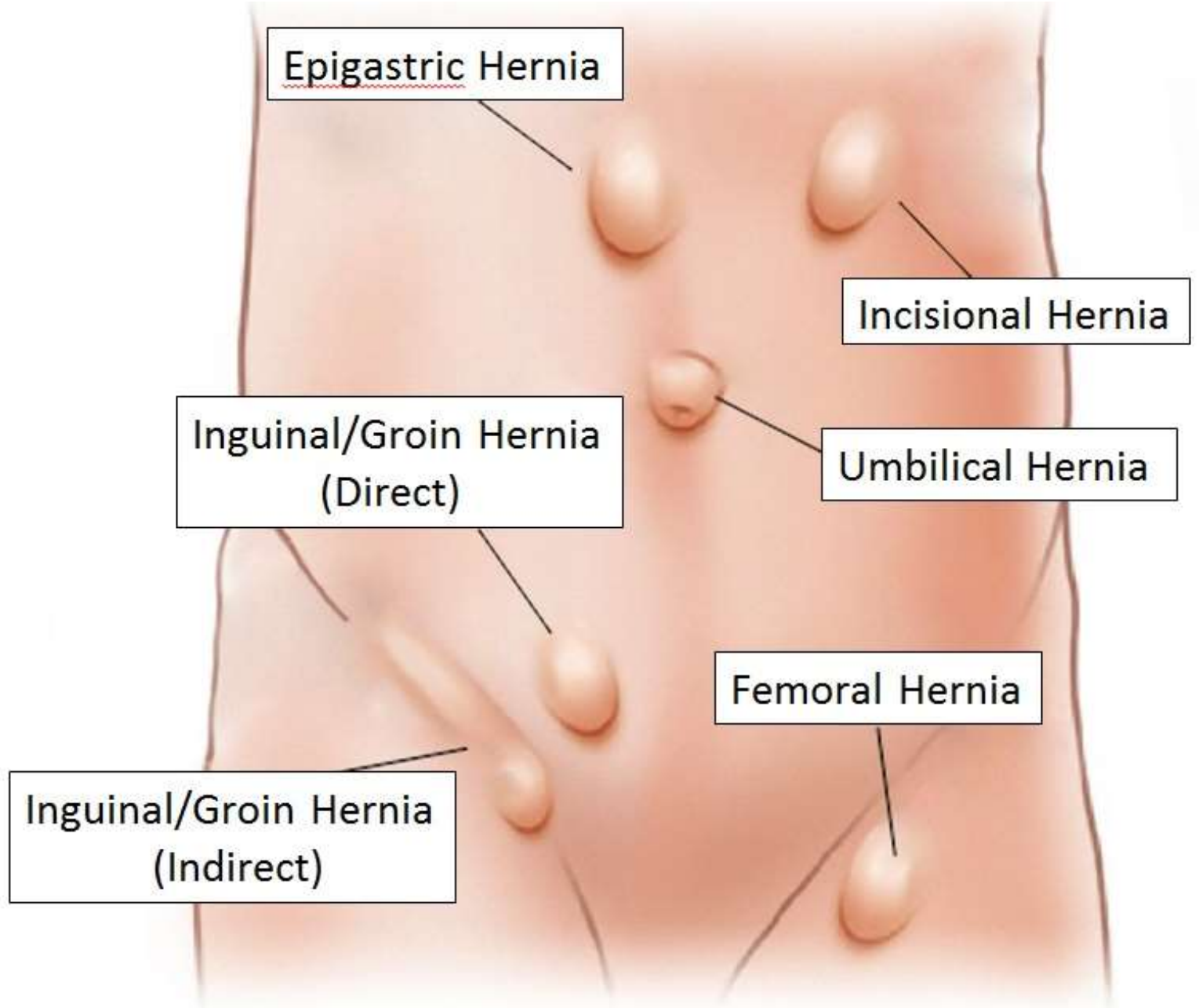
- At site of a scar.
- Palpable as a defect in abdominal wall musculature.
- More obvious as patient raises head off bed or coughs.

ASK PATIENT TO ..

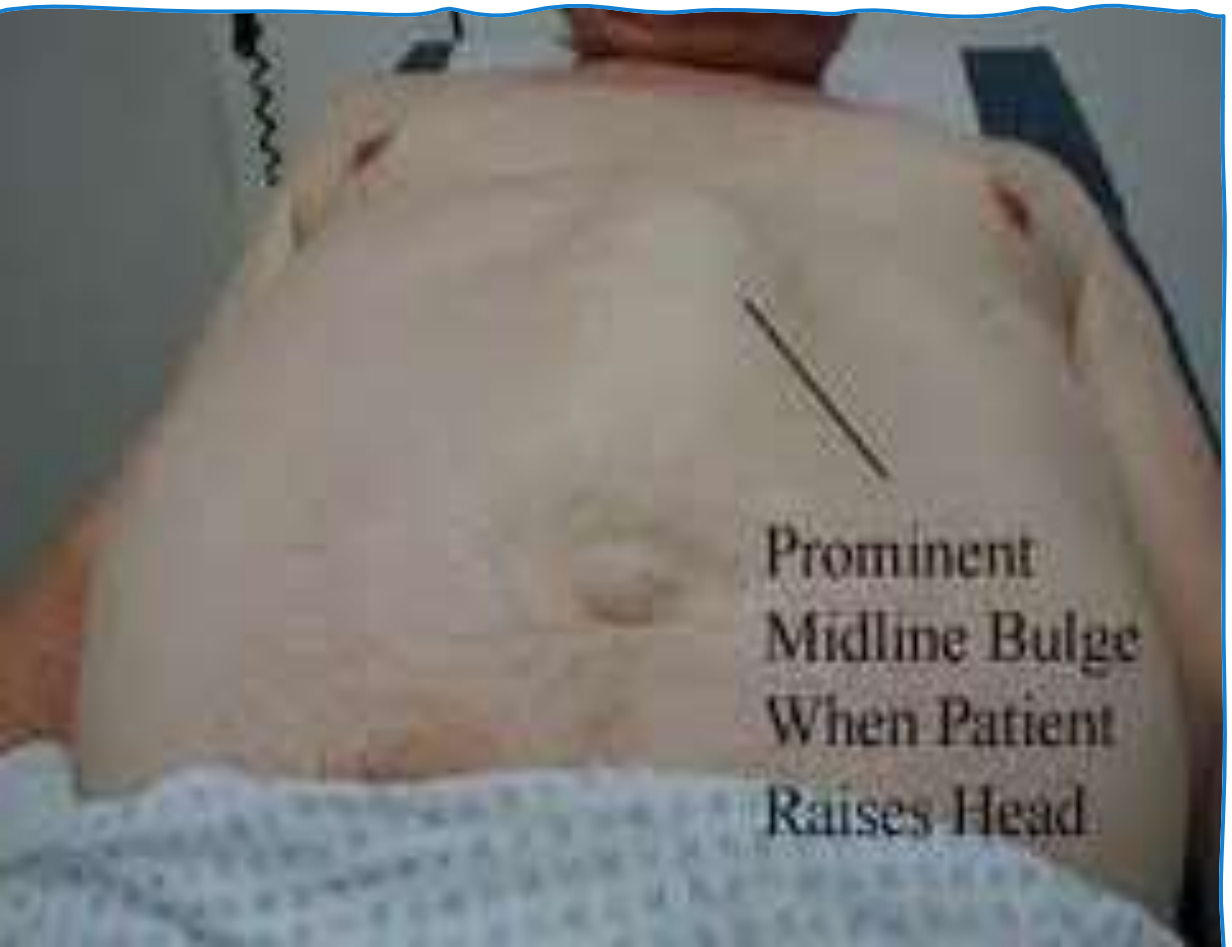
- **COUGH:**
  - Look for Hernia Orifices.
  - Increase pain in Peritonitis.
    - Dunphy sign: pain elicited after coughing.

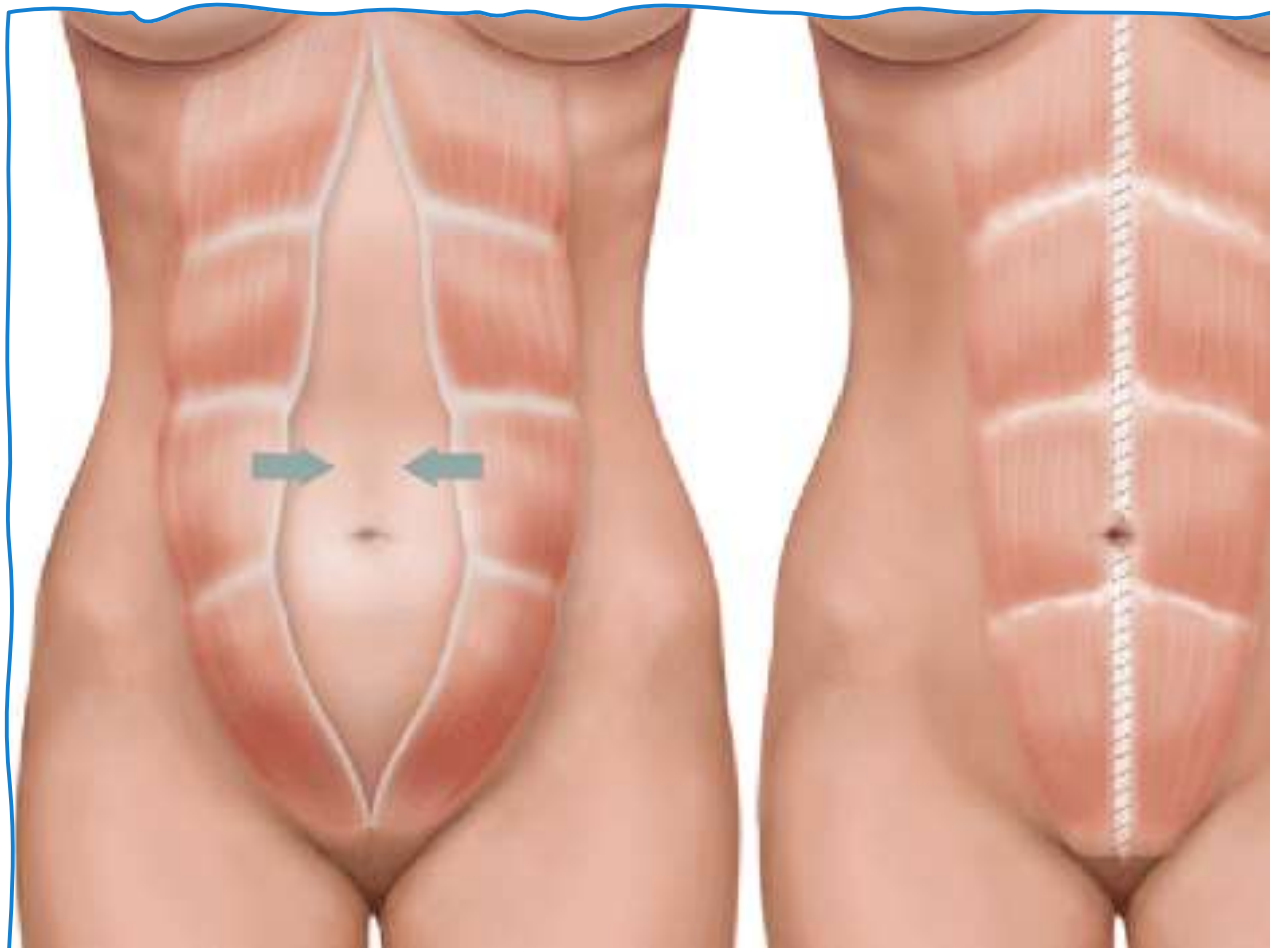
- **RAISE HIS/HER HEAD OUT OFF BED.**
  - Look for Divarication of Recti.

Ventral Hernia Orifices



Divarication of Recti (Rectus Abdominis Diastasis)





PALPATION TIPS

1. **Any pain?**
   - **If so; leave that area to the last.**
2. **Kneel beside bed**
3. **Warm hands**
4. **Eye-to-Eye contact**
5. **Right hand**
   - **keep it flat & in contact with abdominal wall.**

PALPATION

"SOFT vs. TENDER"

❑ During deep inspiration. Keep hand still & wait for organ to move with breathing.
❑ Not too close to costal margin > missed edge.

1) Light Superficial Palpation.

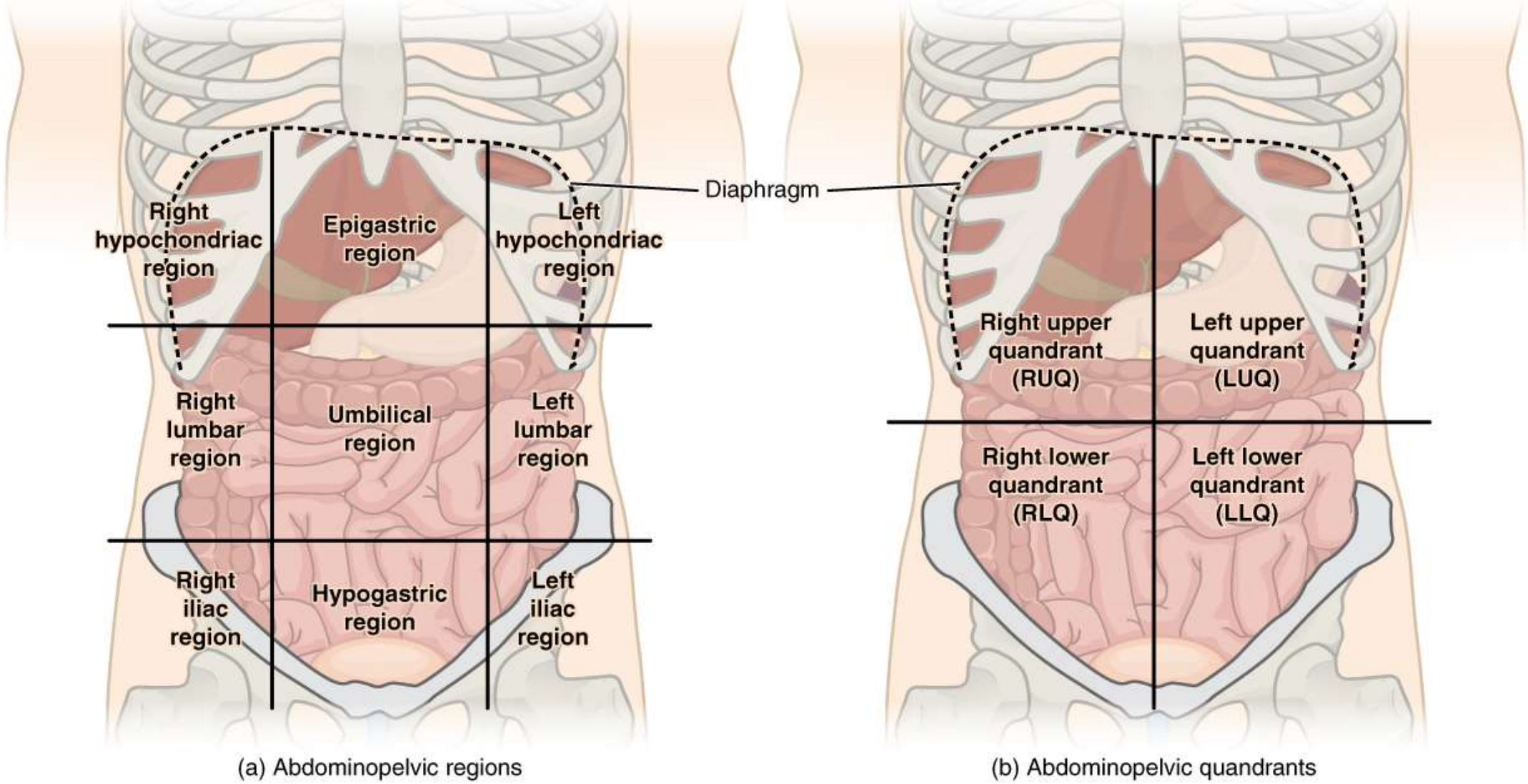
- ✓ Gain patient's confidence.
- ✓ Superficial Masses.
- ✓ Superficial Tenderness.
- ✓ Guarding.

2) Deep Palpation.

- ✓ Deep Masses.
- ✓ Deep Tenderness.
- ✓ Rebound Tenderness? / Murphy's Sign?.
- ✓ Special Signs.

3) Palpation For Organomegaly:

- Liver, Spleen & Kidneys.



SURFACE MARKING "Each Region In Turn"

GUARDING

Voluntary Guarding

* Voluntary contraction of abd. muscles.
* Palpation provokes pain. (Protection)

Involuntary Guarding

* Reflex contraction of abd. muscles.
* Inflammation of parietal peritoneum.

Board-like Rigidity

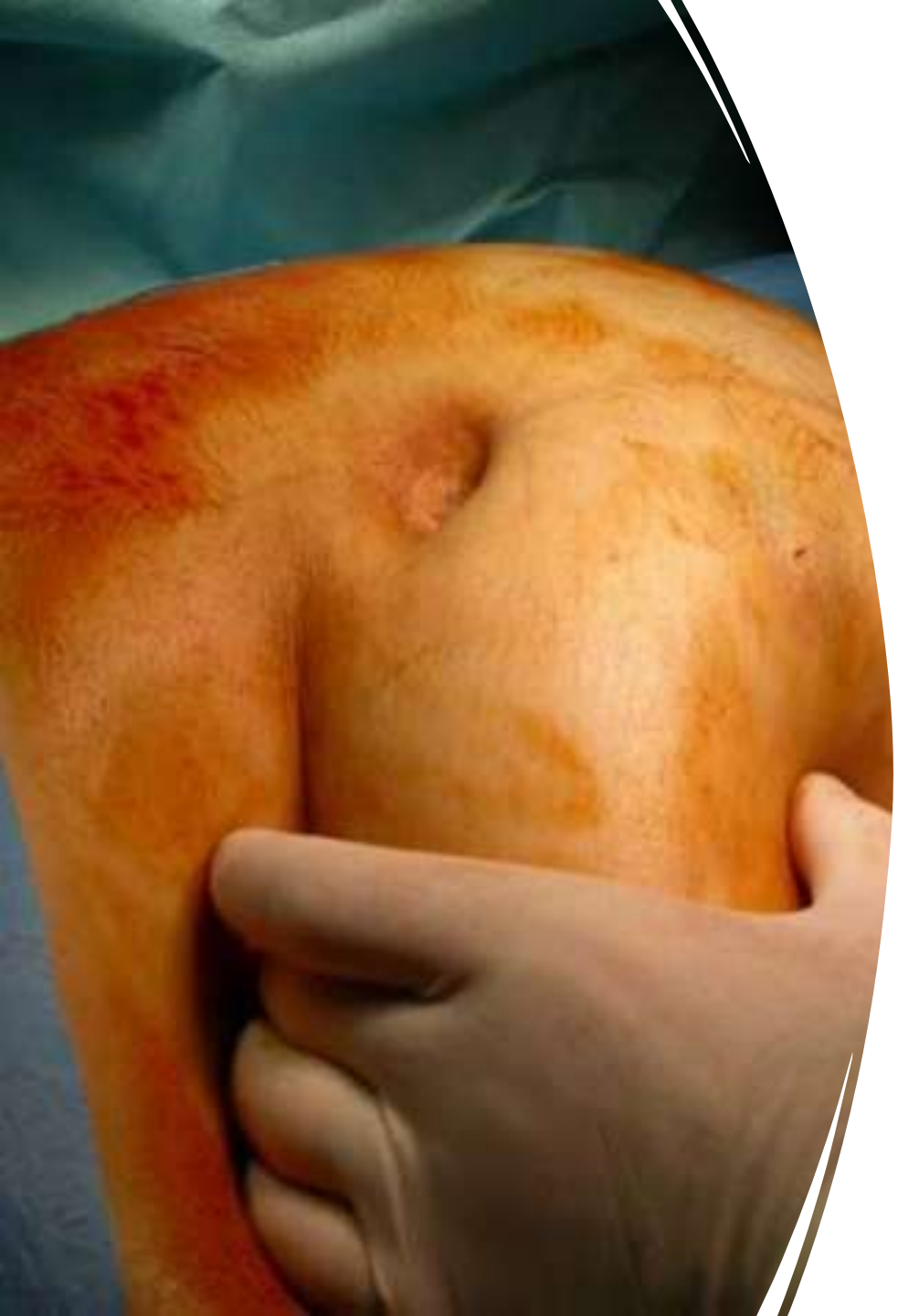
* Anterior abd. wall muscles Held Rigid.
* In Generalised Peritonitis.

REBOUND TENDERNESS

- When rapidly removing your hand after deep palpation, the pain will increase.
- Indicates: Intra-abdominal disease *(but not necessary peritonism).*

MURPHY'S SIGN

- Deep palpation at 9th costal margin during deep inspiration will cease inspiration with tenderness.
- Indicates: Acute Cholecystitis.

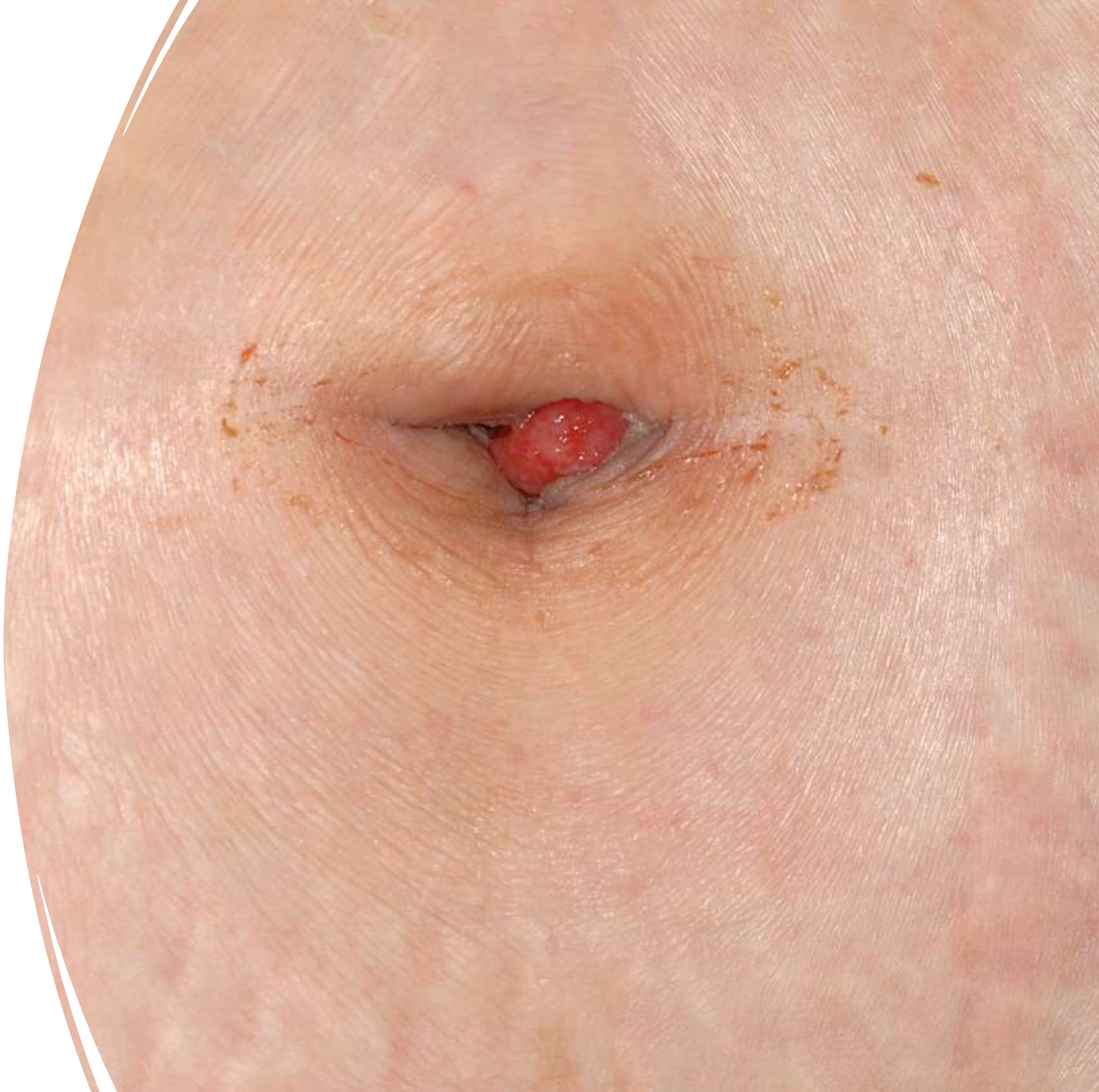


Describe Any Mass

- site, size, surface, shape, consistency.
- moves on respiration?
- fixed or mobile?
- superficial in abdominal wall or within abdominal cavity?
  - ask patient to tense abdominal muscles by lifting their head >> *abdominal wall mass will still be palpable, whereas intra-abdominal mass will not.*
- Enlarged abdominal organ or separate from solid organs?

UMBILICAL MASS

- Hard subcutaneous nodule at umbilicus.
- May indicate metastatic disease (Sister Mary Joseph's Nodule) .



EPIGASTRIC PULSATILE MASS

- Normal Aortic Pulsation in a thin person.
- Gastric or Pancreatic Tumour transmitting underlying aortic pulsation.
- Aortic Aneurysm.

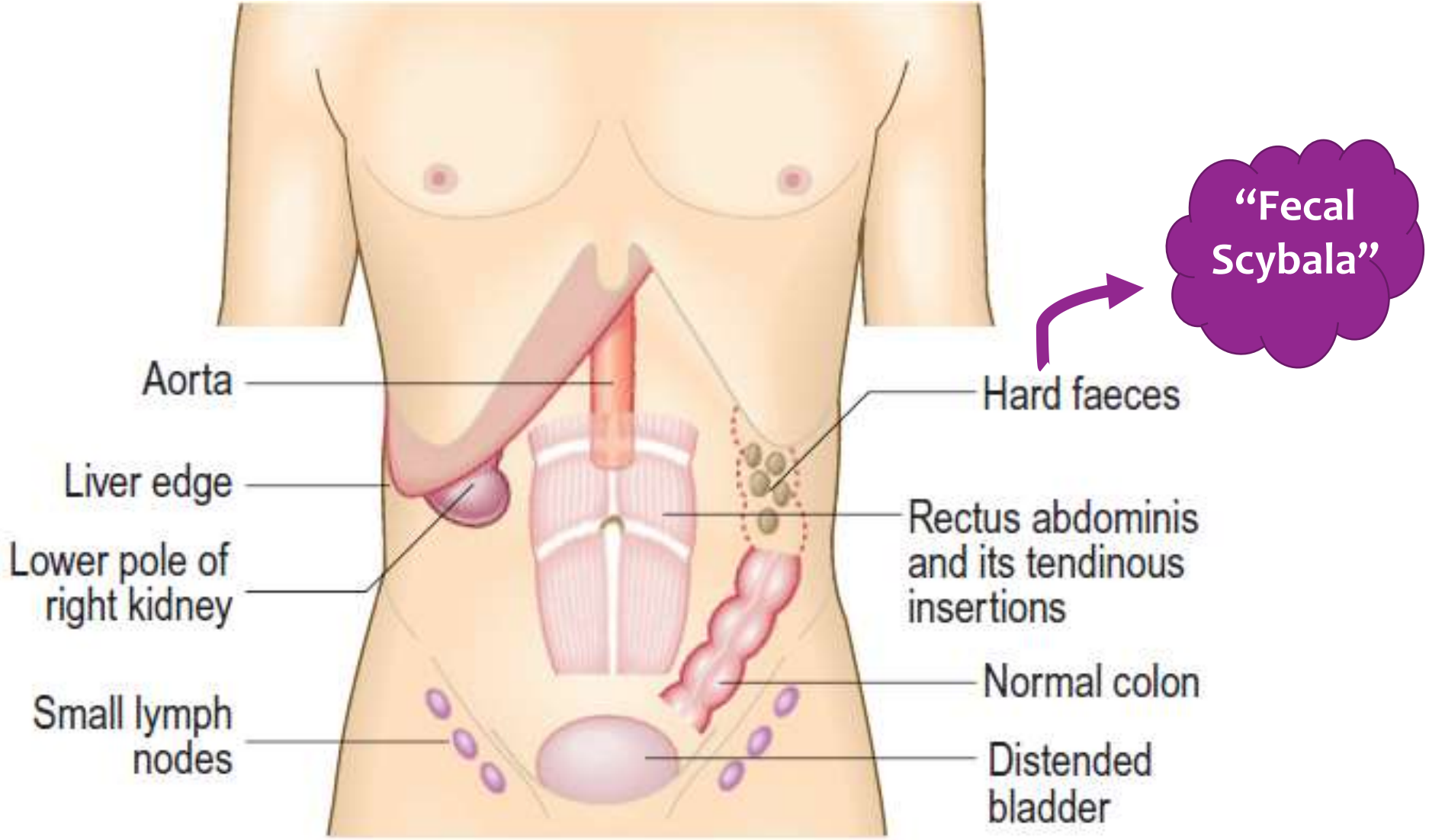


Fig. 6.13 Palpable masses that may be physiological rather than pathological.

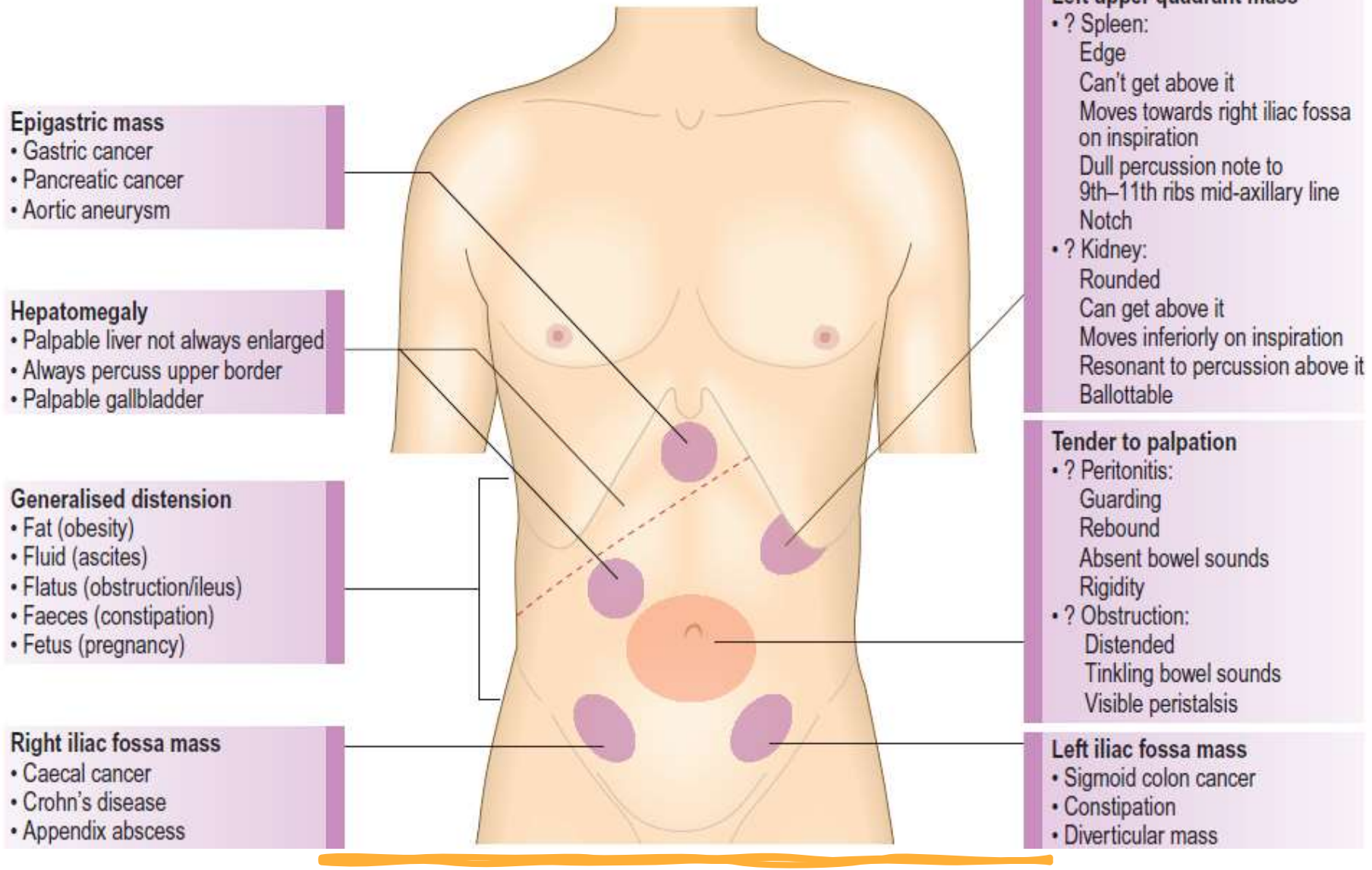
Tenderness

- Discomfort during palpation.
- Vary +/- resistance to palpation.
- usefully indicates underlying pathology.

** May be MASKED in glucocorticoids, immuno-suppressants or anti-inflammatory drugs, in alcohol intoxication or in altered LOC.

Tenderness

- Consider patient's Anxiety when assessing degree of tenderness elicited.
  1. Tenderness in several areas on minimal pressure. (vs. Generalised peritonitis?).
  2. Severe superficial pain with no tenderness on deep palpation.
  3. Pain disappears if patient is distracted.



Sites of Tenderness are Important!

SPECIAL SIGNS

6.9 Specific signs in the 'acute abdomen'

Sign	Disease associations	Examination
Murphy's	Acute cholecystitis: Sensitivity 50–97% Specificity 50–80%	As the patient takes a deep breath in, gently palpate in the right upper quadrant of the abdomen; the acutely inflamed gallbladder contacts the examining fingers, evoking pain with the arrest of inspiration
Rovsing's	Acute appendicitis: Sensitivity 20–70% Specificity 40–96%	Palpation in the left iliac fossa produces pain in the right iliac fossa
Iliopsoas	Retroileal appendicitis, iliopsoas abscess, perinephric abscess	Ask the patient to flex their thigh against the resistance of your hand; a painful response indicates an inflammatory process involving the right psoas muscle
Grey Turner's and Cullen's	Haemorrhagic pancreatitis, aortic rupture and ruptured ectopic pregnancy (see Fig. 6.25)	Bleeding into the falciform ligament; bruising develops around the umbilicus (Cullen) or in the loins (Grey Turner)

PERCUSSI ON TIPS

- Normal note is **Tympanic**.
- Over mass or fluid gives **Dull** sound.
- Pe
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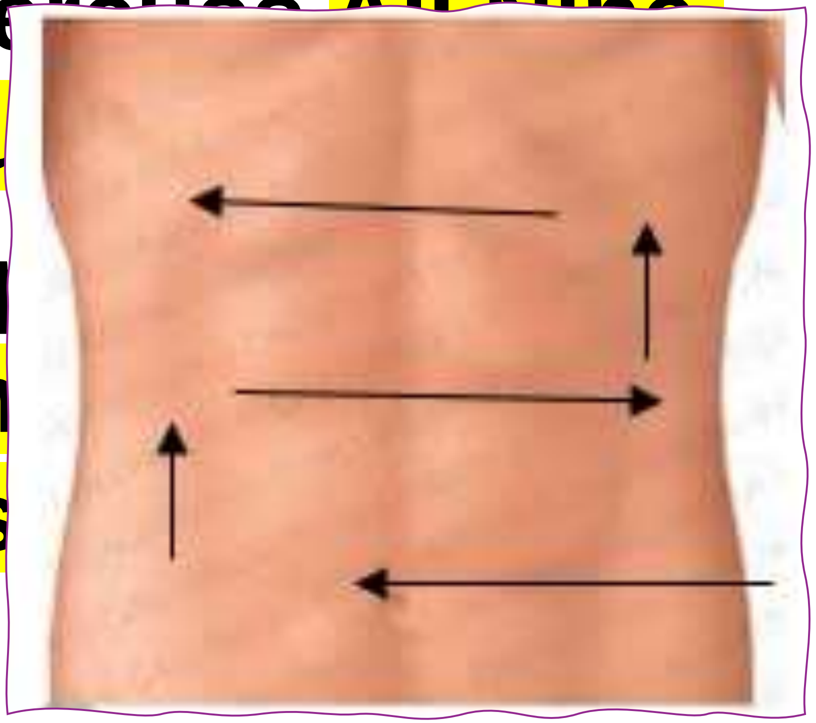
- Sp
  n
  As



s for UB

HEPATOMEGALY

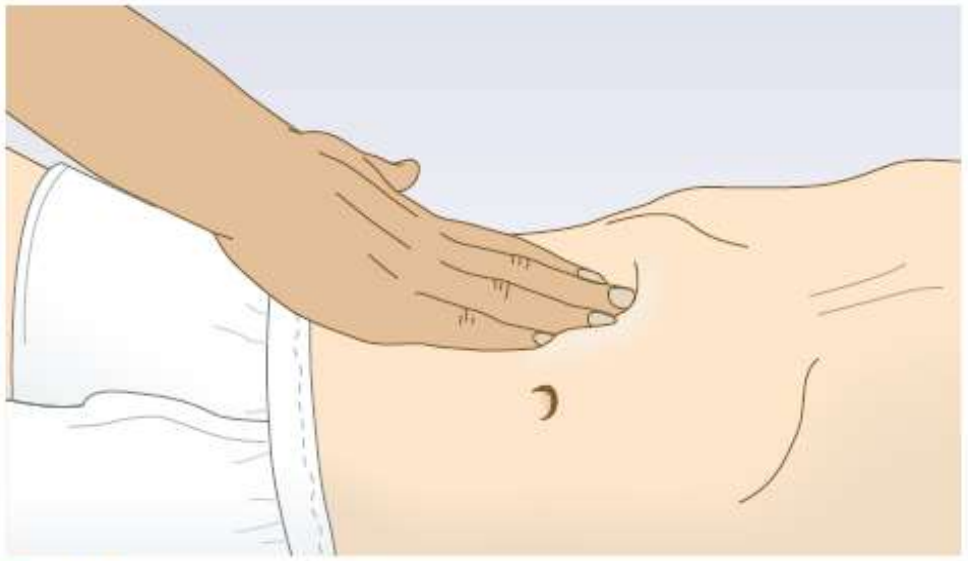
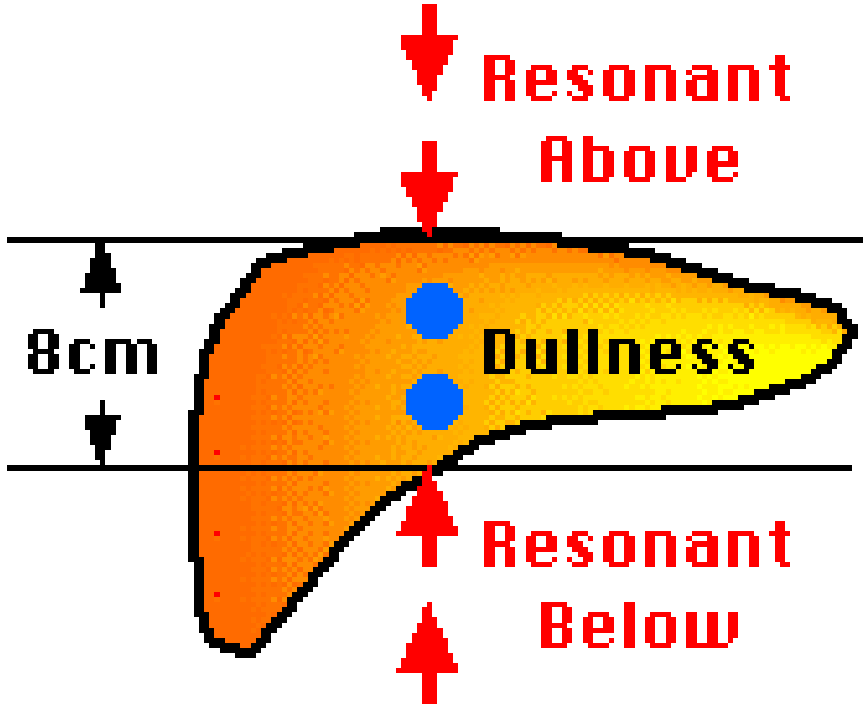


Fig. 6.14 Palpation of the liver.

- Flat hand at RIF.
- Deep breath.
- Liver edge descends on inspiration.
- Progress up, 1 cm at a time, between each breath.
- Till costal cartilage or liver edge.

- **Comment on:**
  - ❖ Size , Surface, Edge, Consistency, *Tenderness (Rt H.F)*, *Pulsatility (TVR)*.
  - ❖ GB tenderness? RUQ / mid-clavicular line.

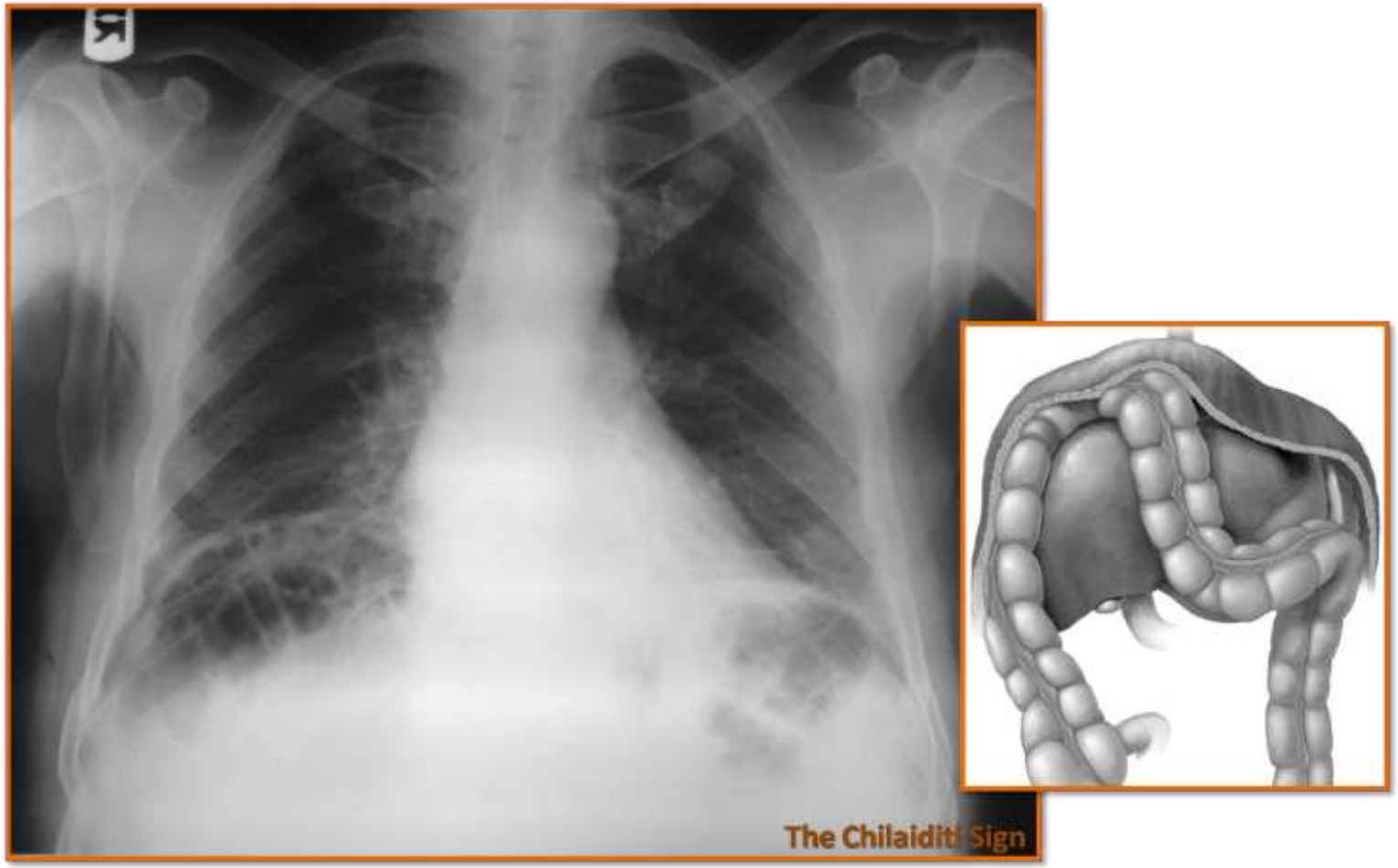
HEPATOMEGALY



- **Full Expiration.**
- **Percuss downwards from 2nd ICS mid-clavicular line.**
- **Dullness = upper border of liver.**
- **Measure distance between upper & lower borders of liver. [NL: 8-12cm]**

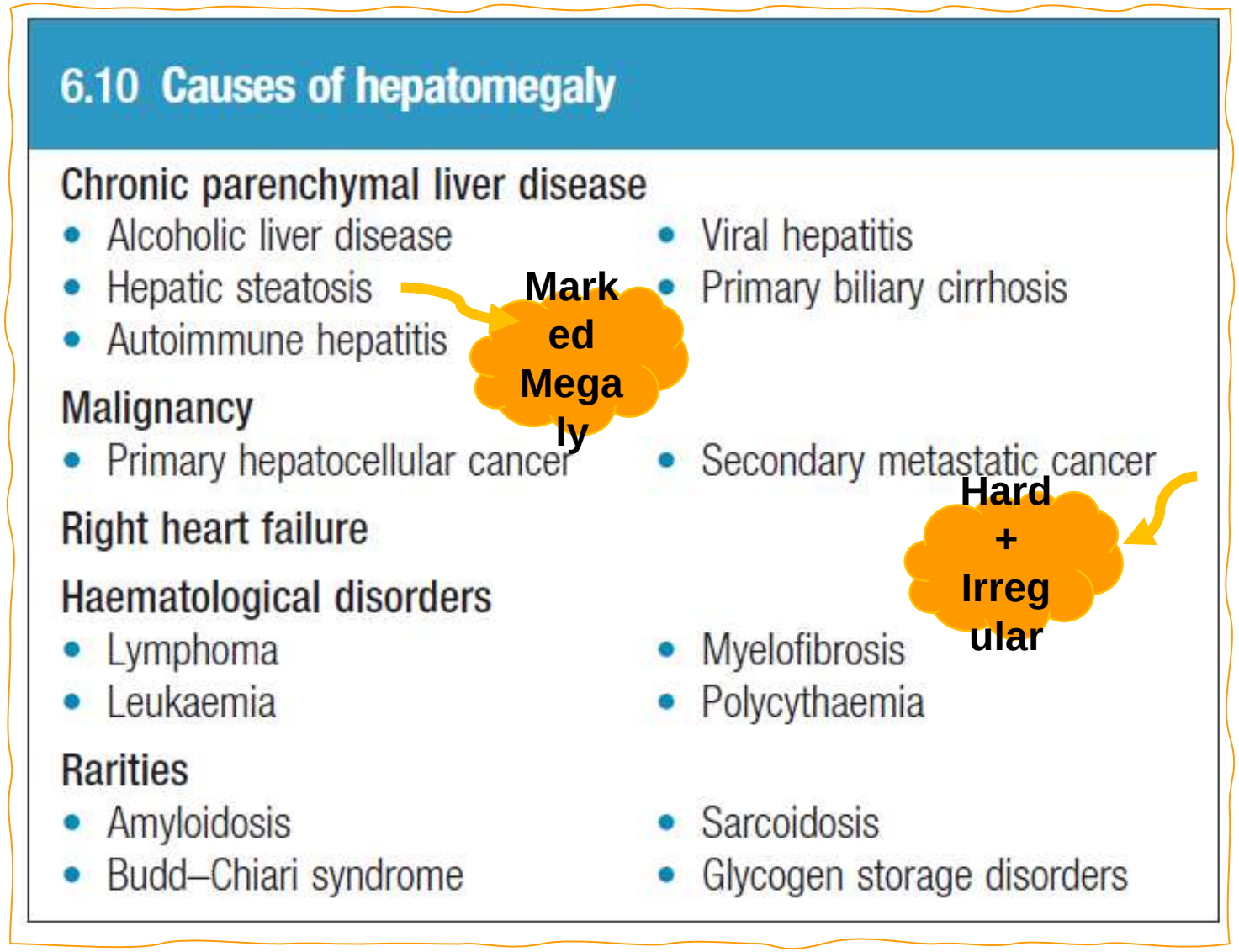
Resonance below 5th ICS

- Hyperinflated lung
- Interposition of transverse colon between liver & diaphragm. ***(Chilaiditi's sign)***



CAUSES OF HEPATOMEGALY

- **Enlarged left lobe: in epigastrium or LUQ.**
- **Liver enlarged in early cirrhosis but shrunken in advanced cirrhosis.**

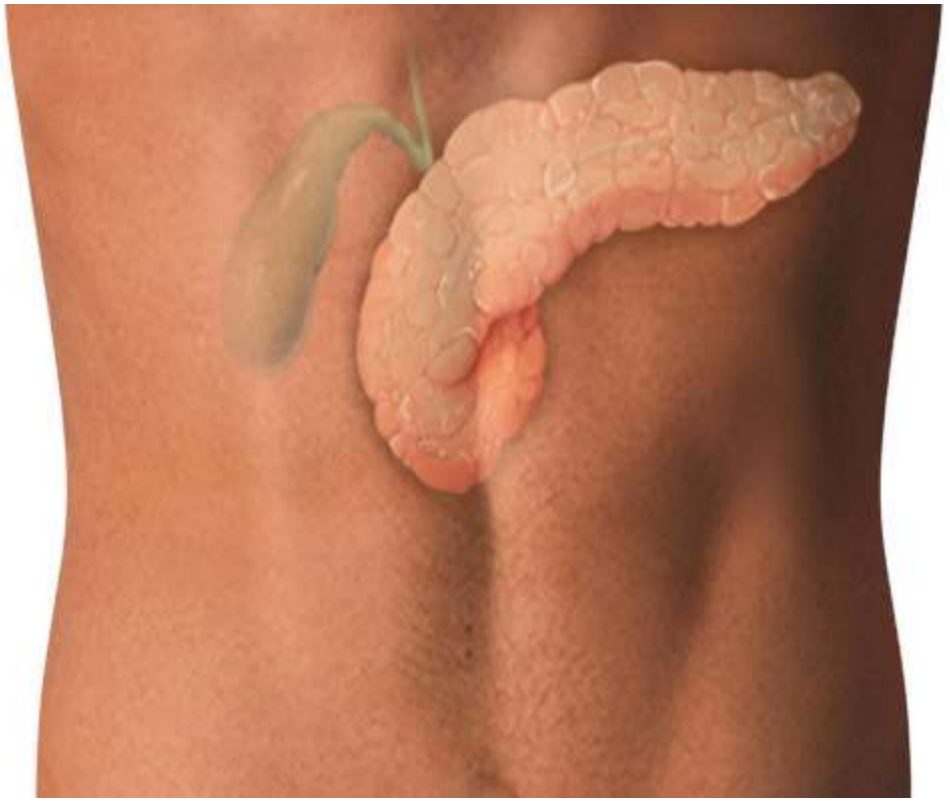


Palpable Distended GB

- Rare. / Globular shape.
- Obstruction of *cystic duct* [Mucocele or Empyema]
- Obstruction of *CBD* [Pancreatic CA]

Jaundice + Palpable GB = likely Extrahepatic Obstruction [pancreatic CA or, very rarely, GBS].

"Courvoisier's sign"



- Gallstone disease; tender GB + Impalpable (fibrosis of GB wall).

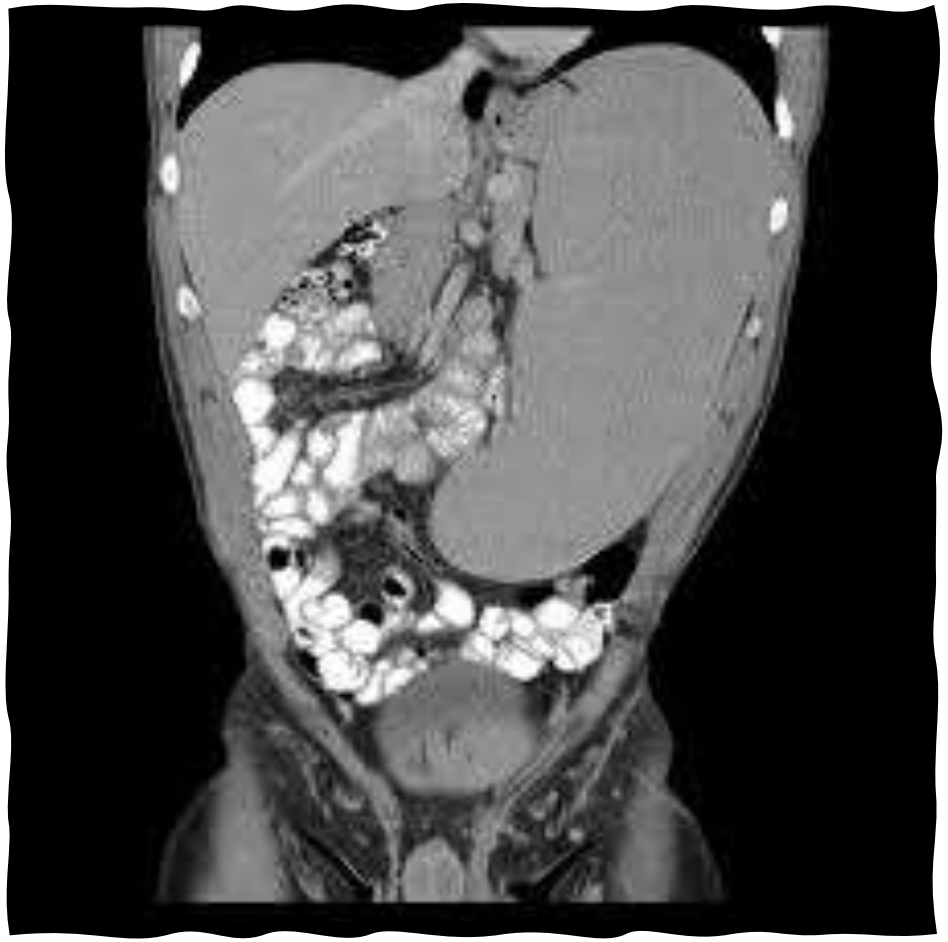
SPLENOMEGALY

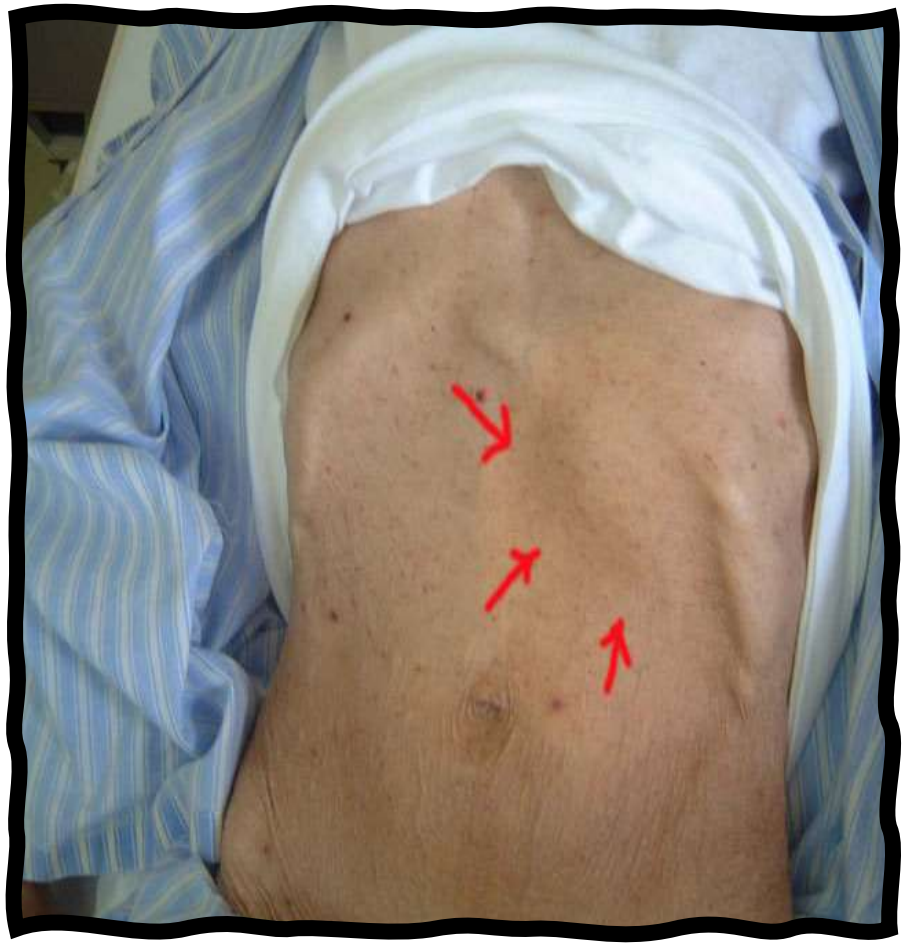
3X the normal size to be palpable.

Percuss lateral chest / mid-axillary line (normally dullness 9th-11th ribs).

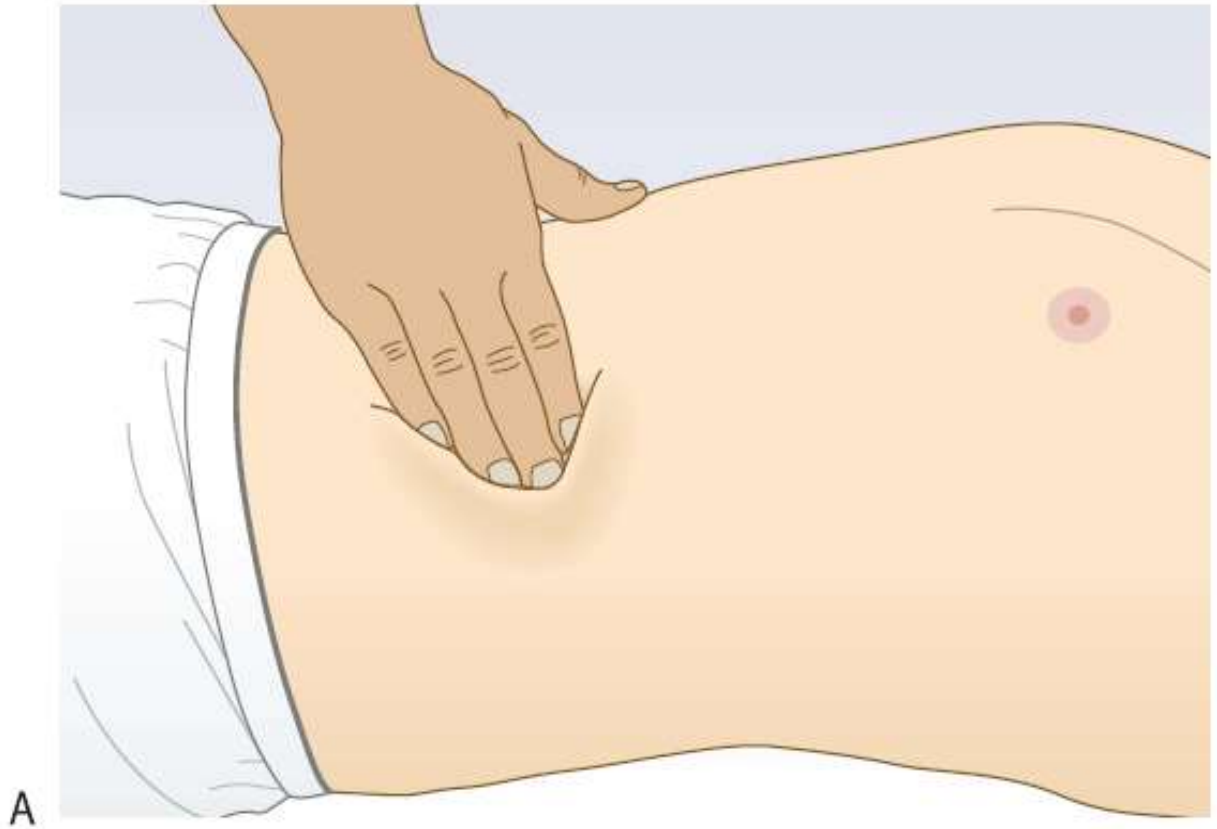
- **Start from RIF.**
- **Deep Breath,**
- **Move diagonally towards LUQ.**

SPLENOMEGALY





Cannot feel splenic edge? >> put your Lt. hand behind lower rib & roll pt. to Rt. & feel again.



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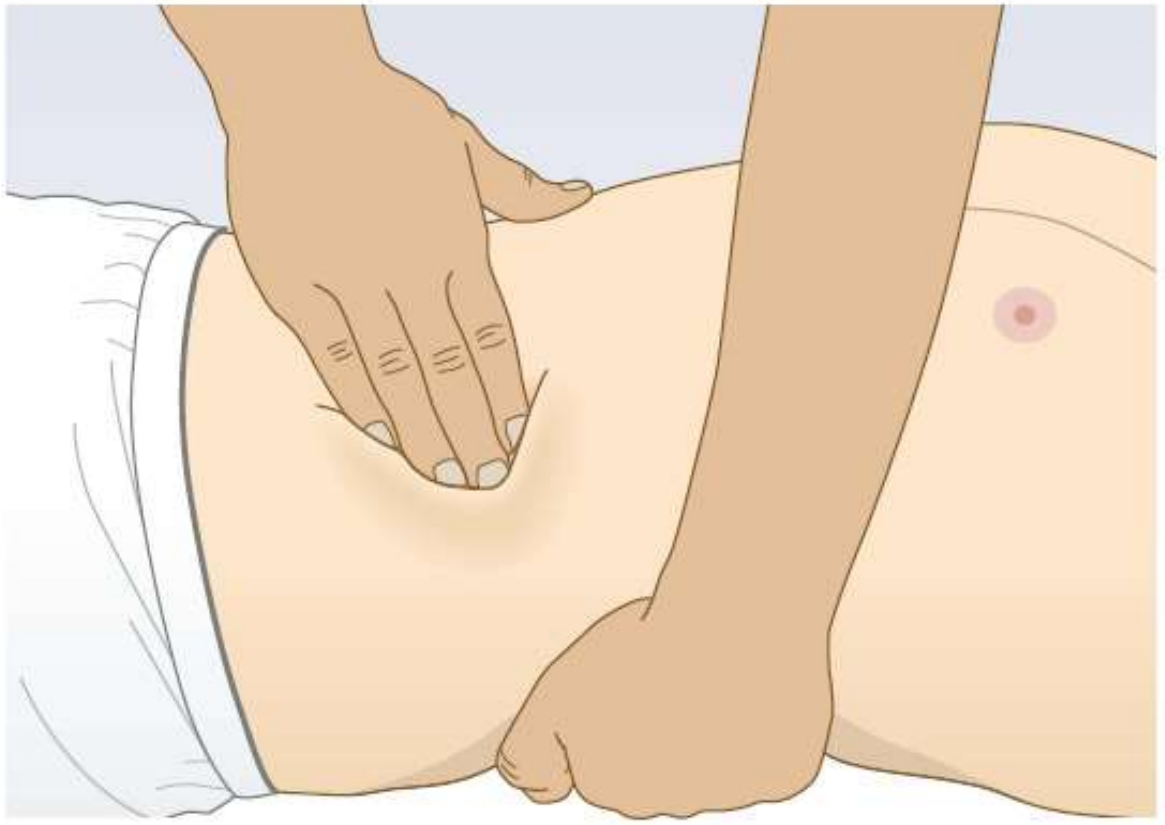

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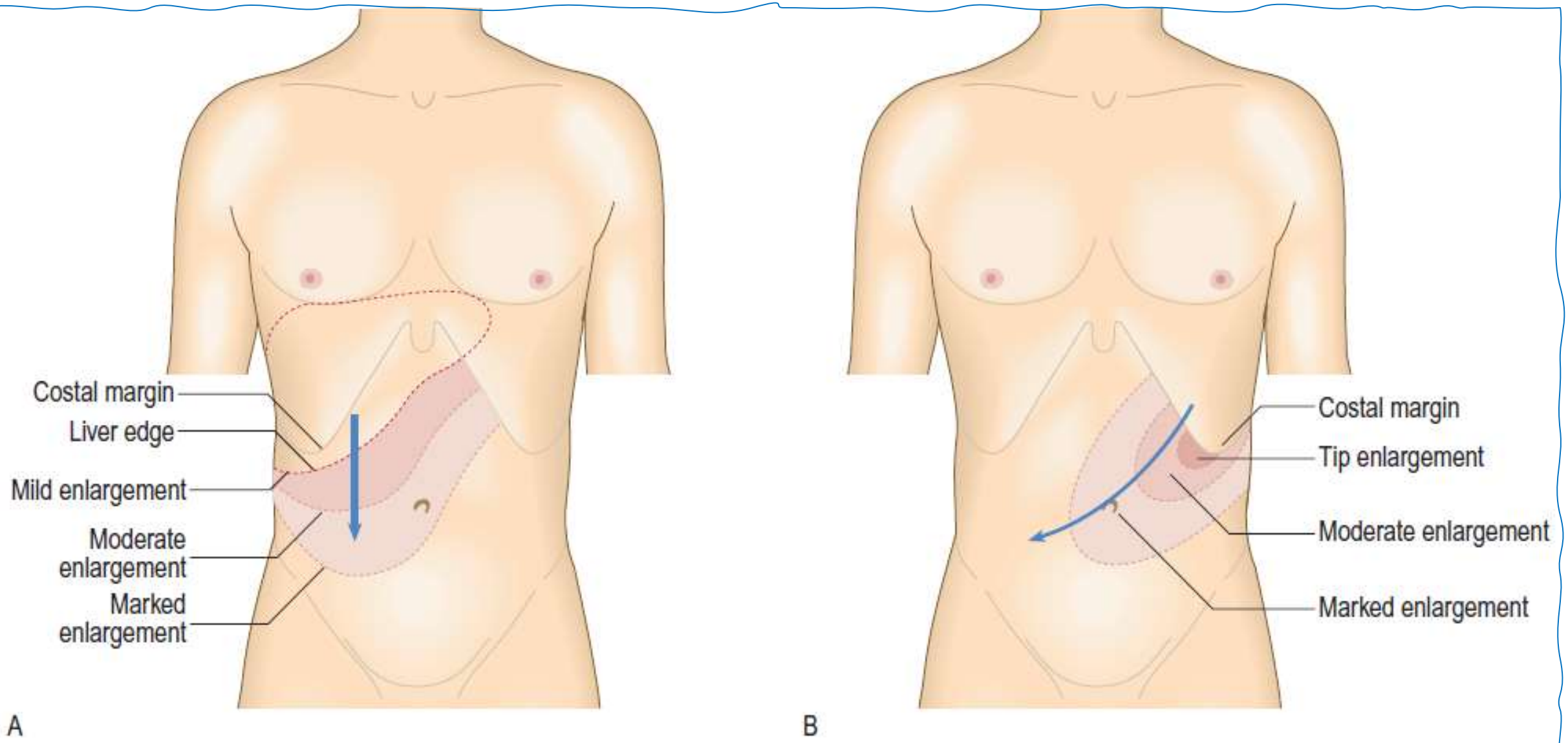


Fig. 6.15 Patterns of progressive enlargement of liver and of spleen. A Direction of enlargement of the liver. B Direction of enlargement of the spleen. The spleen moves downwards and medially during inspiration.

CAUSES OF SPLENOMEGALY

Cirrhosis

A Common Cause Worldwide

Massive Enlargement

6.13 Causes of splenomegaly

Haematological disorders

- Lymphoma and lymphatic leukaemias
- Myeloproliferative diseases, polycythaemia rubra vera and myelofibrosis
- Haemolytic anaemia, congenital spherocytosis

Portal hypertension

Infections

- Glandular fever
- Malaria, kala-azar (leishmaniasis)
- Bacterial endocarditis
- Brucellosis, tuberculosis, salmonellosis

Rheumatological conditions

- Rheumatoid arthritis (Felty's syndrome)
- Systemic lupus erythematosus

Rarities

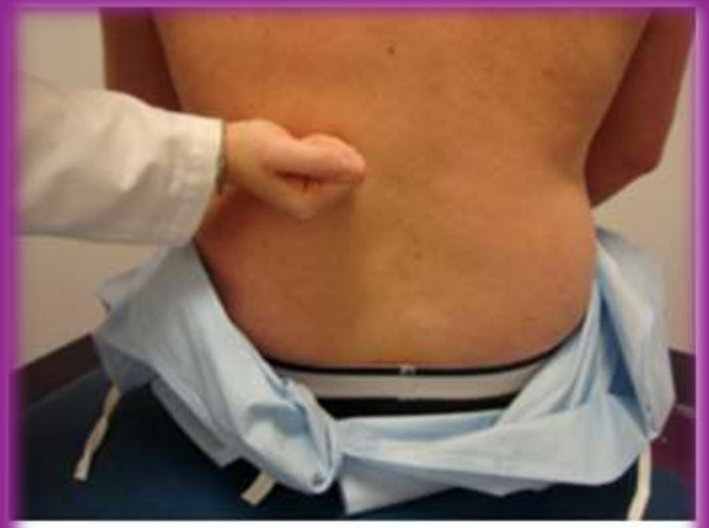
- Sarcoidosis
- Amyloidosis
- Glycogen storage disorders

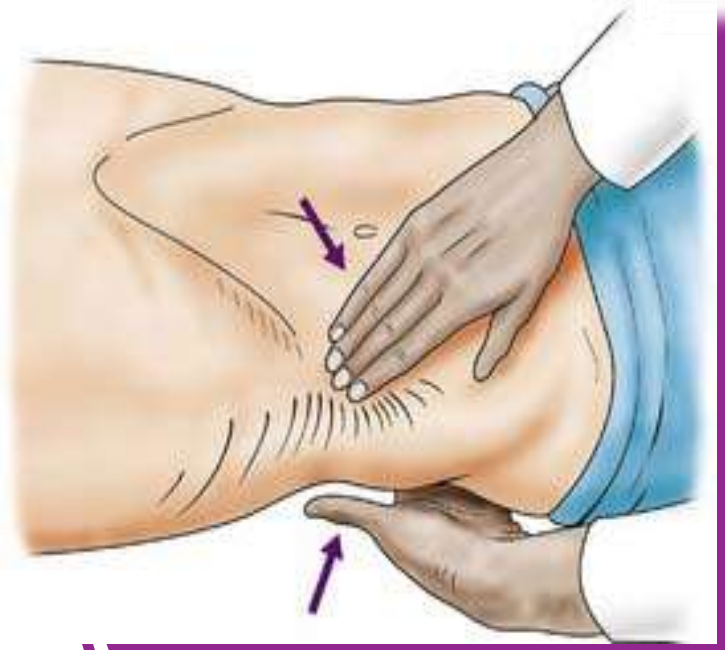
Felty's Syndrome

- Increased Chance of Infections.
- Unknown Cause / Autoimmunity?
- Chance of Genetics? AD trait?

KIDNEY EXAMINATION

- **Bimanual exam.**
- **Renal angle tenderness.**





Spleen vs. Kidney

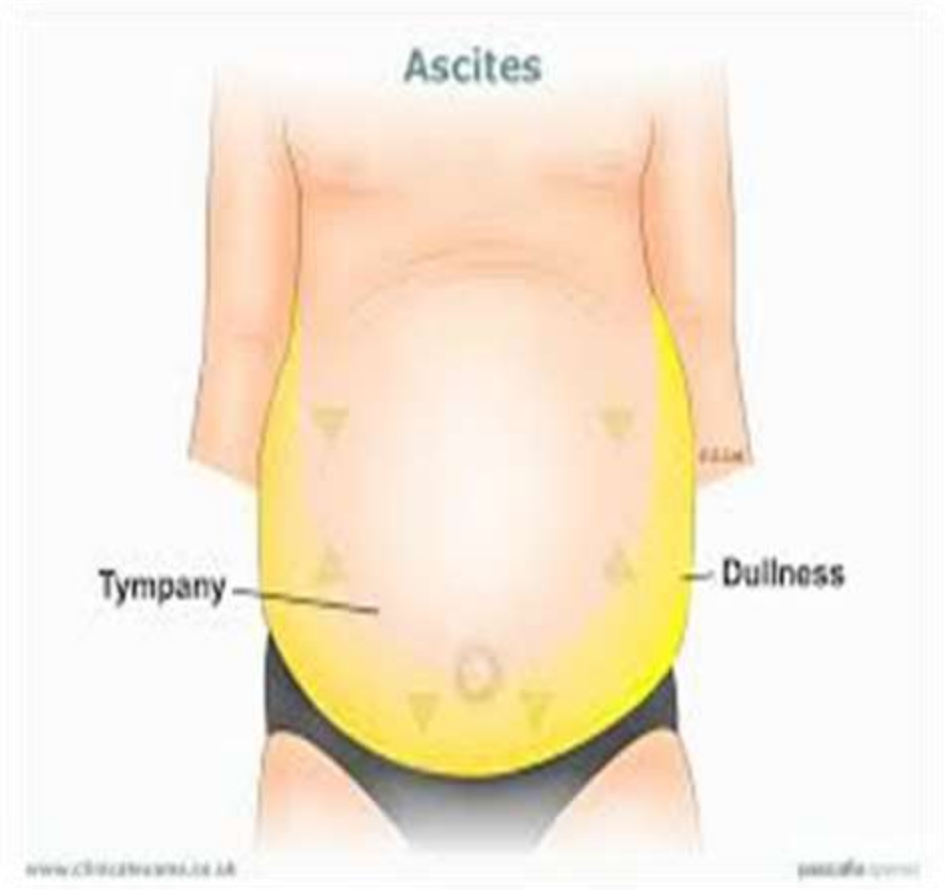
- **Ballott ement**

.

6.12 Differentiating a palpable spleen from the left kidney

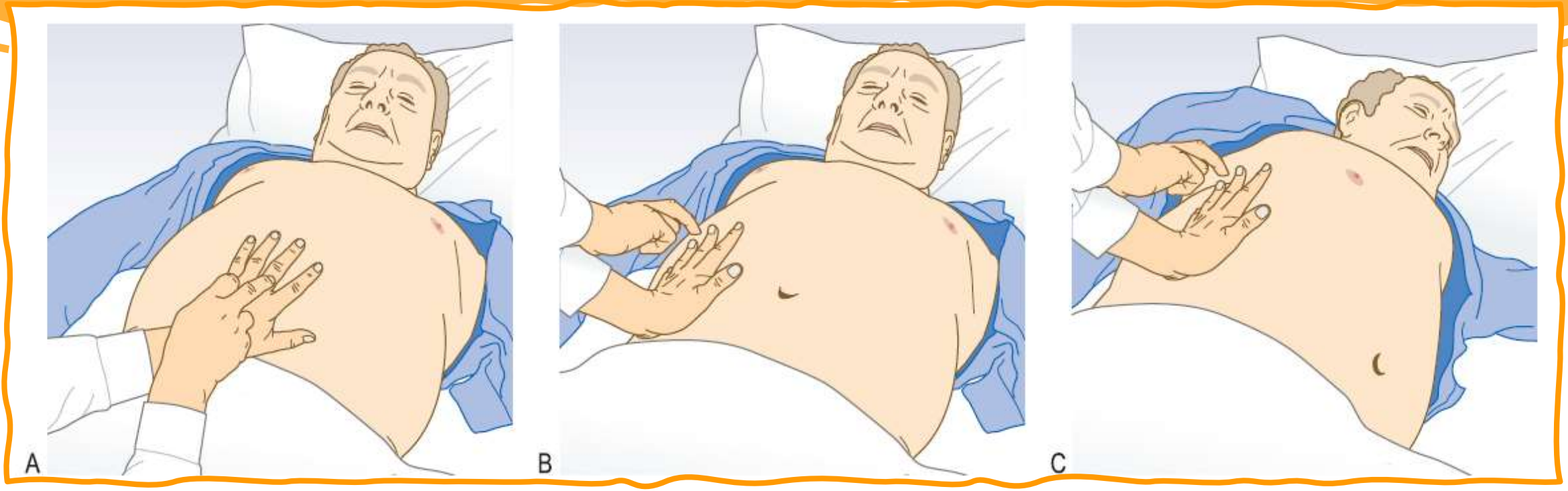
Distinguishing feature	Spleen	Kidney
Mass is smooth and regular in shape	More likely	Polycystic kidneys are bilateral irregular masses
Mass descends in inspiration	Yes, travels superficially and diagonally	Yes, moves deeply and vertically
Ability to feel deep to the mass	Yes	No
Palpable notch on the medial surface	Yes	No
Bilateral masses palpable	No	Sometimes, e.g. polycystic kidneys
Percussion resonant over the mass	No	Sometimes
Mass extends beyond the midline	Sometimes	No (except with horseshoe kidney)

ASCITES



- **Intraperitoneal fluid.**
- **Shifting dullness: mild-moderate ascites.**
- **Fluid transmitted thrill: massive ascites.**

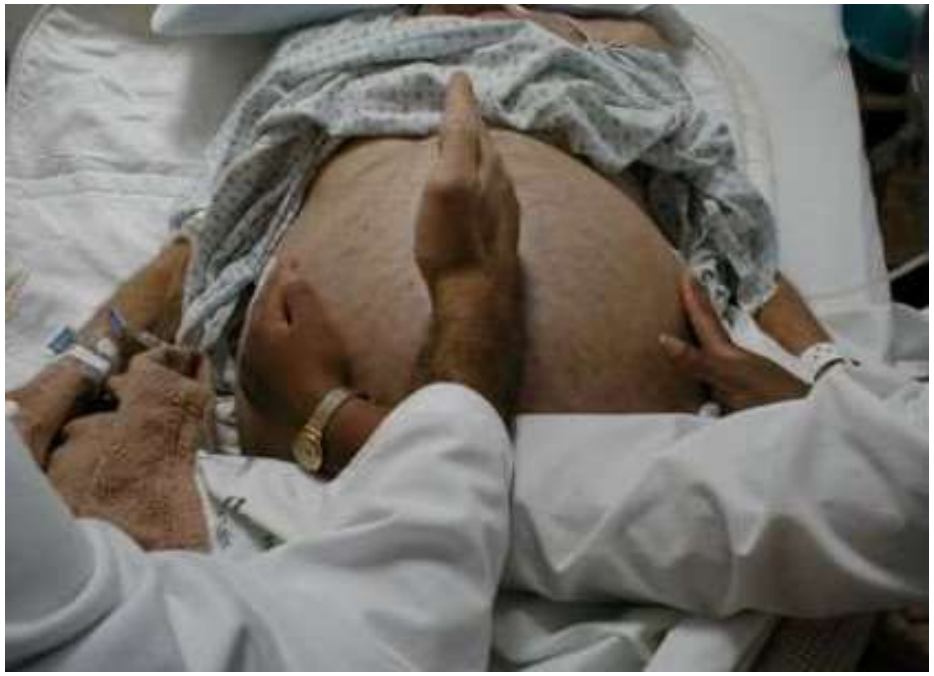
SHIFTING DULLNESS



- **Finger on site of dullness in flank >> pt. turns on opposite side >> 10 seconds >> percuss again.**
- **If dullness is now resonant, shifting dullness is present, indicating Ascites.**

FLUID THRILL

- **Flat Palm.**
- **Flick a finger.**
- **Ripple against your palm?**
  - assistant or pt. place edge of their hand on midline of abdomen.
  - prevents transmission of impulse via skin rather than ascites.
- **Still feel a ripple >> fluid thrill is present.**



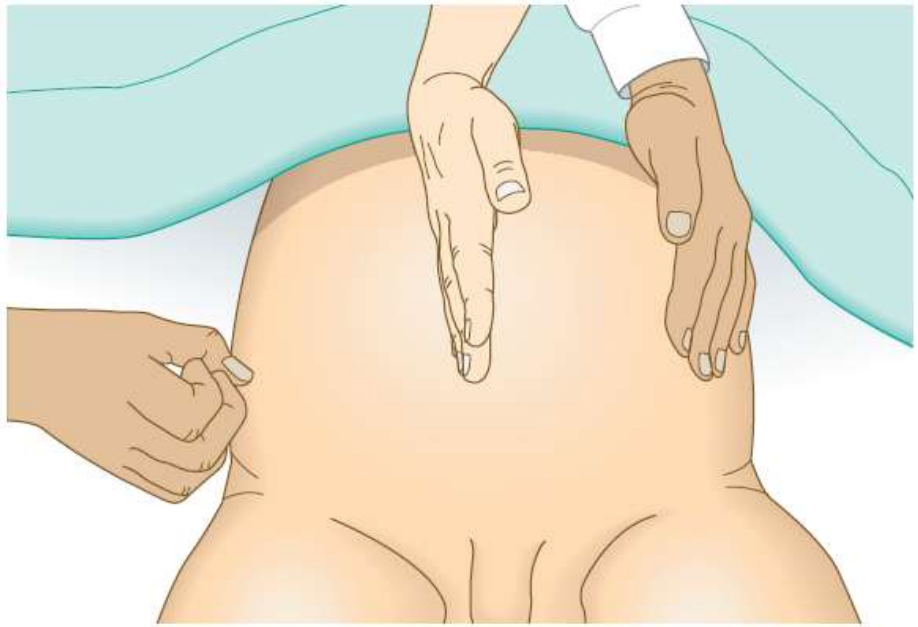


Fig. 6.18 Eliciting a fluid thrill.

SAAG

[Serum-Ascites Albumin Gradient]

	SAAG (g/dL)	
	≥ 1.1	< 1.1
Total protein (g/dL)		
< 2.5	Cirrhosis	Nephrotic syndrome
	Acute liver failure	
≥ 2.5	CHF	Peritoneal carcinomatosis
	Constrictive pericarditis	TB peritonitis
	Budd-Chiari syndrome	Pancreatic ascites
	Veno-occlusive disease	Chylous ascites

AUSCULTATIO
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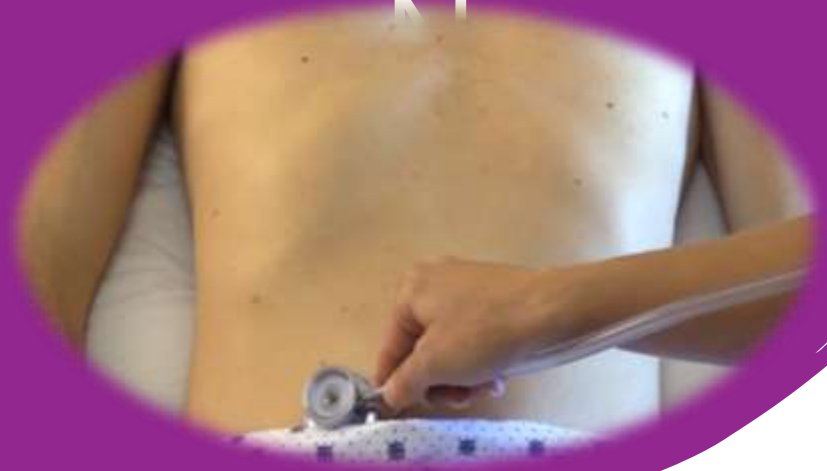
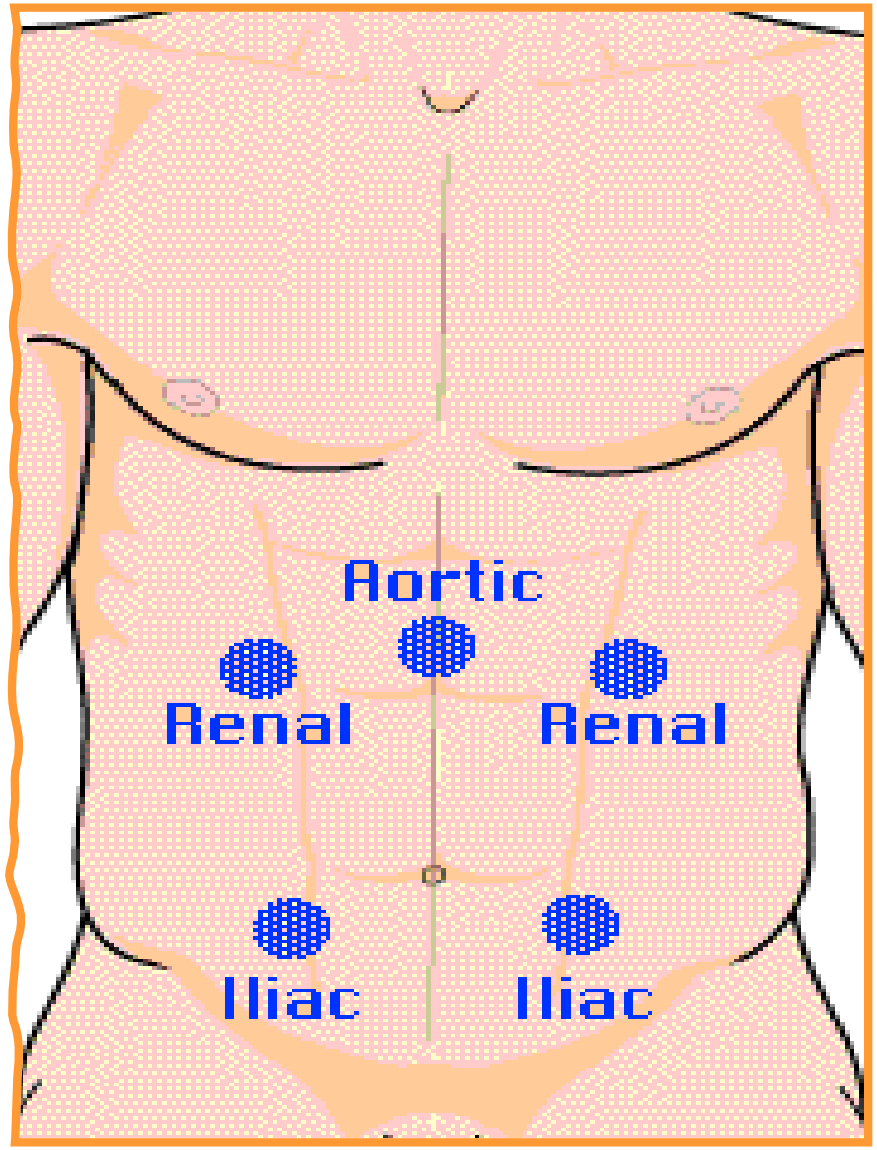


- **Bowel sounds:**
  - Diaphragm / Full 2 minutes.
  - Right of Umbilicus
  - Normal: once in 5-10 seconds.
  - Increased: IO *[increased frequency, volume, high-pitched, tinkling quality]*.
  - Absent: peritonitis, paralytic ileus.
- **Bruit:**
  - Liver (acute alcoholic hepatitis, HCC & AVM. *MCC: transmitted heart murmur*).
  - Vessels.
- **Friction Rub:**
  - Liver (perihepatitis) & Spleen (perisplenitis).

Bruits

- **Above umbilicus:** Atheromatous or Aneurysmal Aorta or SMA stenosis.
- **2-3 cm below & lateral to umbilicus:** Iliacs.
- **2-3 cm above & lateral to umbilicus:** RAS.



AUDIBLE SPLASH (Succession Splash)

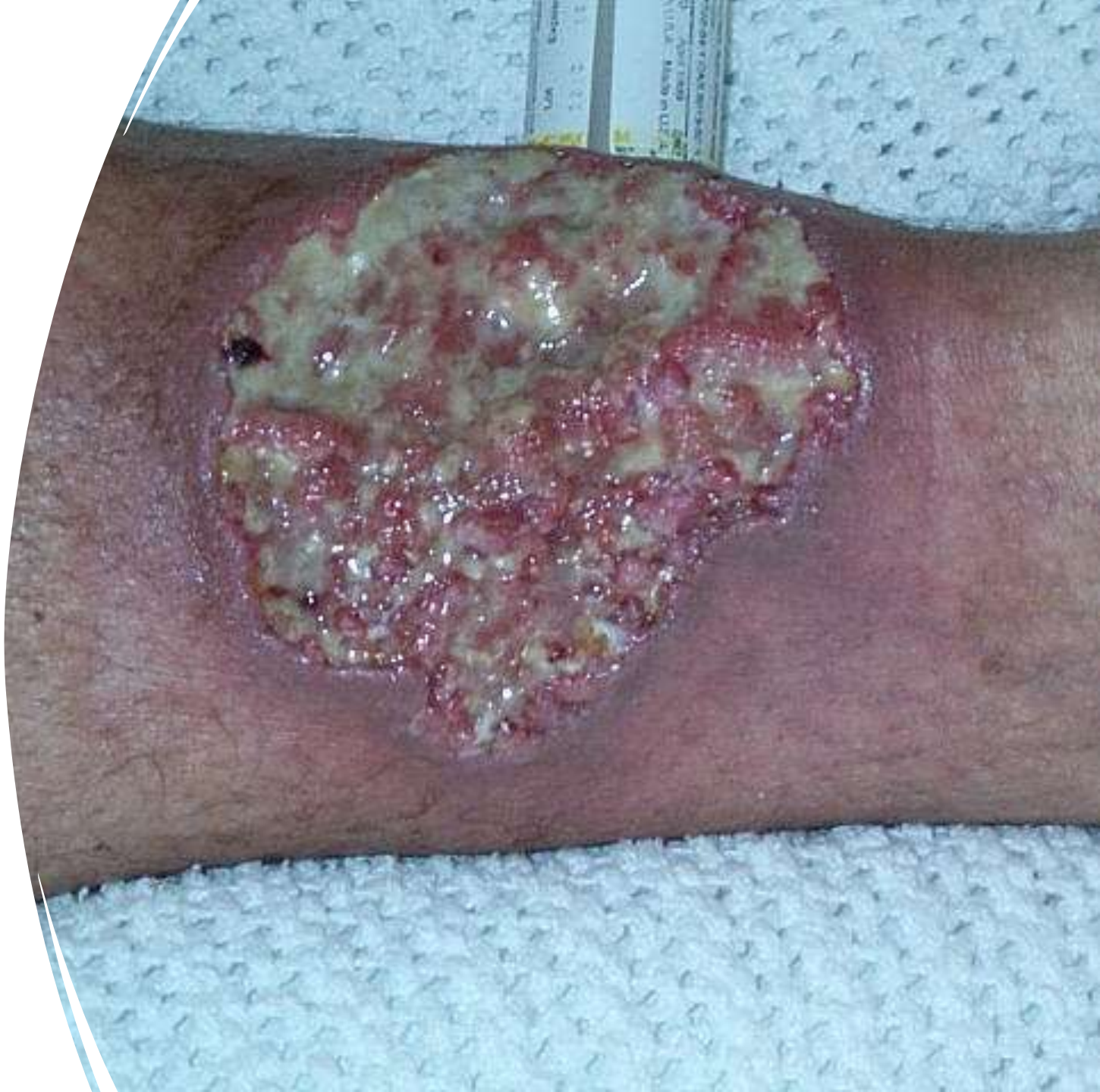
- **Explain to pt.**
- **Shake Abdomen with your both hands at pelvis.**
- **“Half-filled water bottle being shaken”.**
- **>4 hrs post-prandial >> Delayed Gastric Emptying as in Pyloric Stenosis**

OTHERS

Mention that You Have to Examine ..

1. **External Genetalia.**
2. **Hernial orifices.**
3. **DRE (PR).**
4. **Back.**
5. **LL**
   - *Edema,*
   - *Loss of hair,*
   - *Pyoderma gangrenosum,*
   - *Auscultate over femoral art.*

Pyoderma Gangrenosum



6.16 Causes of abnormal stool appearance

Stool appearance	Cause
Abnormally pale	Biliary obstruction
Pale and greasy	Steatorrhoea
Black and tarry (melaena)	Bleeding from the upper gastrointestinal tract
Grey/black	Oral iron or bismuth therapy
Silvery	Steatorrhoea plus upper gastrointestinal bleeding, e.g. pancreatic cancer
Fresh blood in or on stool	Large bowel, rectal or anal bleeding
Stool mixed with pus	Infective colitis or inflammatory bowel disease
Rice-water stool (watery with mucus and cell debris)	Cholera


THANK YOU


GOOD LUCK
GOOD LUCK
GOOD LUCK