

The History And abdominal examination

Elias jan arteen
FRCSI

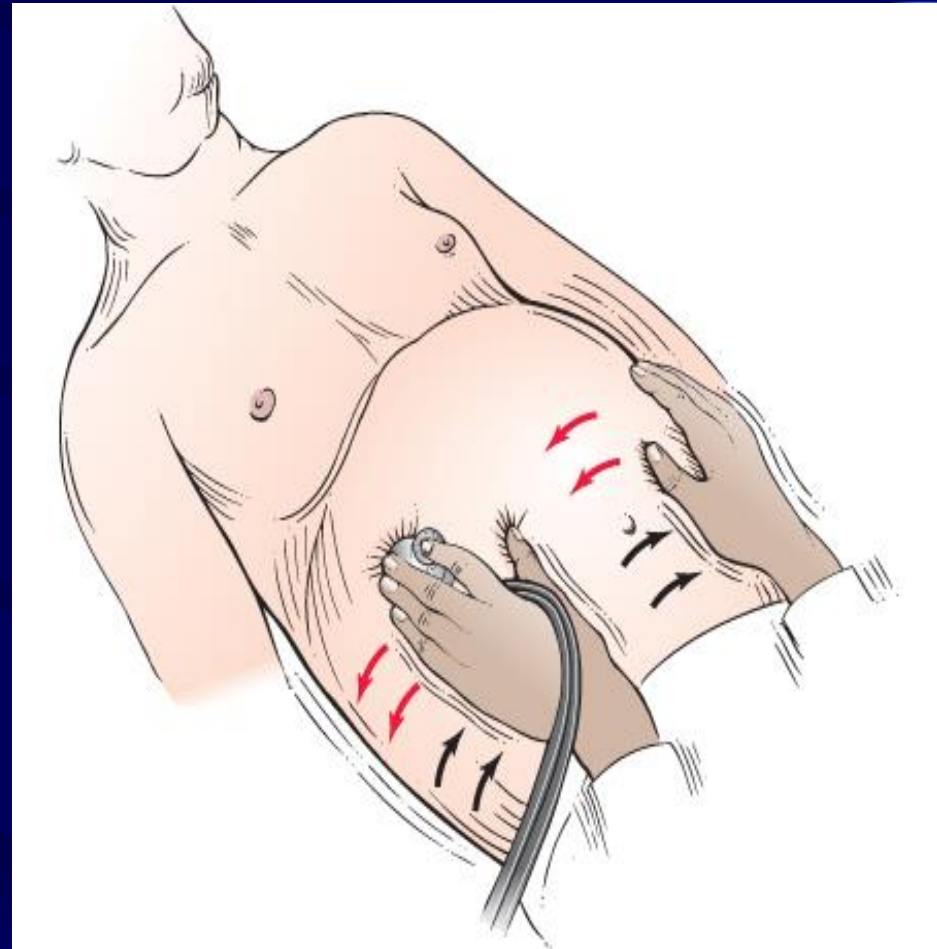
Auscultation

- It always precedes percussion.
- Listen for bowel sounds, with warm stethoscope.
- Absent bowel sound only after 5 minutes.
- Listen for arterial bruits.
- Venus hum (*Kenawy's sign*).
- Friction rub.
- Succussion splash.



Splash Sign

- **Splashing** sound indicative of air or fluid in body cavity with shaking individual normal in stomach full of liquids.



AUSCULTATION

Bowel Sounds all 4 Quadrants

SOFT GURGLING/CLICKING

Active (audible)

5 to 25 / minute

Hypoactive

< 5/minute

Hyperactive

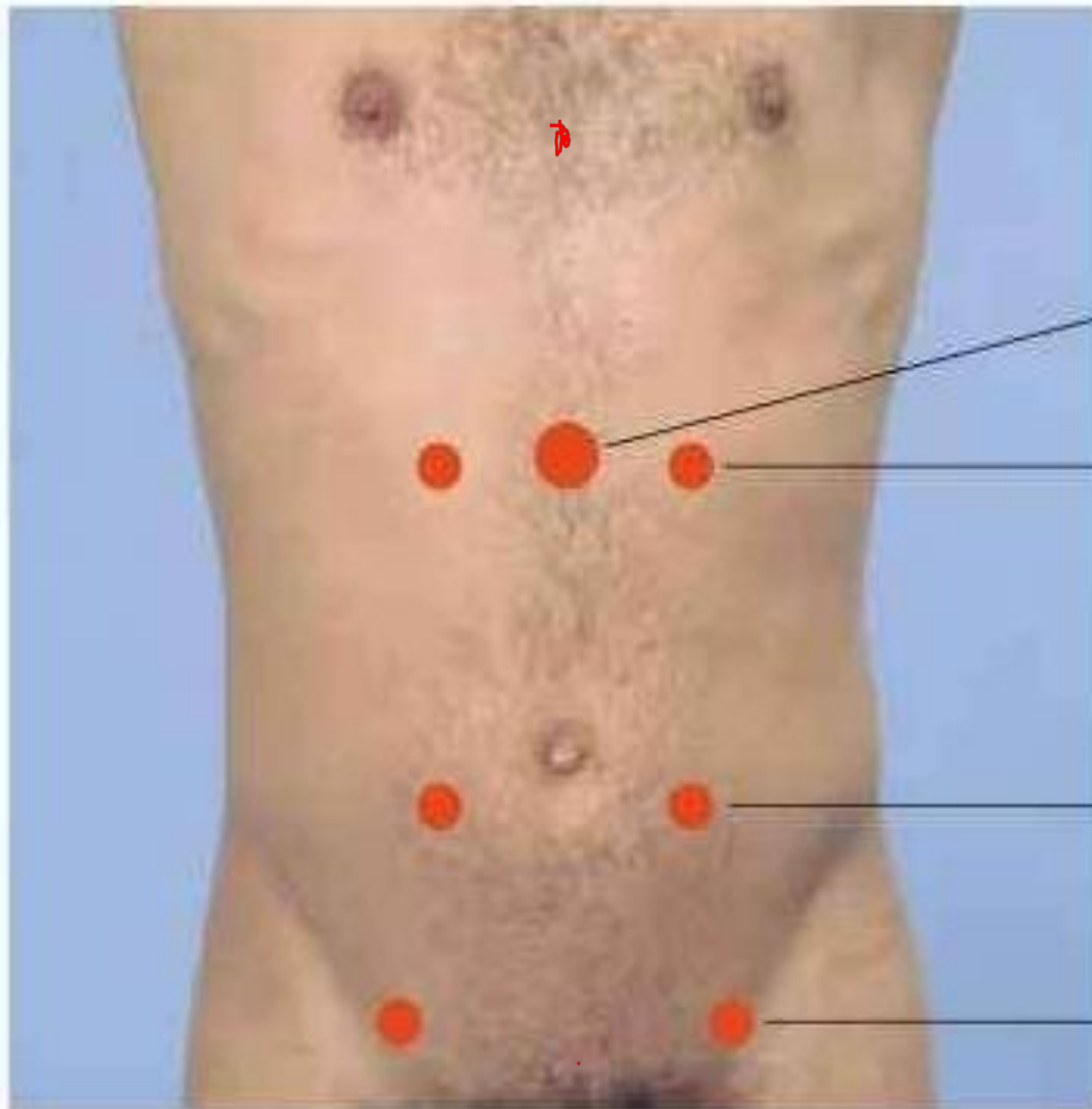
> 25/minute

Absent
listening

After 5 minutes of continuous

Loud Prolonged BS are called Borborygmi





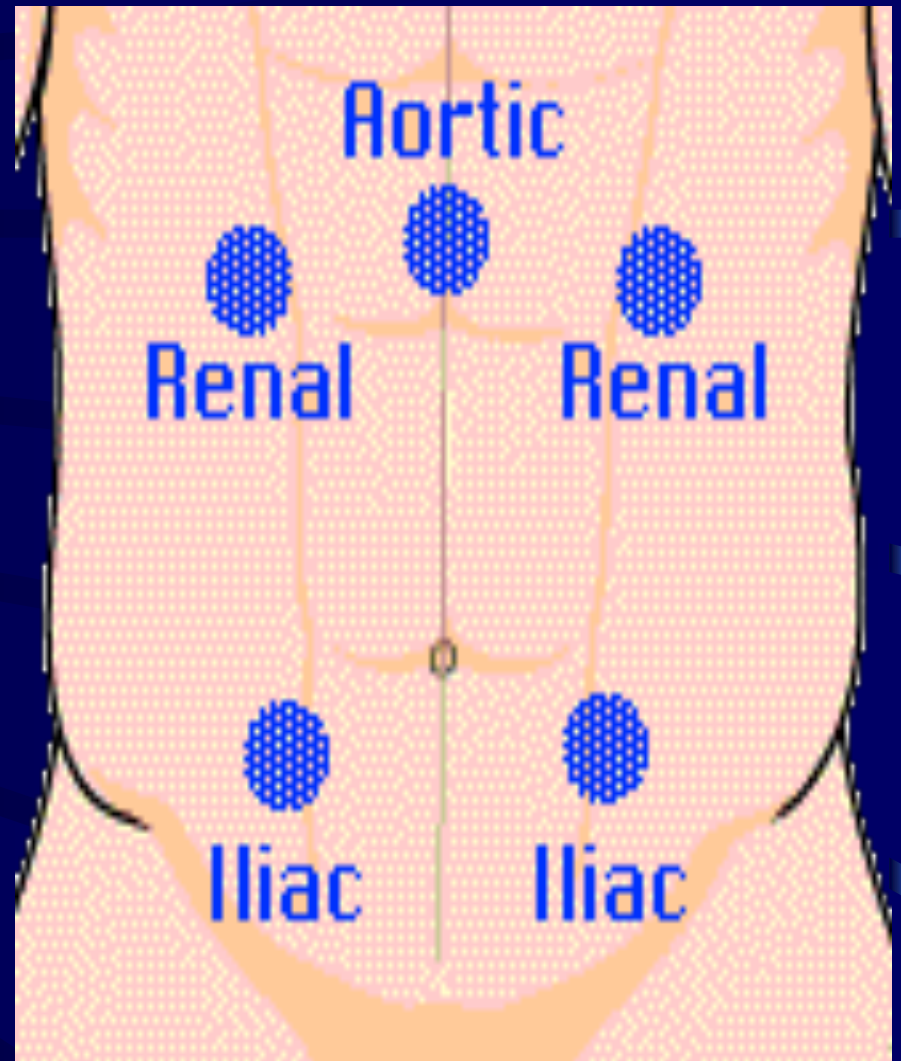
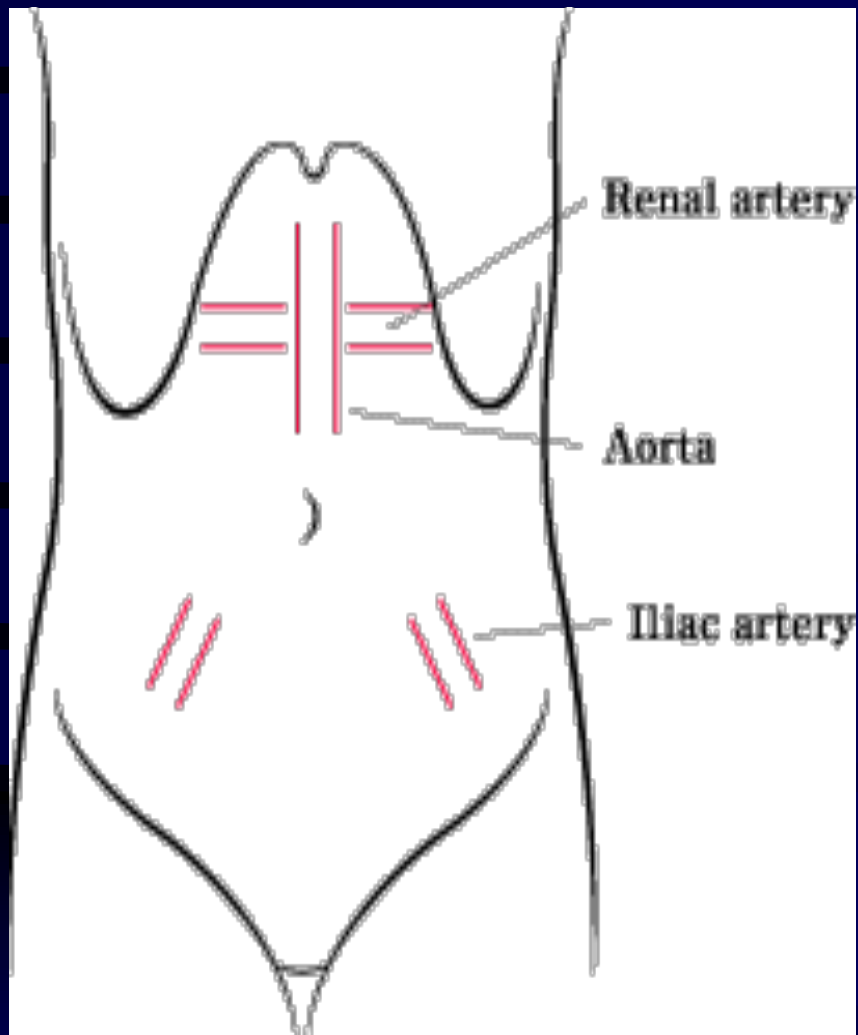
Aorta

Renal artery

Iliac artery

Femoral artery





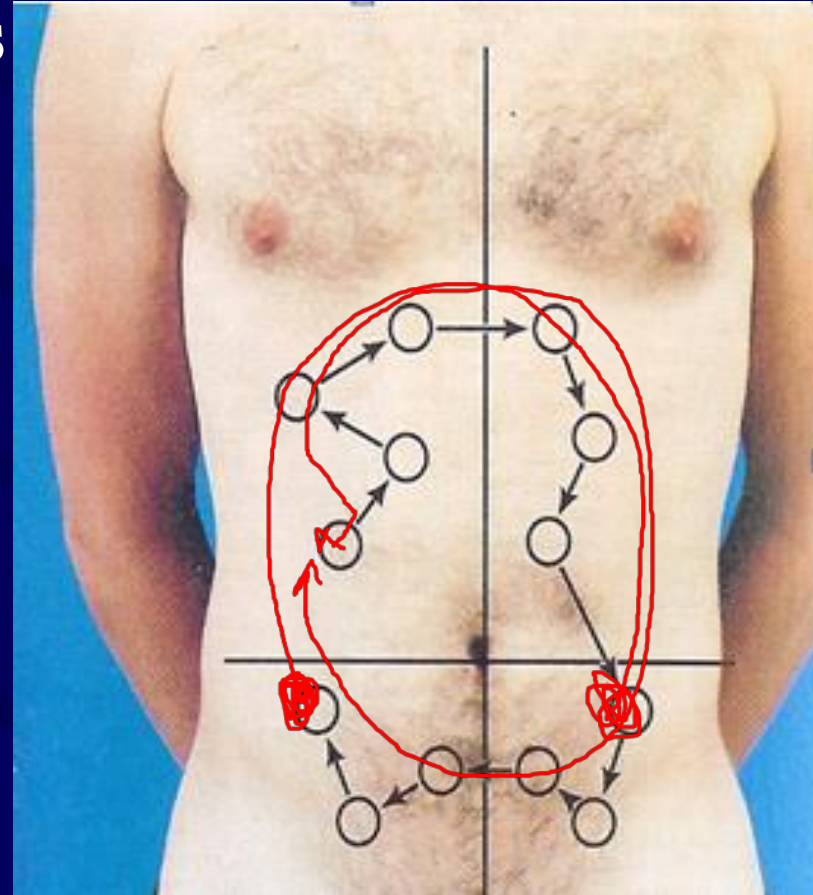
Percussion

- Percussion Is used to assess the Size and Density of organs in abdominal cavity.
- Used to detect presence of Fluid (Ascites) or Air (Distension) .
- First percuss all quadrants , tympanatic , or dull .
- Liver percussion , start at right mid clavicular line, at **area of resonance percuss** upward and downward .
- Liver $\geq$ 1-2 cm below costal cartilage is abnormal .
- Measure the vertical span of the liver, usually 6-12 cm .
- Assess liver descent .

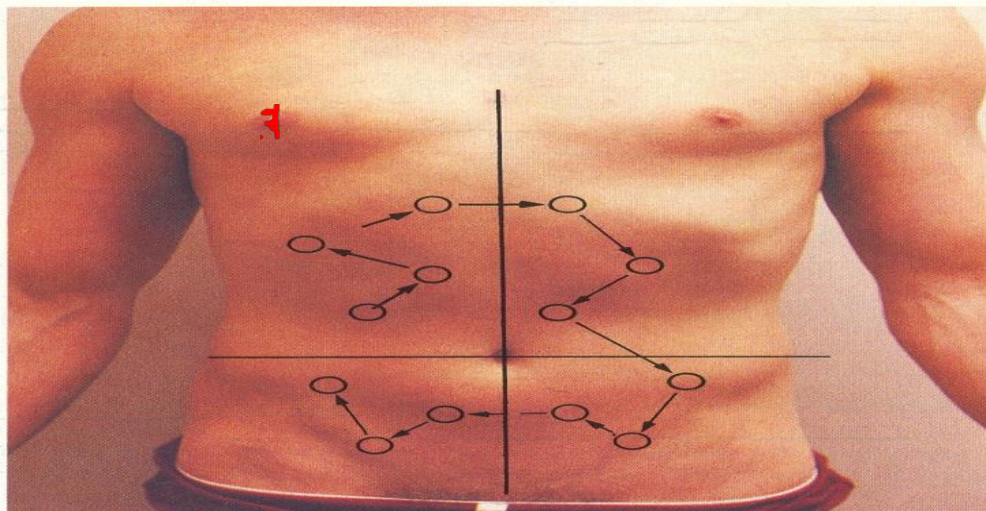


PERCUSSION

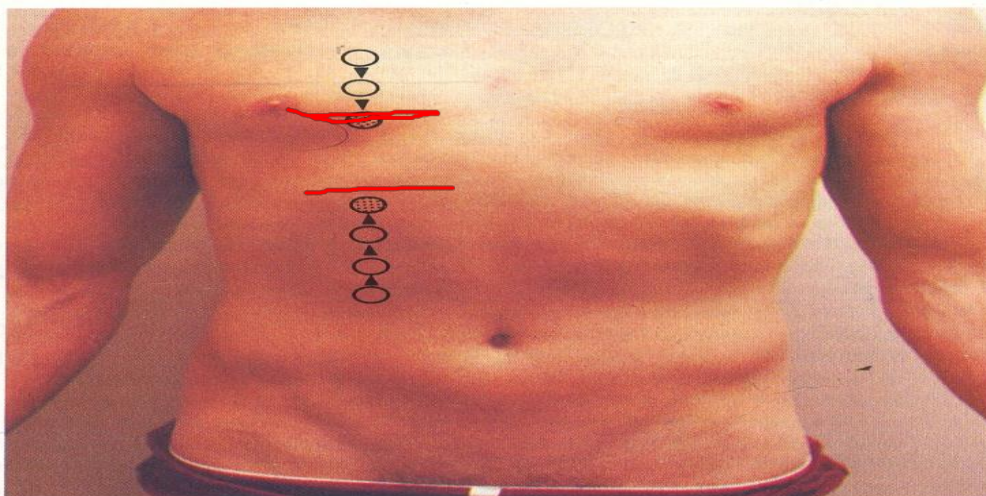
- Assessment technique used to assess size and density of organs and masses in the abdomen .
- Used to measure Size of organs (liver or spleen) .
- Used to identify Masses.
- Use to assess Tenderness.
- Used to identify Ascites.
- Used to identify Air or Fluid in stomach or in bowel.
- Used alone or in conjunction with palpation or to validate palpatory findings.



-10
tic route for ab-
percussion.



-11
percussion route.



There are two basic sounds with Percussion

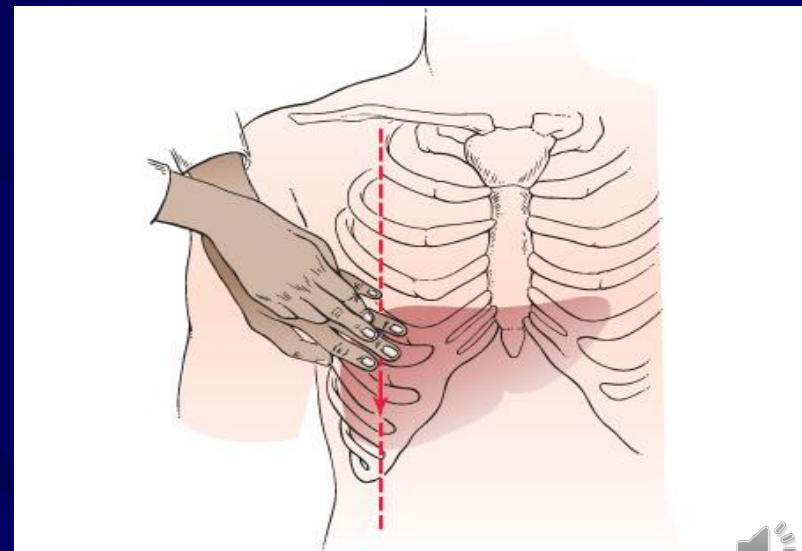
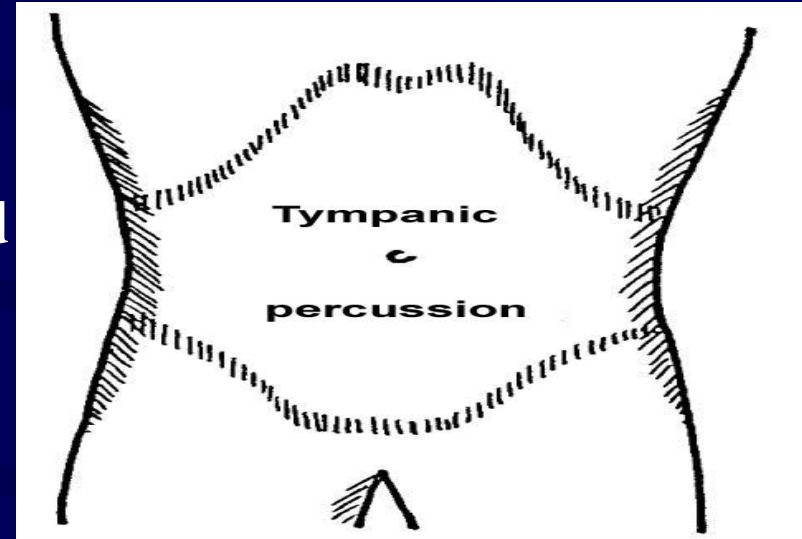
Tympanitic :

Drum-like musical sounds produced by percussing over Air Filled structures Stomach & intestine.

Is the commonest sound.

Dull sounds :

Occur when a solid structure (liver) or fluid (ascites) lies beneath the region being examined.



Percussion

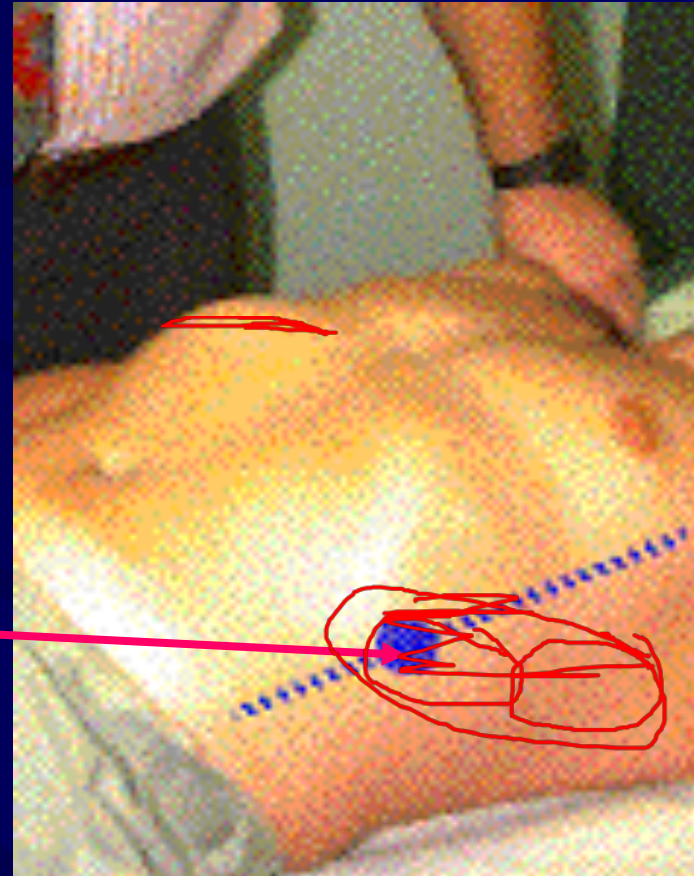
Spleen

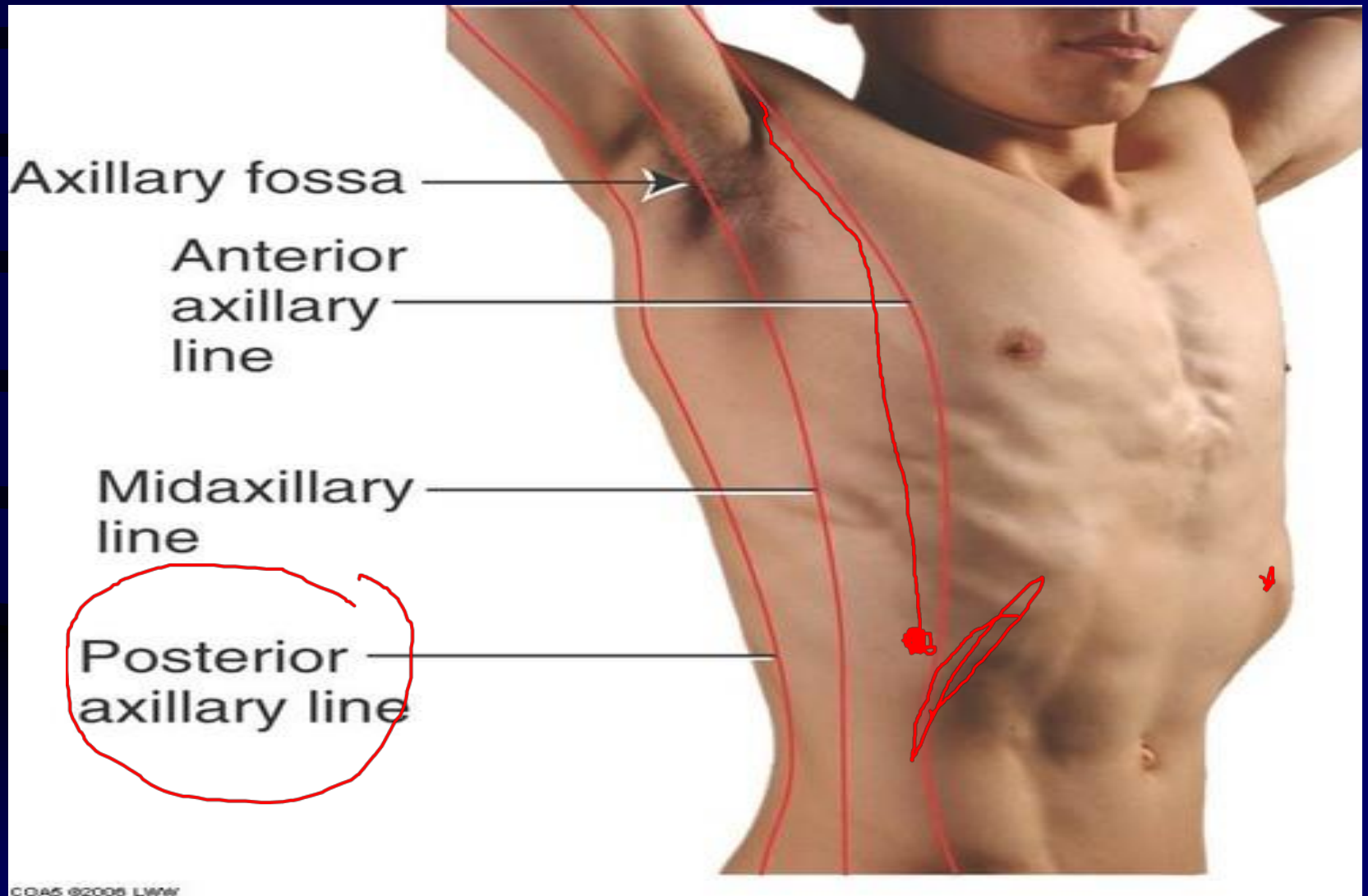
- Percuss posterior to mid axillary line, small area of dullness from 6-10 rib.
- Full stomach may mimic splenic dullness.
- Percuss the lowest left intercostal space, in anterior axillary line, before and after breathing
(Castell's Sign).



Percussion at Castell's Spot

- Castell's Spot identified
 - Left anterior axillary line identified
 - Left lower costal margin identified.
- Percussion at Castell's Spot while patient inhales and exhales deeply.
- Traube's Triangle



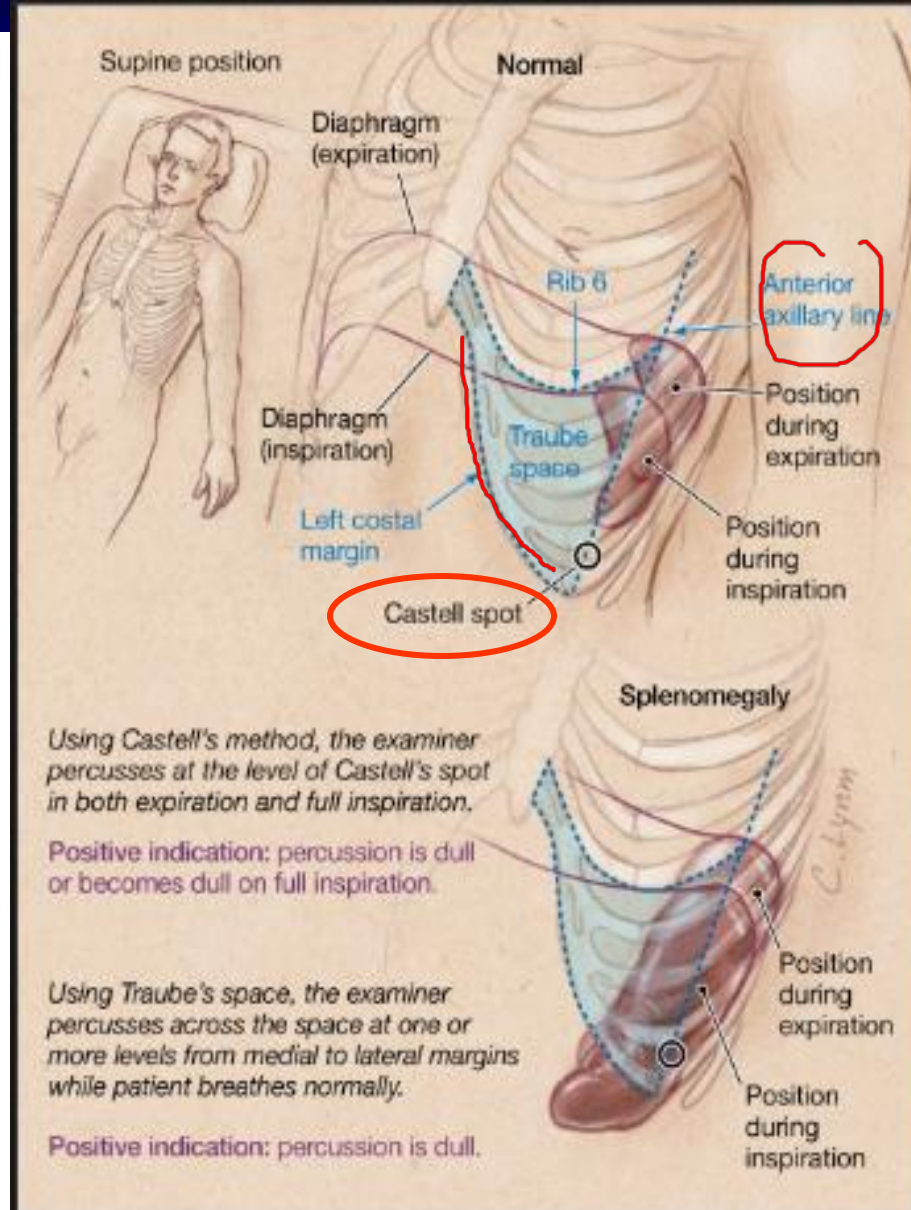
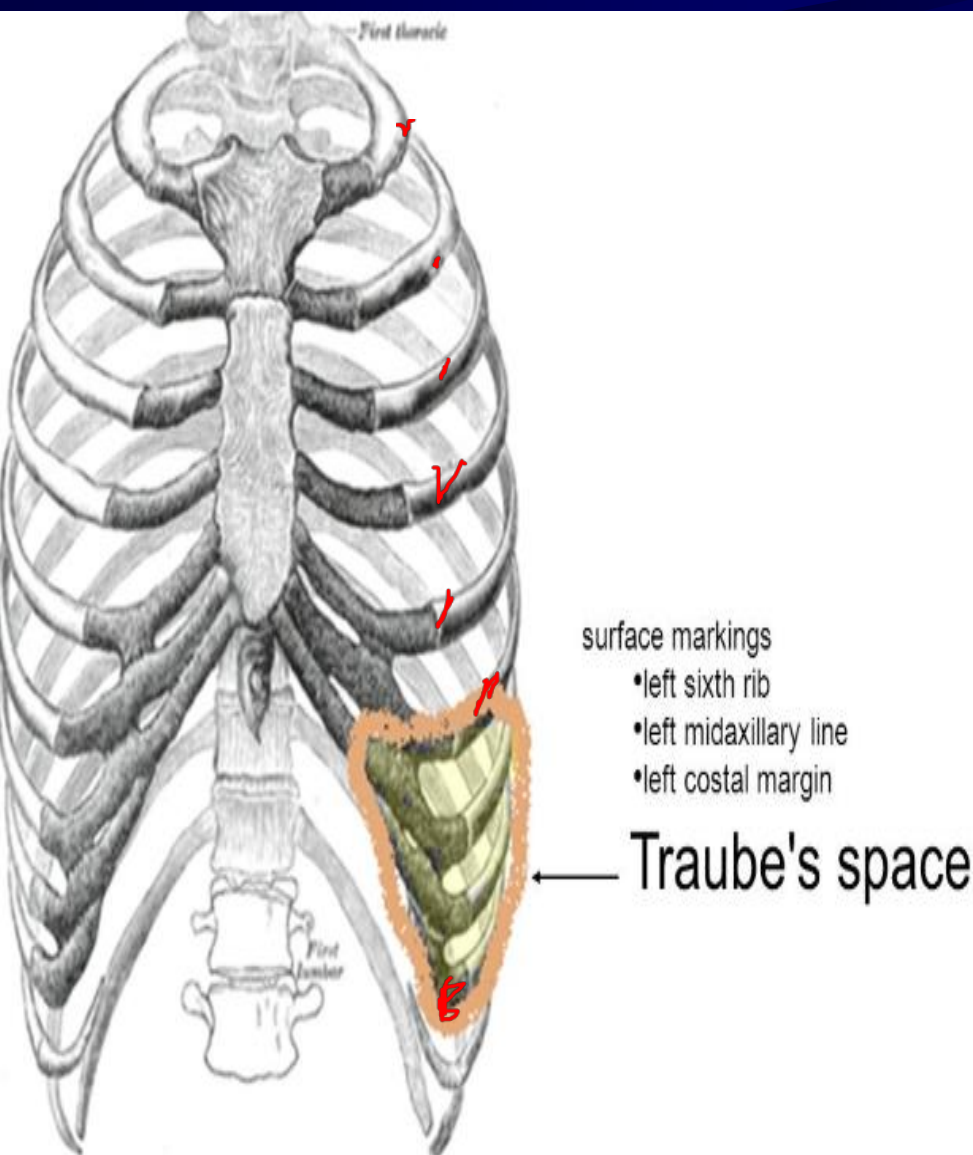


Traube's area



Fig. [8.5]: Traube's area



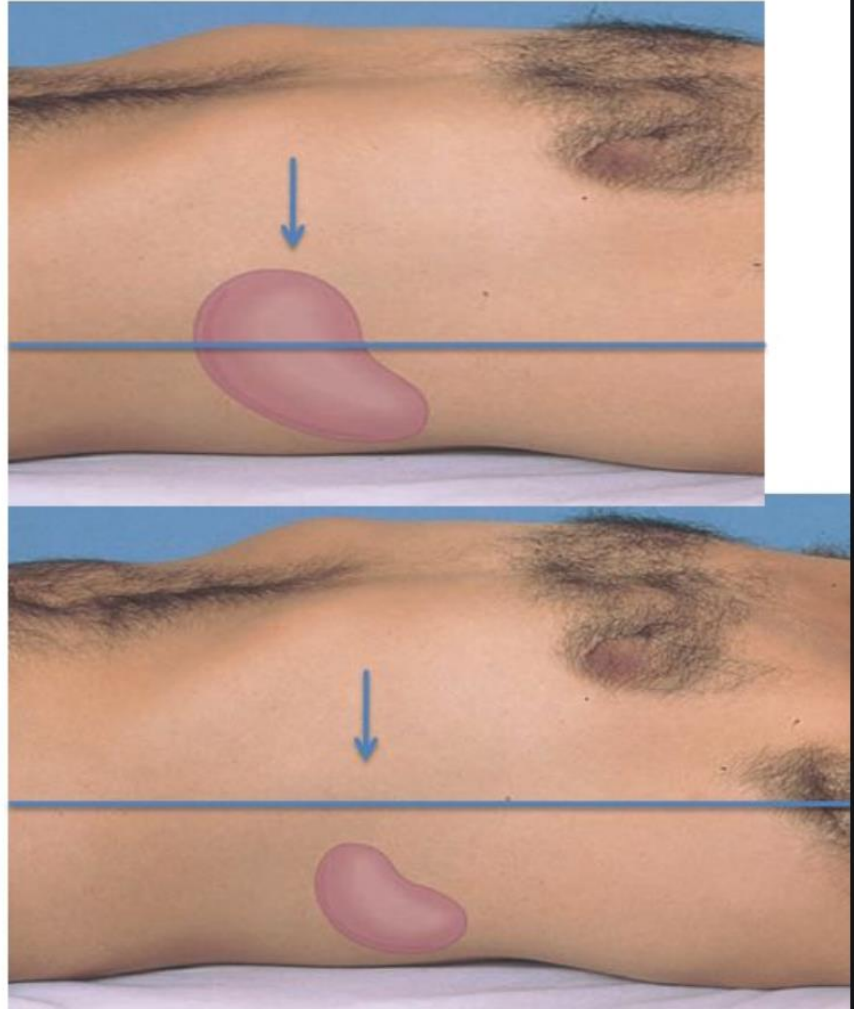


Traube's triangle



Objective Data- Percussion

- Percuss for Splenic Dullness
 - Percuss for dullness from the 9th to 11th intercostal space just behind midaxillary line (*Traube's space*)
 - Normally, the area of splenic dullness is not wider than 7cm and should not be anterior of the midaxillary line; tympany should prevail
 - Dullness anterior of the midaxillary line indicates **Splenomegaly**



Palpation

- Enemy of palpation is *Muscle Rigidity*.

- Superficial palpation by flat of the hand .

- Deep palpation by flexor surface of the fingers .
- Palpation of solid organs during inspiration, hand advance during expiration .



How to Help to Relax Abdomen

- Using warm hands, flat of hand .
- Ask patient to take deep breath with open mouth .
- Ask patient to flex his knees .
- Press over lower part of sternum gently.
- Blanket separate your hand from skin of patient.



Palpation

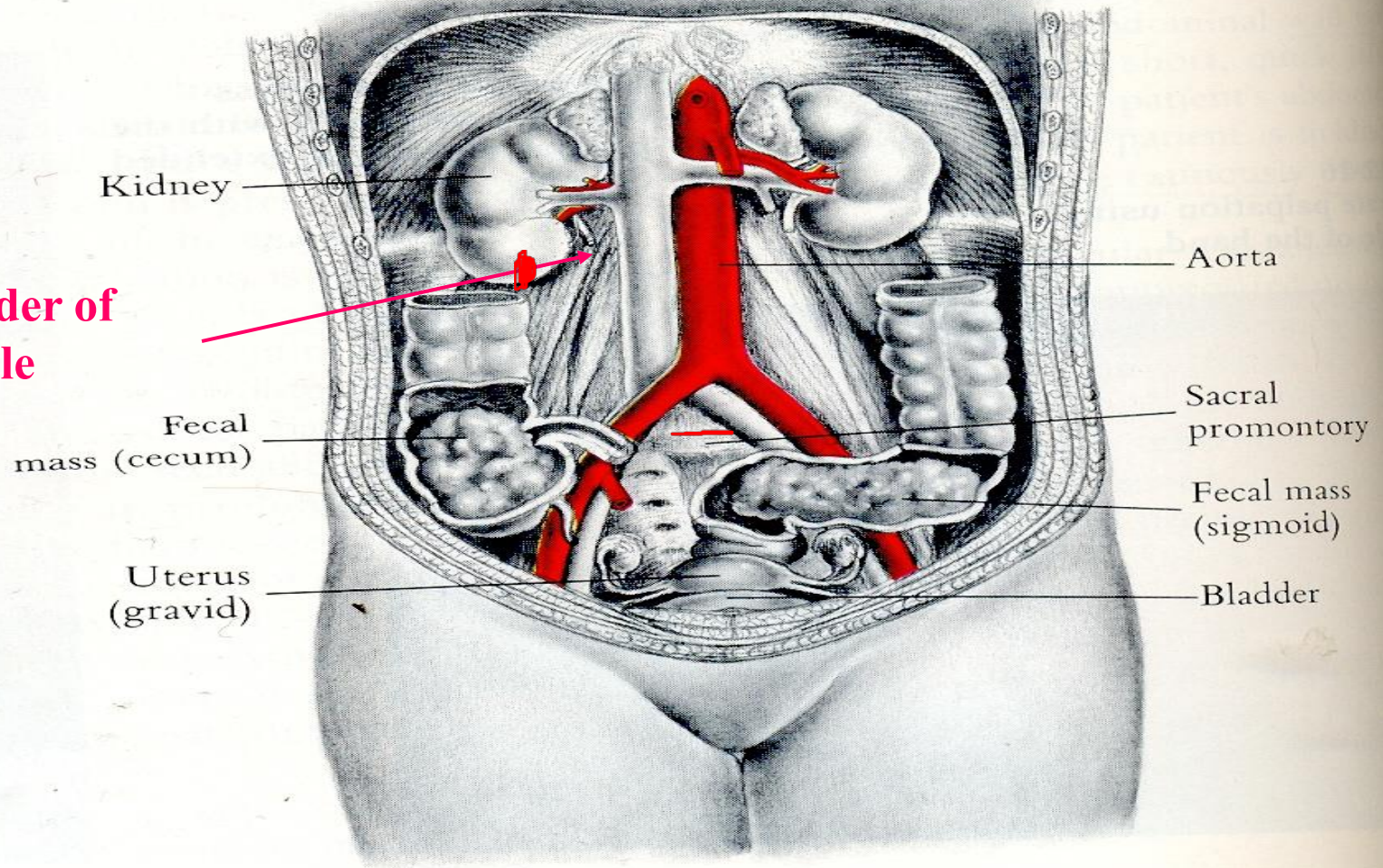
- Palpation assess Organs in peritoneal cavity.
- Detect Muscle spasms, Masses, Ascites.
- Detect areas of Tenderness, and Rigidity.
- Light systemic superficial palpation of the nine quadrants.
- Palmer surface of fingers, push in abdo-wall one cm.
- Identify muscle resistance, Tenderness, Large mass, Distended structure, Temperature, Pulsations.

Use the flat of the palmar surface of fingers to palpate through the abdominal wall



Abdominal structures felt commonly as Masses

Lateral border of
rectus muscle



Deep palpation

Masses

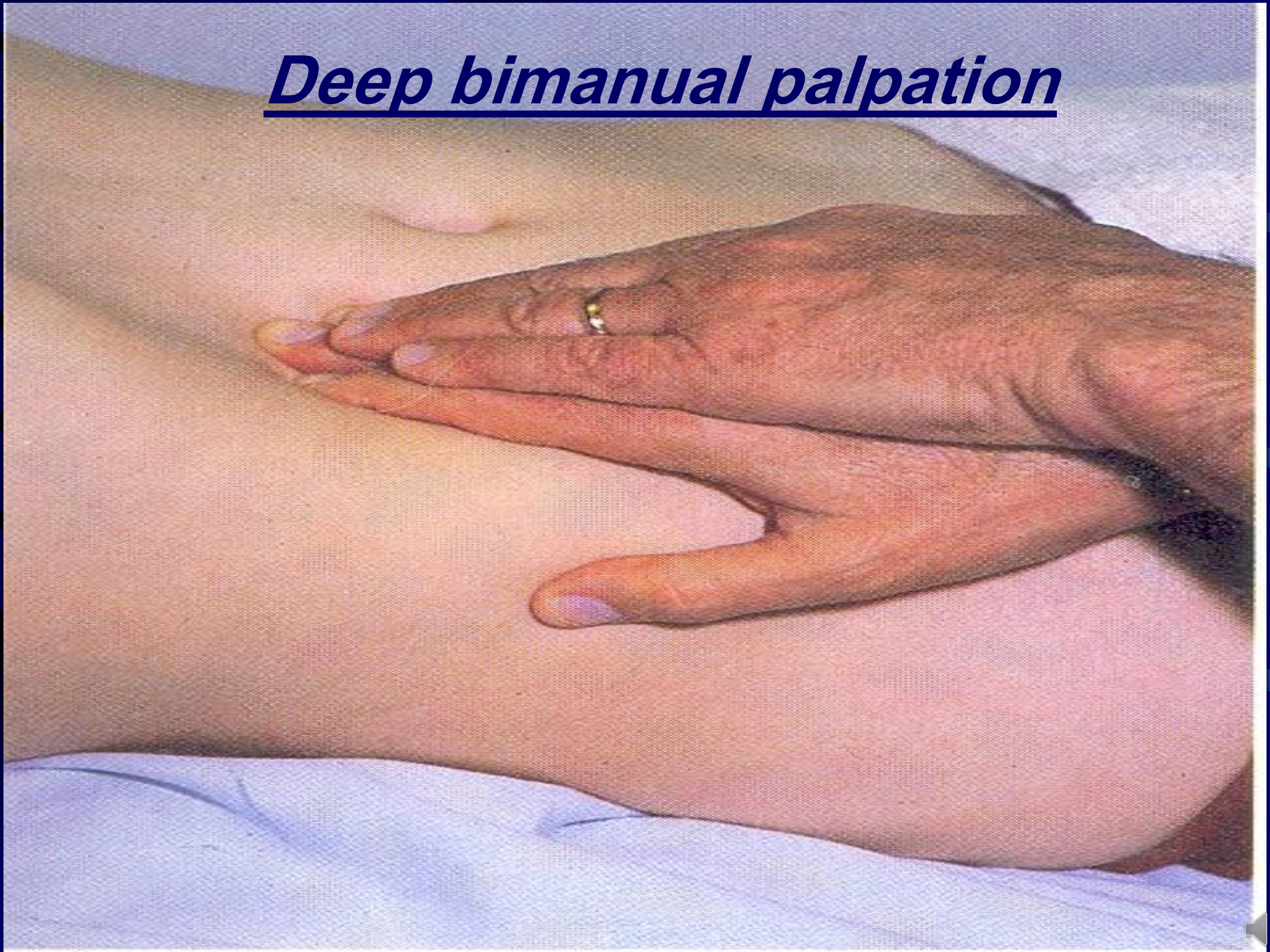
- Site, Size , Shape, Consistency, Surface, Skin over ,
Edge, Tenderness , Pulsation, Mobility, Movement
with respiration, Impulse on cough .
- Regional L . N s .
- Superficial or deep to abdominal muscles .
- Bimanual examination in obese patients .



Relation to abdominal muscles



Deep bimanual palpation





Ways of palpation

Single hand

Bimanual palpation

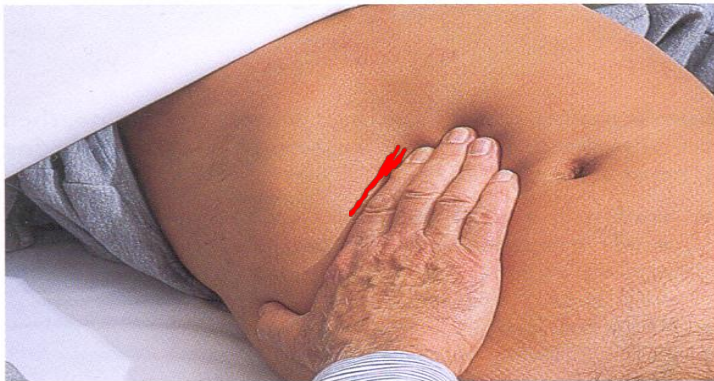


Fig. 7.9 Correct method of palpation. The hand is held flat and relaxed and 'moulded' to the abdominal wall.



Fig. 7.11 Method of deep palpation in an obese, muscular or poorly relaxed patient.

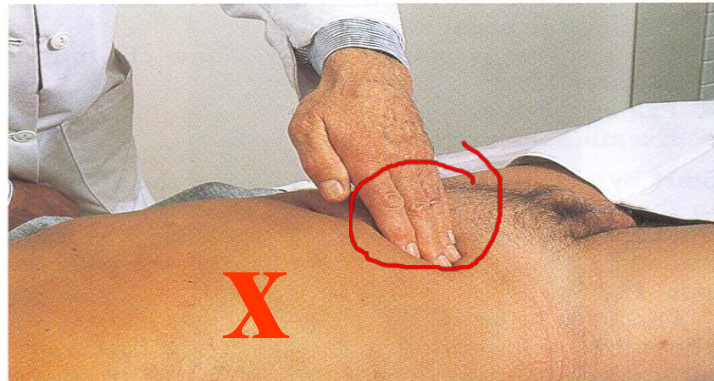


Fig. 7.10 Incorrect method of palpation. The hand is held rigid and mostly not in contact with the abdominal wall.



Fig. 7.12 Palpation of the left kidney.



* In surgery, we palpate to exclude the urgency of the operation to

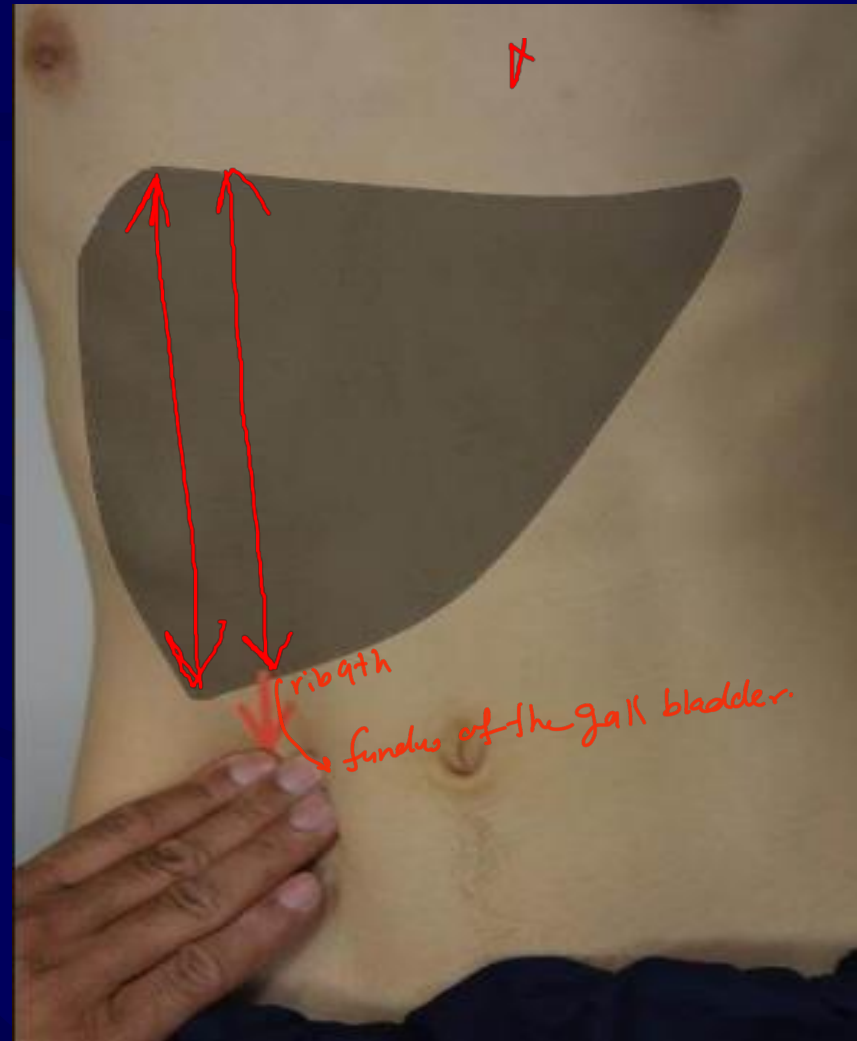
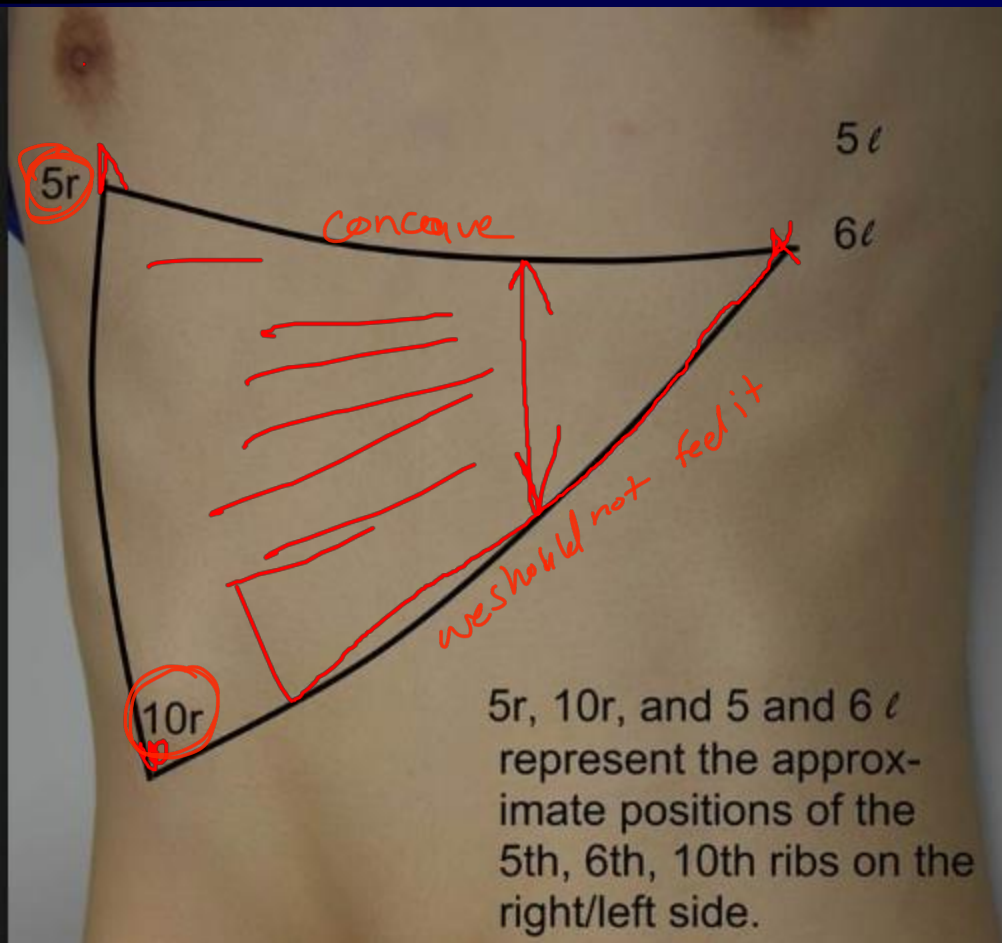
Palpation of liver

exclude peritonitis, hernia and masses...

- **Left hand under patient, right hand in right iliac fossa**, palpate deeply while patient take deep breath.
beginning point (resonance)
- **Liver is not felt**, **Lt lobe** can be felt **1-2cm** below costal margin in thin individual.
in the mid line
normal liver span → 6-12 in mid clavicular line
- In slim patient edge is felt **non tender**, **firm smooth**, even.
مشحون
- **Combined Palpation and Percussion** is needed to determine size of liver.
palpation (لمس)
- **Scratch test** in distended abdomen.



LIVER



●●● Liver palpation

- Liver is palpated to:
 - help determine if it is enlarged (span is maybe more important for this)
 - determine its consistency firm
soft
hard
 - find nodules → cirrhotic liver
→ metastasis..
 - detect pulsations (tricuspid regurgitation)



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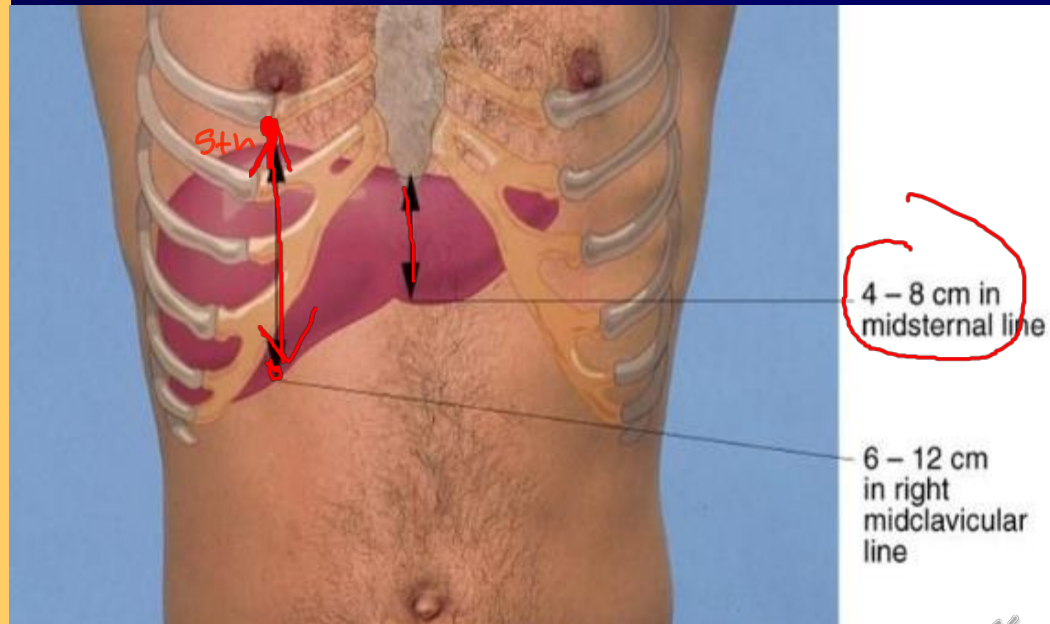
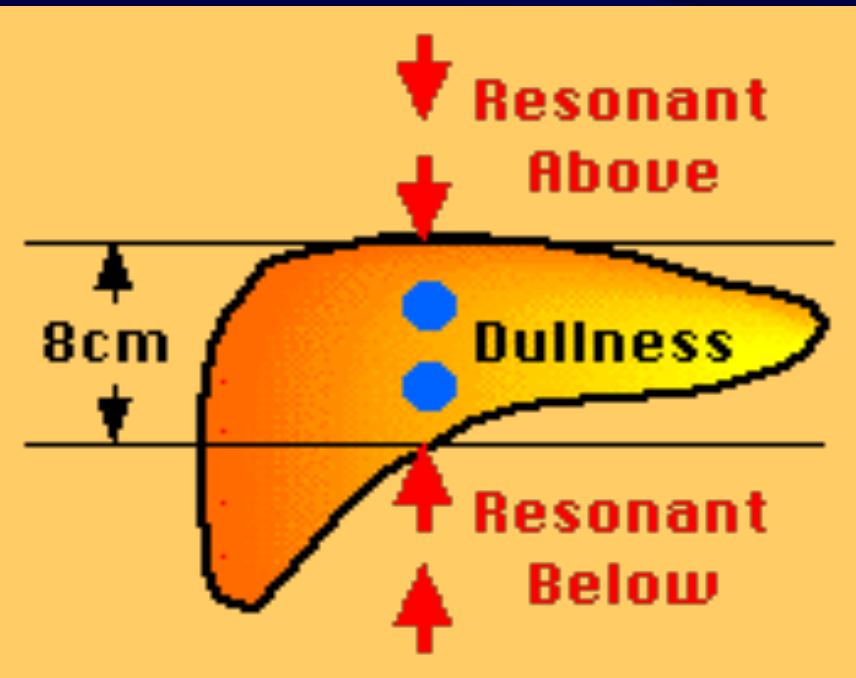
What should it feel like normally?

- ☐ a normal person, usually doesn't feel the liver.
- ☐ If you do feel it, the lower border should be soft with a regular contour and have a sharp border. no nodule.
- ☐ It's normal for the liver to be slightly tender, but not severely tender.

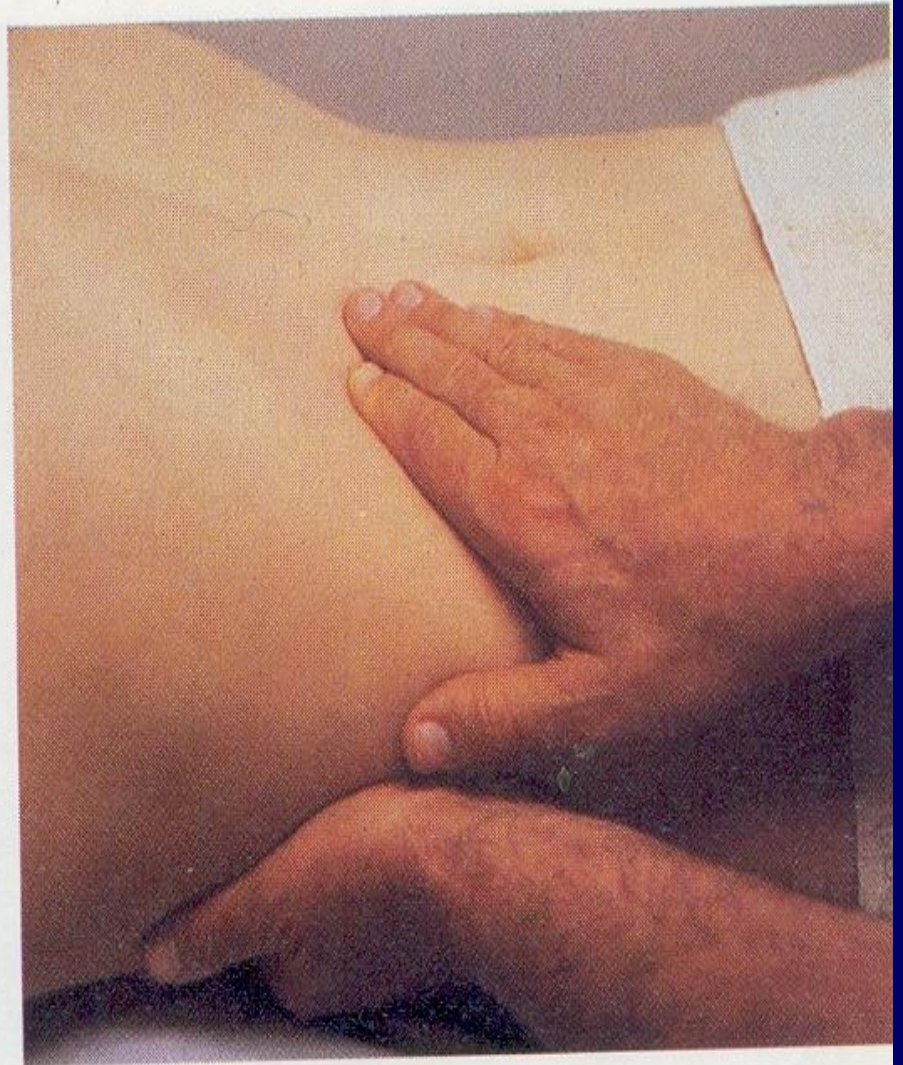
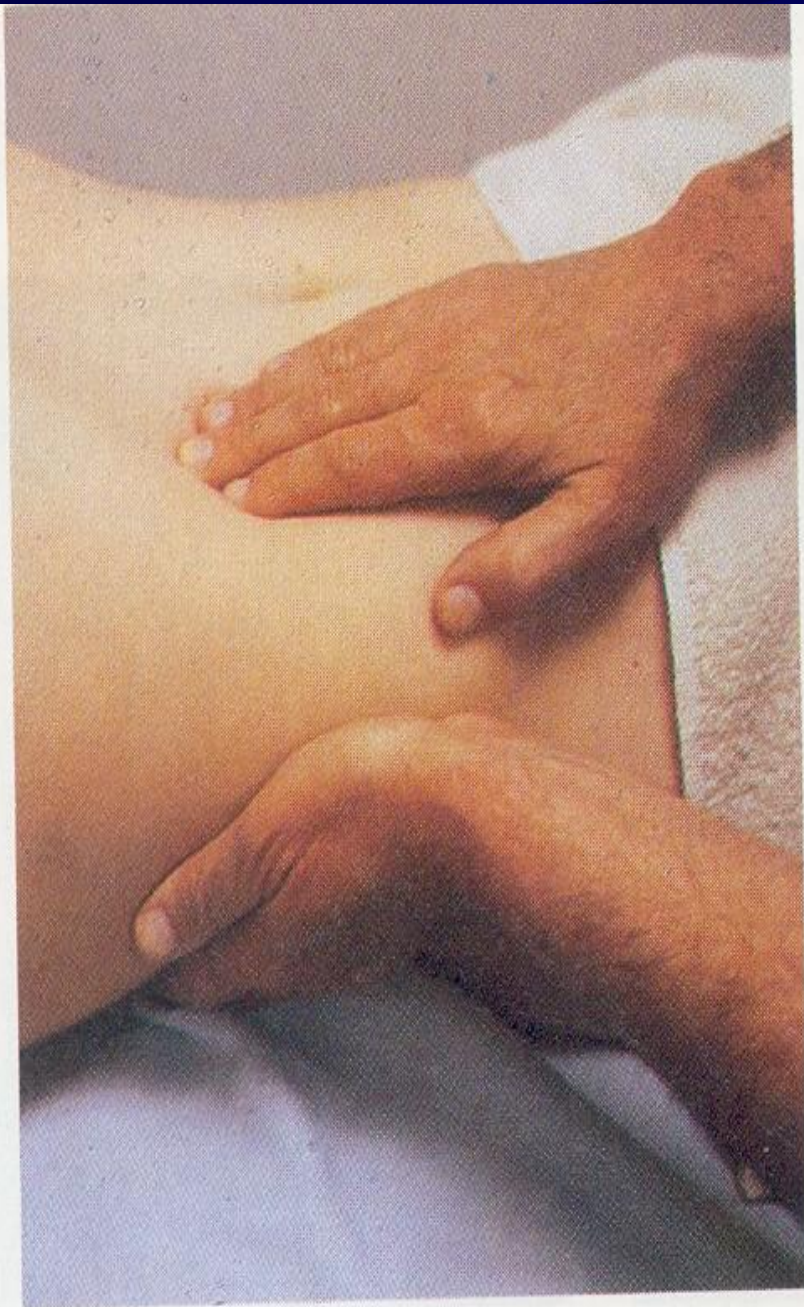
How to percuss the liver.

■ A normal liver measures 6 to 12cm, usually 8 to 12cm.

■ The reliability of percussion to assess liver size is limited

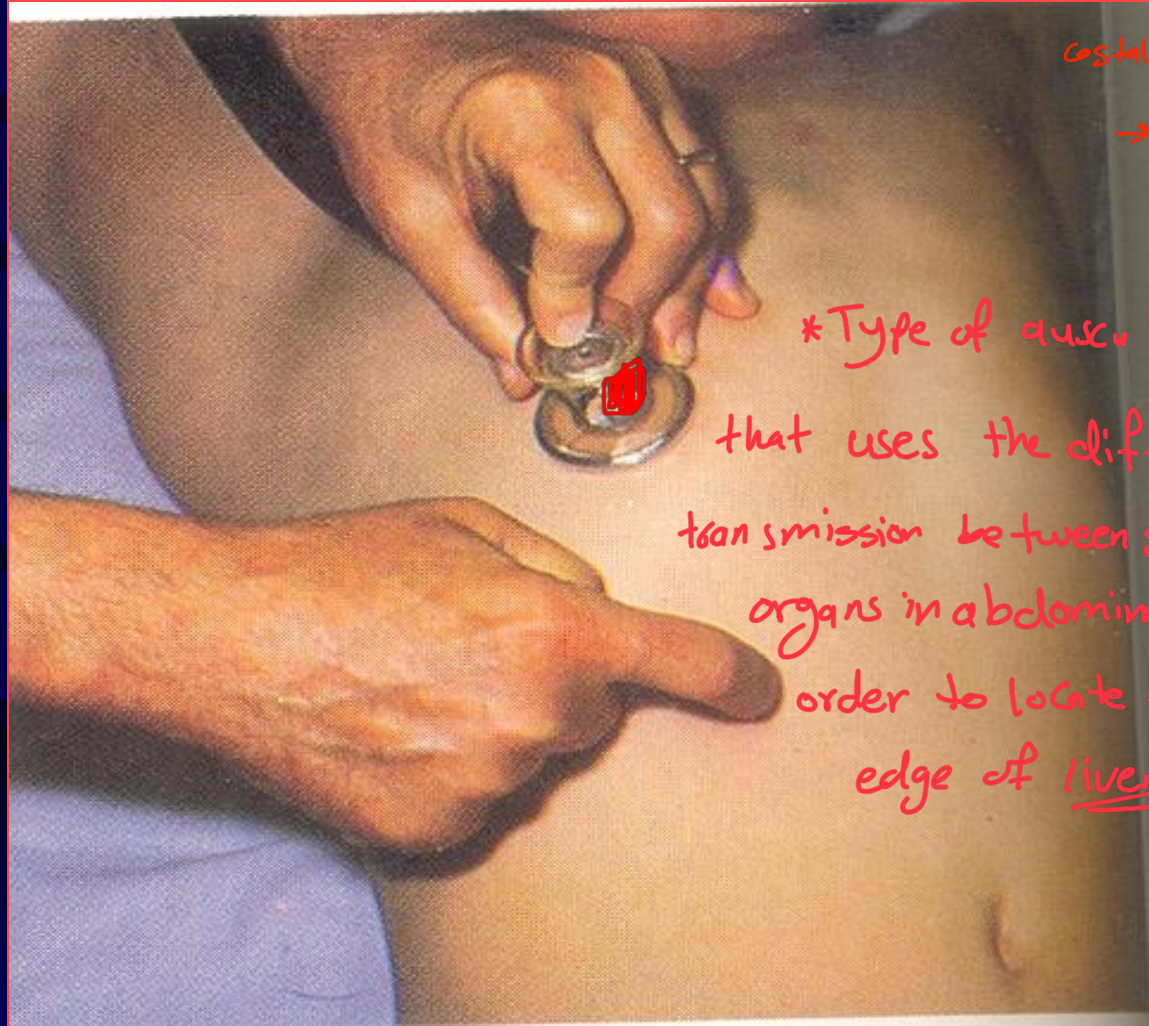


A



• Scratch test

to feel the lower border of the liver
if it lower than the costal cartilage



Costal cartilage of ribs

→ The sound way faster
in the solid

*Type of auscultatory percussion
that uses the difference in sound
transmission between solid and hollow
organs in abdominal cavity in
order to locate the inferior
edge of liver.



Hook method for liver palpation



Gall bladder

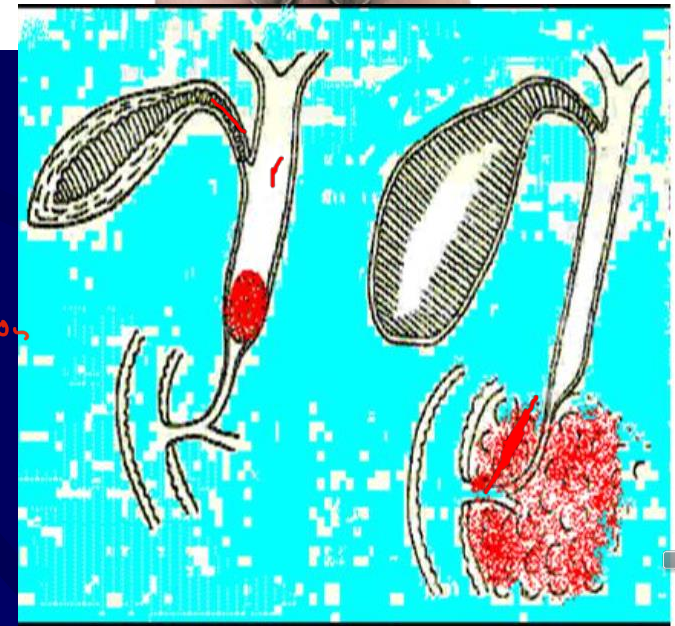
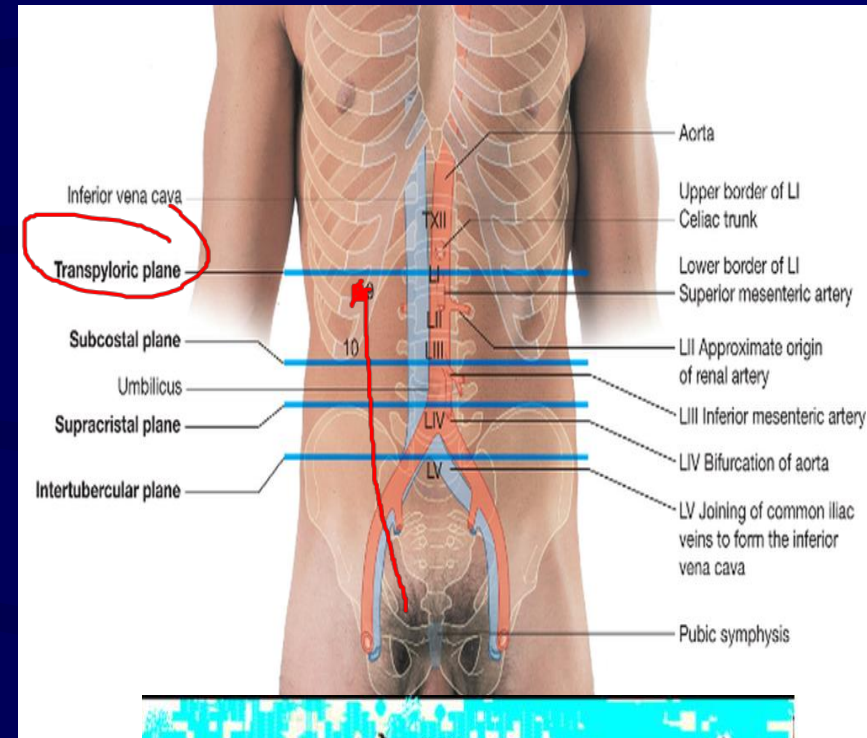
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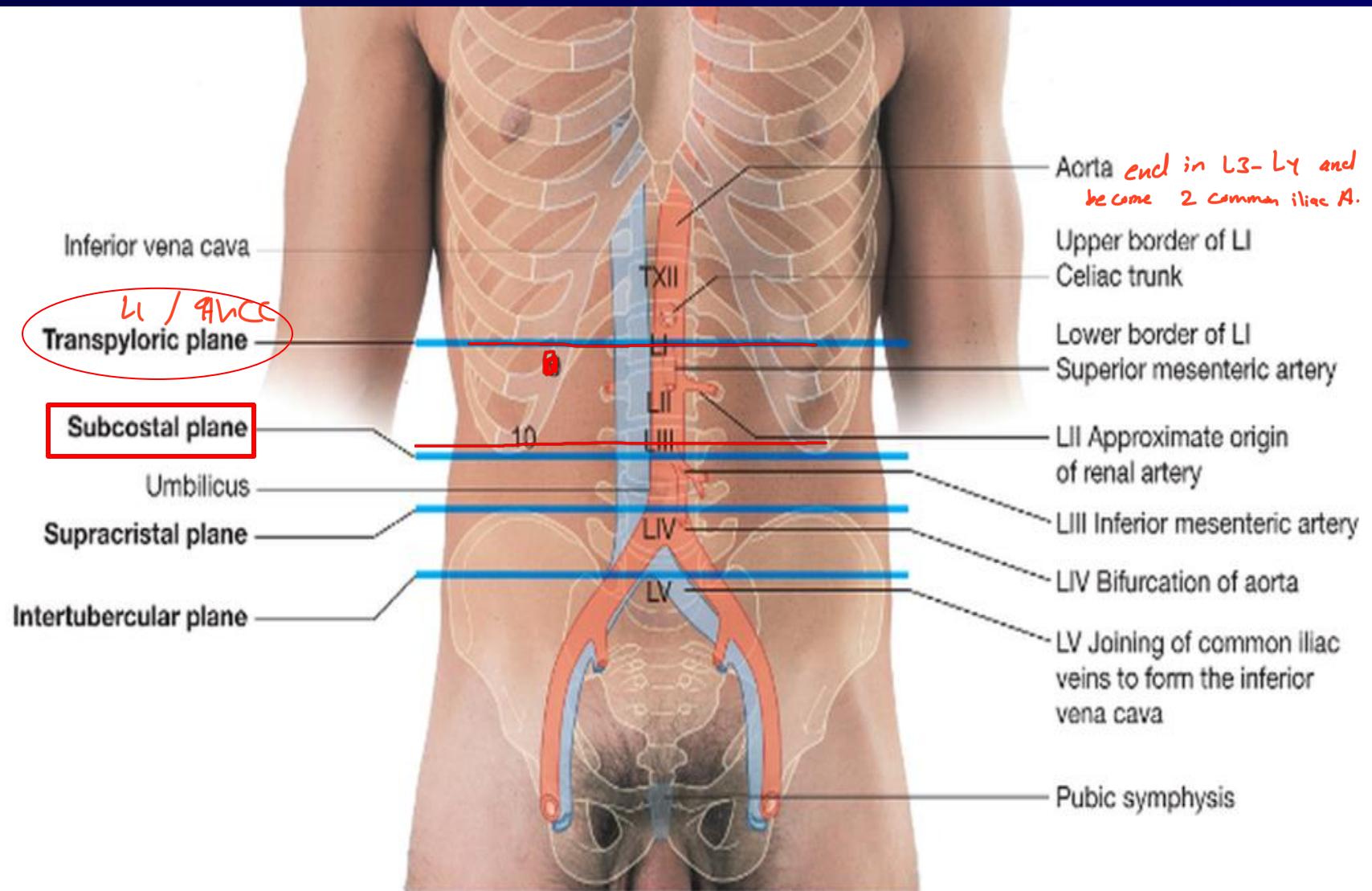
Funds of gall bladder, below 9th costal cartilage, Trans pyloric plane L1, where linea semilunaris cut the costal margin.

Healthy GB is not palpable.

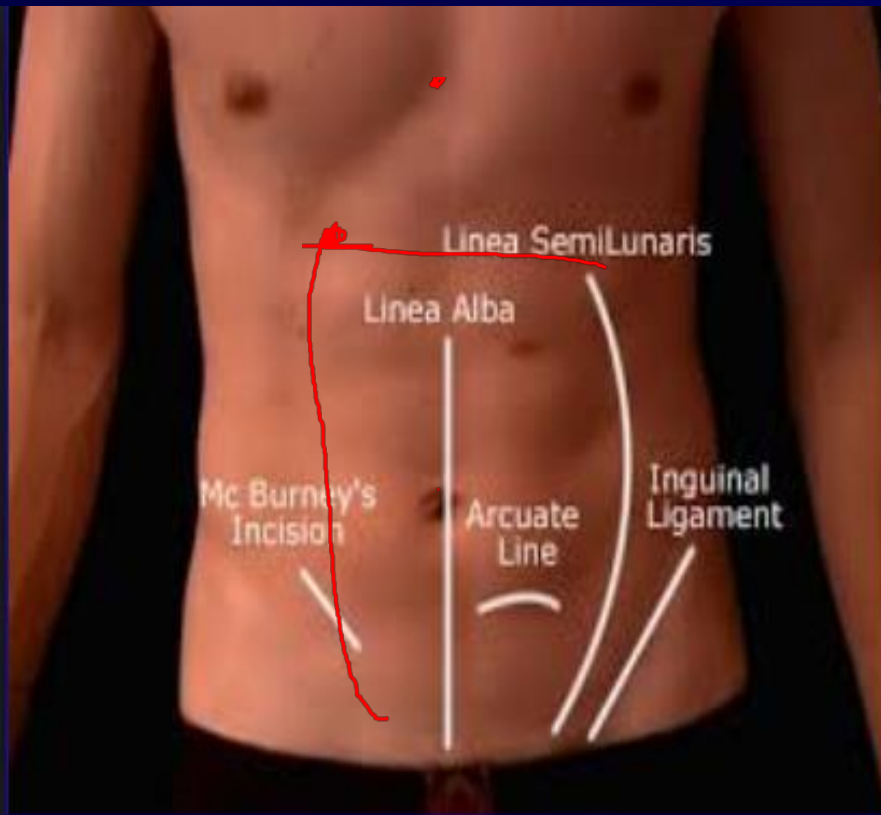
Palpable tender in cholecystitis, palpable non tender, in bile duct obstruction (Courvoisier's law).

Murphy's sign → in 2 way by the examination or by prove of the eco





Continue



* arcuate line → below it there is no post. layer of rectal sheath.

Σ → there is hernia occur between the junction of arcuate line and rectus sheath called sepiginal hernia
[linea semilunaris] 2-3cm ↑ inguinal hernia (6%)



intra peritoneal **Spleen** *more lat than you think.*

- Palpation as guide from right iliac fossa.

- Right hand below costal cartilage.

- Left hand in cost vertebral angle.

- *Spleen is usually not felt.*

- Percussion of **spleen is dull**.

- Palpable notch over medial border.

- Does not fill, and cannot be pushed in renal angle.

- *Spleen is more lateral than you think.*

N.B be gentle in palpating large spleen so not to rupture it

* enlarged **spleen** -

↳ down ward - forward - medially
[R+ iliac fossa.

- there is notch and cross the mid line...

enlarged **kidney** -

↳ down ward [l.f. iliac fossa]

never cross the mid line

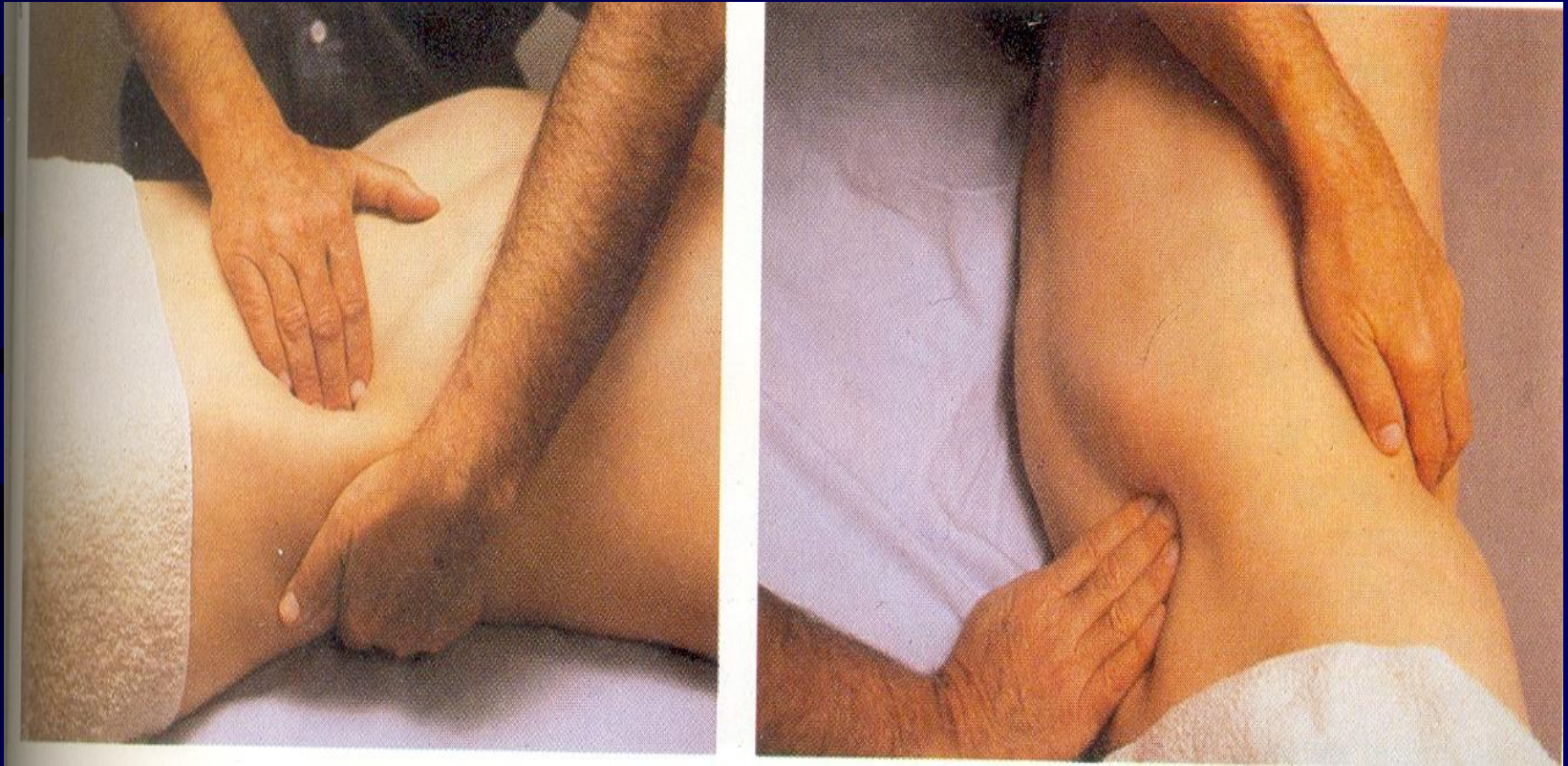
No notch.

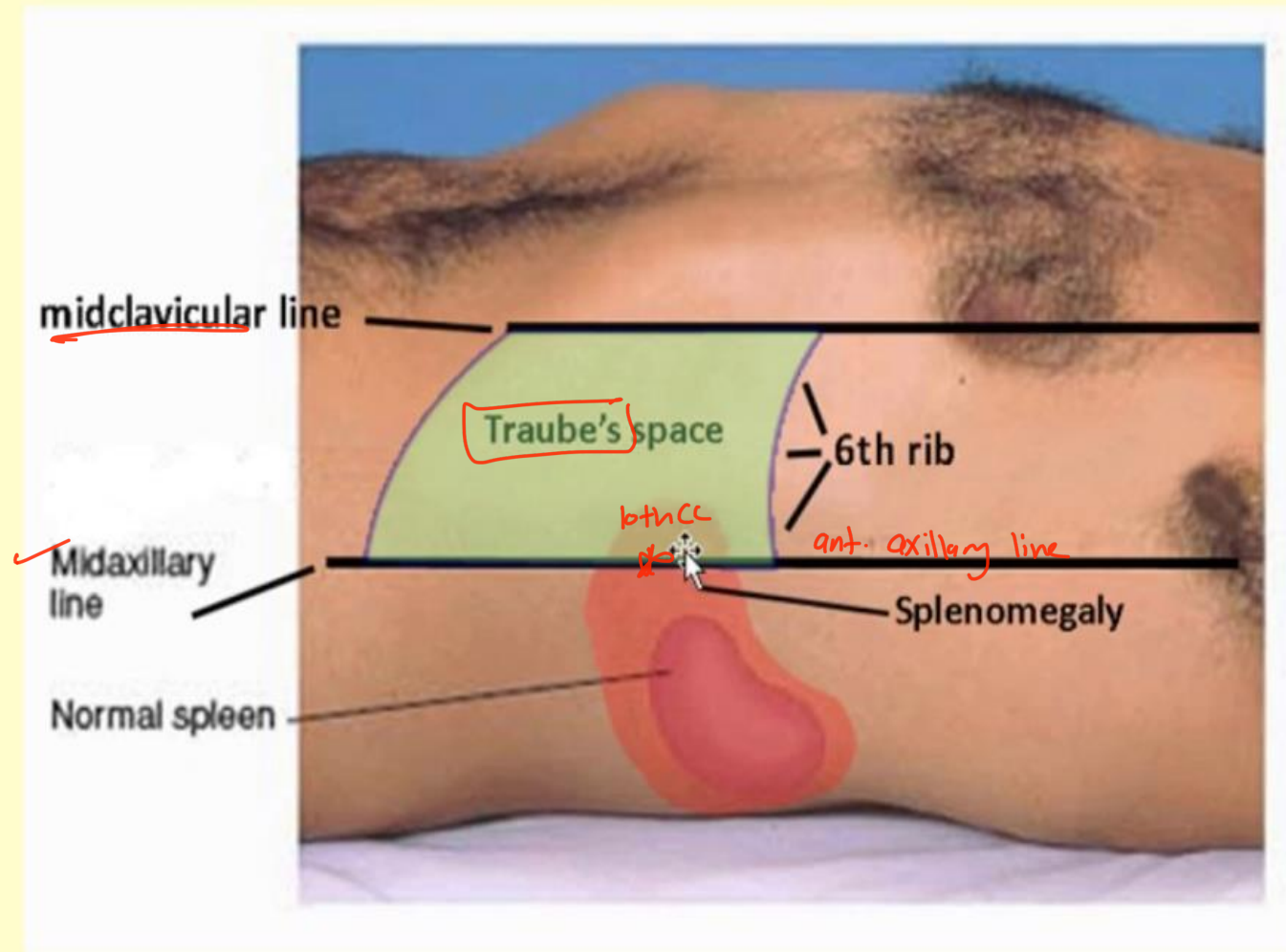
renal angle ← ما يوصل ال renal angle



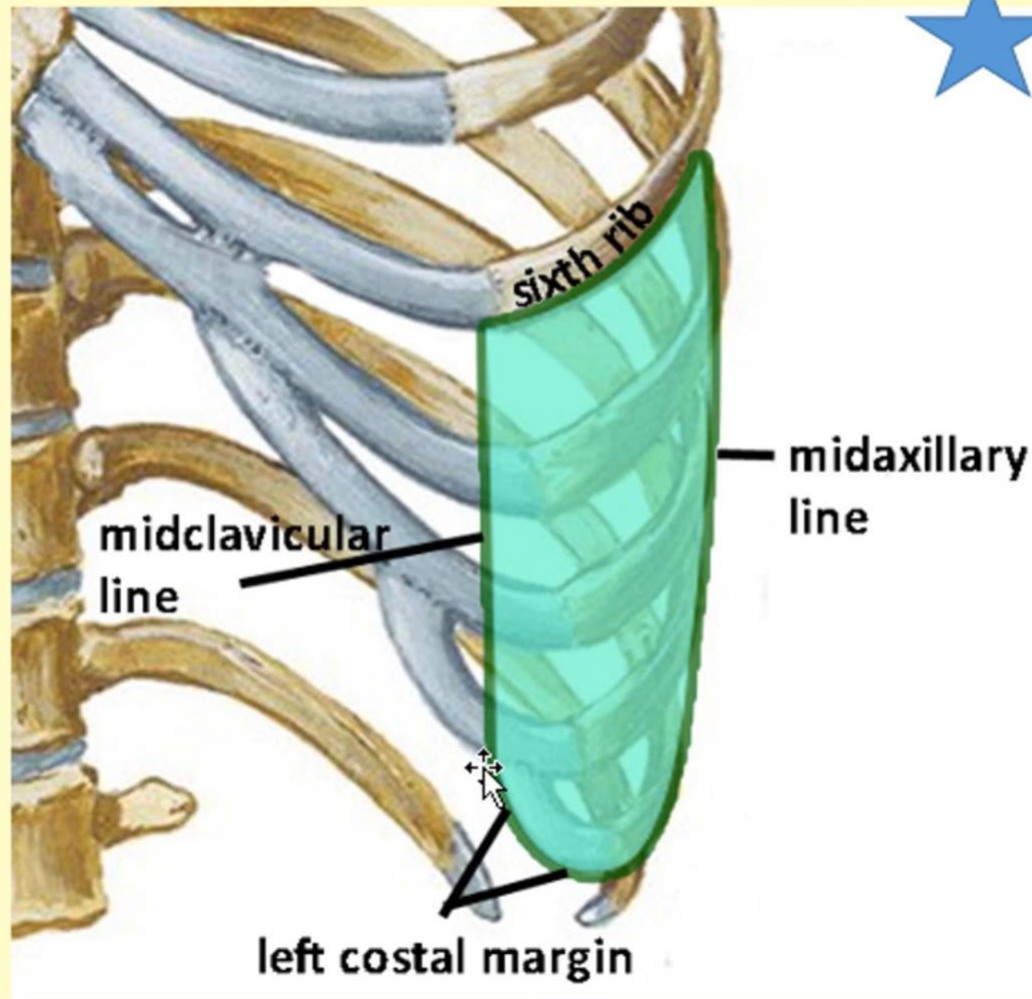


Palpation the spleen





Traube's Space



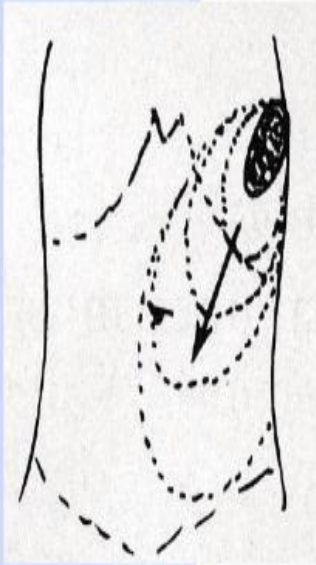
Enlarged Spleen or enlarged Lt kidney

	<u><i>Left kidney</i></u>	<u><i>Spleen</i></u>
Shape	Reniform [keep it's shape]	Oblong
Site	Lumbar region	Lt hypochondrium
Line of enlargement	<u>Downwards</u> / oblique	Downward, forward, medially
Midline crossing	Never	Can cross
Relation to costal cartilage	Can insinuate	Can not insinuate
Edge	Round	Sharp anterior edge Rounded lower pole
Notch	Absent	Present
Percussion	Band of <u>resonance</u> in front of it	<u>dull</u>
ballotment way to assis the floating فحص الكبد Femur الـ فحص الكبد	yes [double hand]	no
Sickening sensation	present	absent

* fusion → fluid

●●● Spleen palpation

- When the spleen enlarges, it moves anteriorly and obliquely downwards into the abdomen.



●●● Spleen palpation

- False (+) spleens = feces, colonic/renal masses, left lobes of the liver, and lower costal margins.
- False (-) spleens = obesity, ascites, and inability to relax the abdominal muscles.

AORTA [retro peritoneal]

↳ 2.8cm diameter.
↳ we felt it above the umbilicus..

L3/L4

A Aorta ends just below and lateral to umbilicus so always palpate above umbilicus (Epigastric Region).

* abdominal pulsating
↳ expansile pulsation..
↳ Transmitted pulsation..

Prominent Expansile Pulsation in aneurysm .

كافة راح تتحرك مع اليد :-
↳ hand up and abduct if there is aneurysm

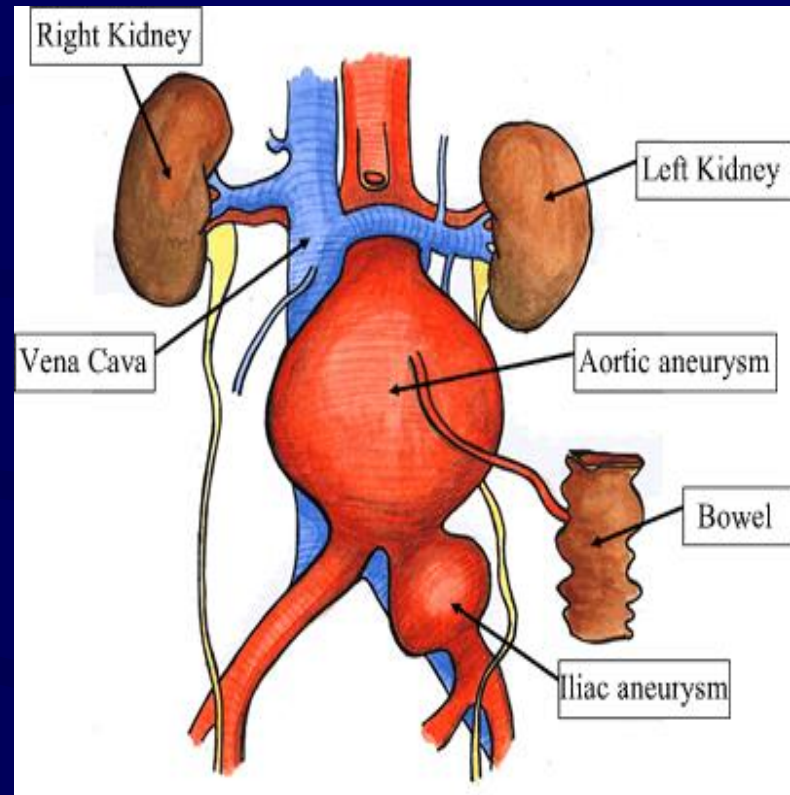
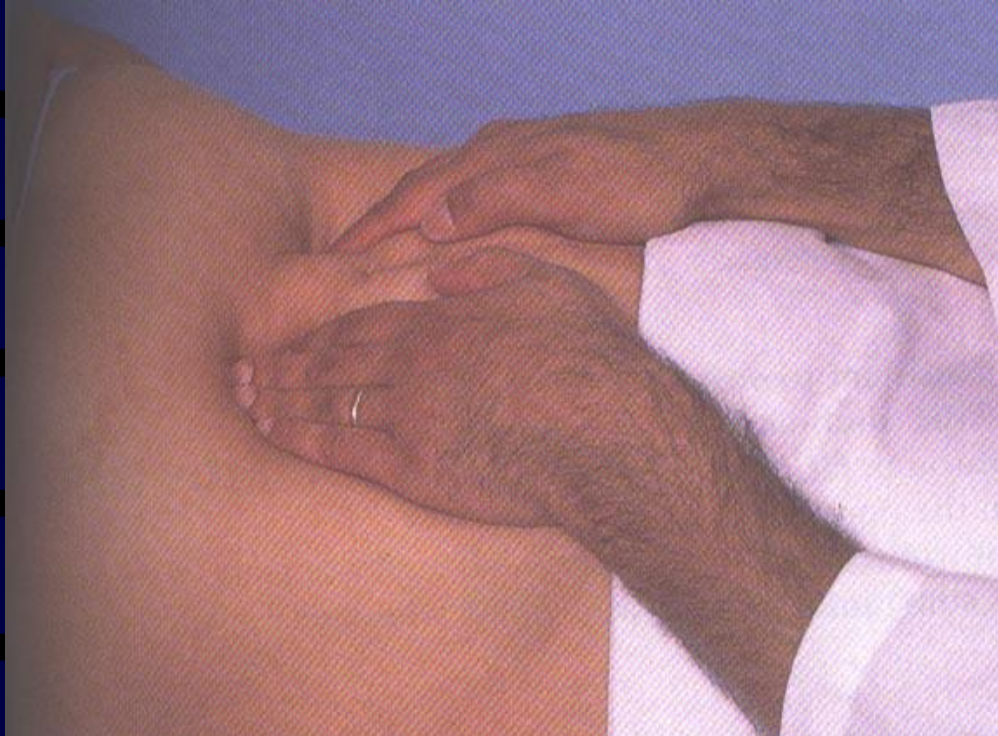
Normal pulse in thin adult is anterior (Transmitted Pulsation).

له دمن mass دميننا ال Aortic pulsation على تتحرك الية upward

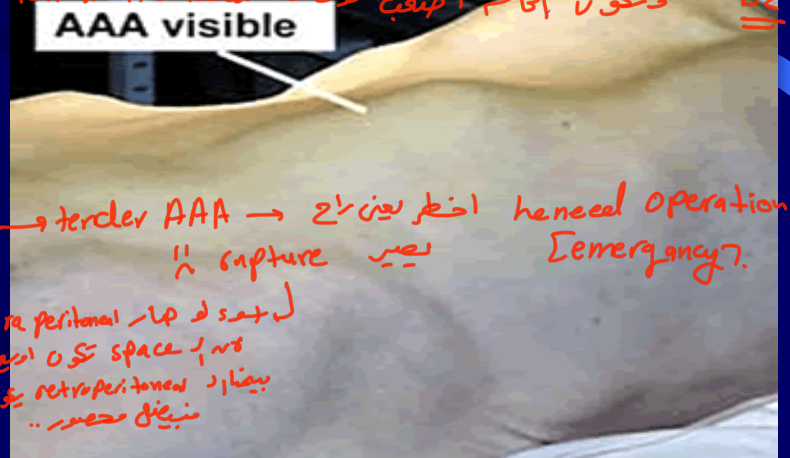
Expansile aortic pulsations

لم خط المساحة بين الأضلاع أقل من 2.5 cm
صوت من الأorta مع نبض





95% AAA → below renal Artery at level
renal A umbilical مكان اربع لكان L2



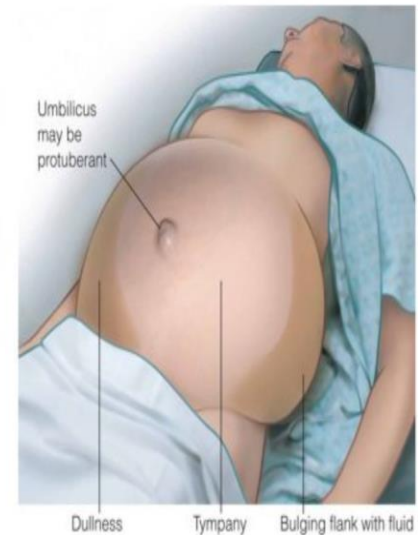
Ascites assessment

- **Bulging flanks, Distended abdomen.**
- **Shifting dullness > 1.5 L**
- **Transmitted thrill > 3 L**
- **Dipping: palpate solid organs, and tumors.**
- **Fluid less than 500 cc cannot be felt clinically.**

Physical Diagnosis: Ascites

Maneuver	Sensitivity	Specificity
Shifting Dullness	83-88%	56%
Bulging Flanks	72-78%	40-70%
Fluid Wave	53%	82-90%

Joseph D. Sapira. The Art & Science of Bedside Diagnosis.



Gross Ascites

lead to umbilical hernia.

[edema]: -
[metastatic color] → resent
[jaundice color] → old
wrenkile in the skin → swelling, itchy
عج

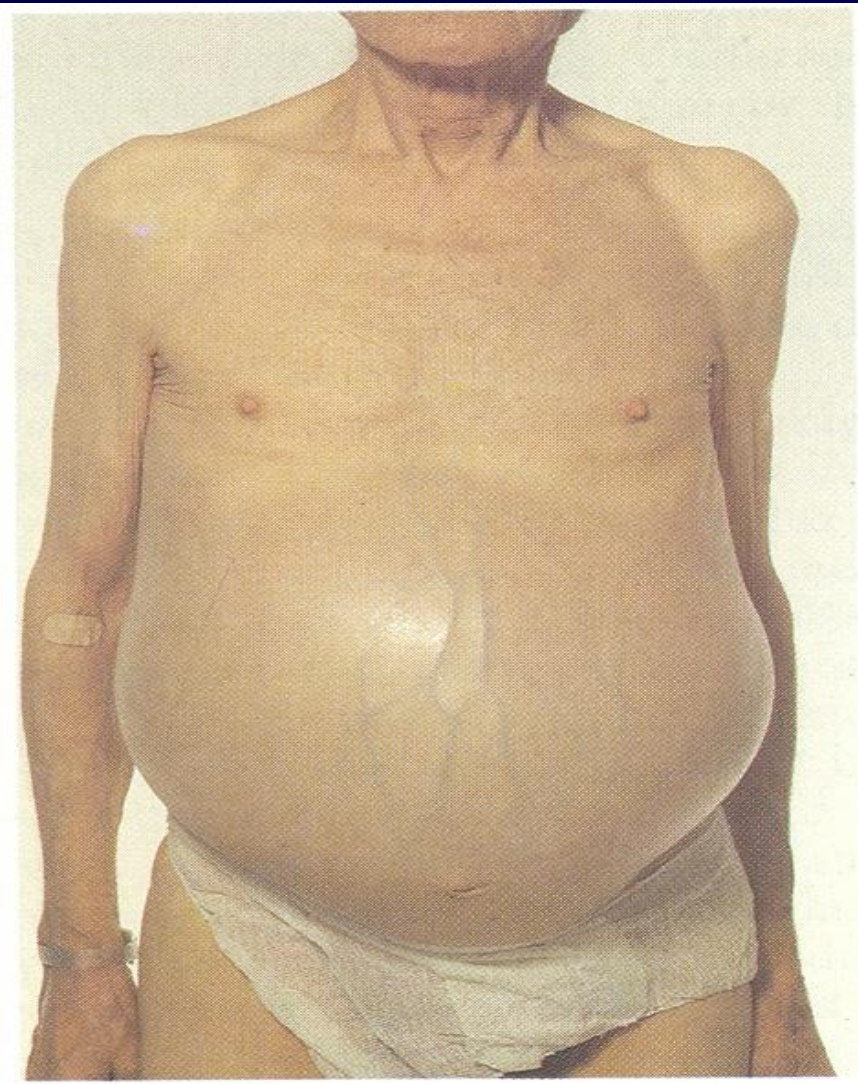


FIG 12-29

Testing for shifting dullness. Dullness shifts to the dependent side.

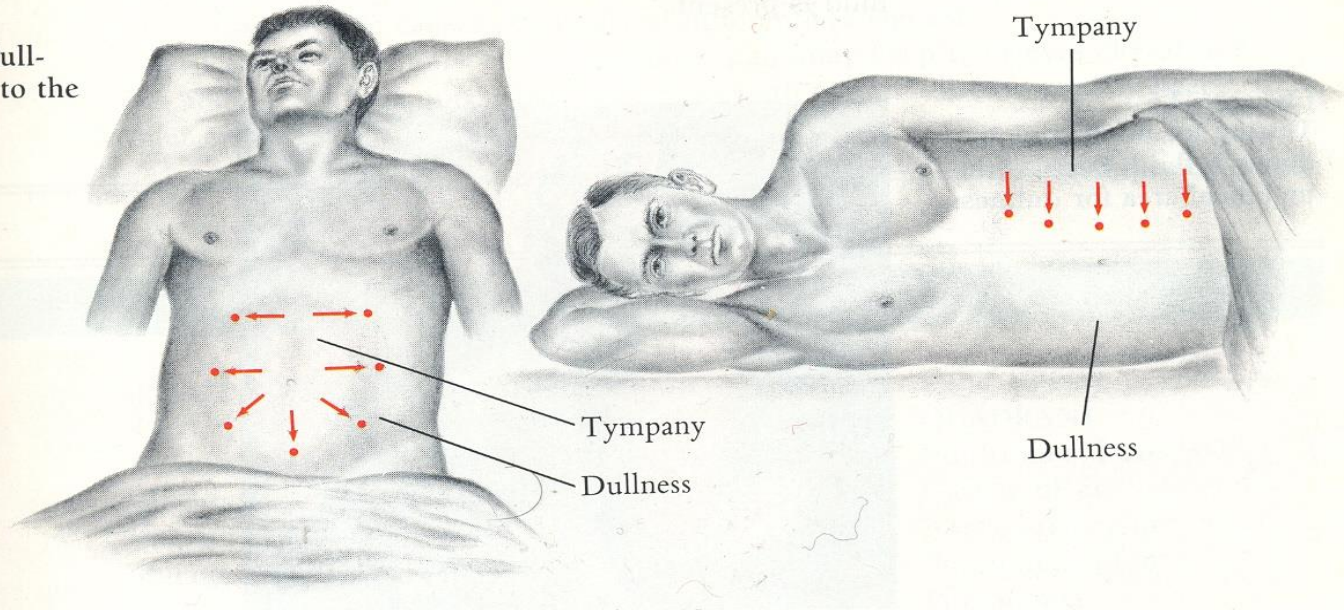
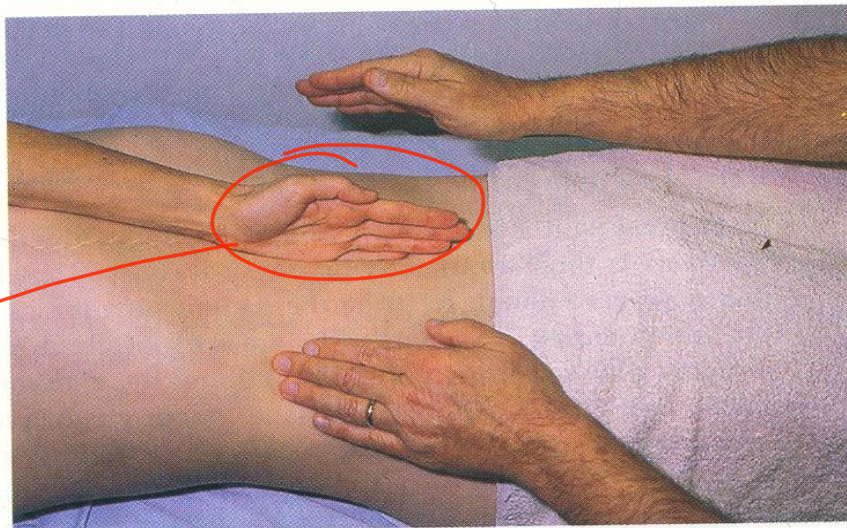


FIG 12-30

Testing for fluid wave. Strike one side of the abdomen sharply with the fingertips. Feel for the impulse of a fluid wave with the other hand.



الايداء، والاسفله
 Fluid في
 fat or in the muscle...

Abdominal signs

<u>Cullen</u>	Ecchymosis around umbilicus	Hemoperitoneum, pancreatitis, ectopic pregnancy
<u>Grey Turner</u>	Ecchymosis of flank	Hemoperitoneum, pancreatitis,
<u>Kehr</u>	Pain It shoulder	Spleen rupture
<u>Murphy</u>	Abrupt cessation of inspiration	Cholecystitis
Dance	No bowel sounds RIF	Intussusception
Blumberg	Rebound tenderness	appendicitis
Rovsing	RIF pain on Lt IF pressure	Appendicitis
Markle	Raise on toes then heel hit ground	Appendicitis

Bael pancreatitis [hemorrhagic] 40% mortality need ICU.

more than Rt side.

↳ shoulder pain due to irritation in lower surface diaphragm may occur in pregnancy

نقص في الشهية
الحساسية المفرطة

- Biliary colic → < 4 hour & need analgesic only
- acute cholecystitis → > 4 hour & need admission + antibiotic + analgesic

A

Cullen's sign



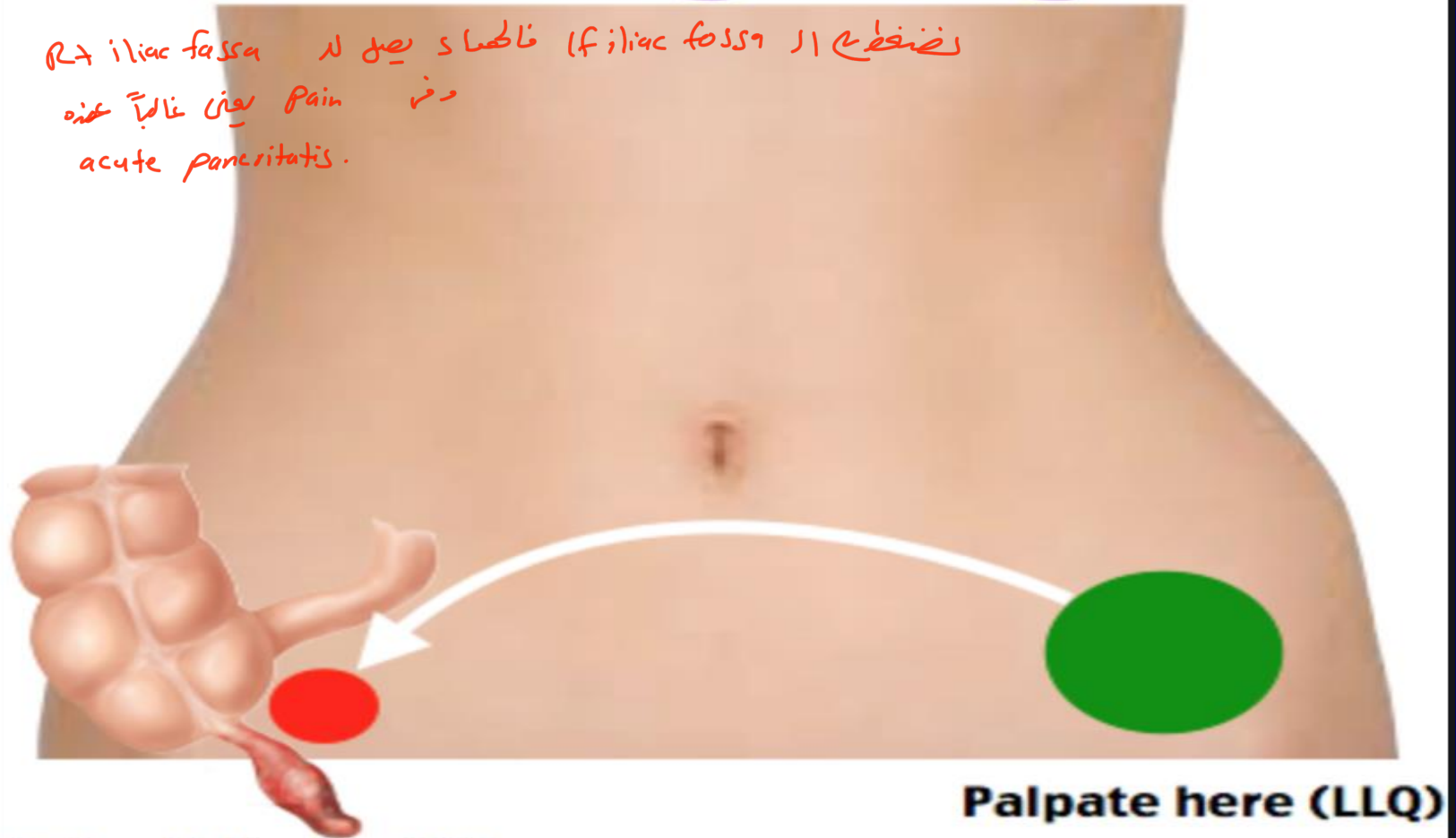
B

Grey Turner's sign



Rovsing's Sign

ضغط على ال (iliac fossa) فالكبد يصل لـ iliac fossa
Pain يعني غالباً حمى
acute pancreatitis.



Pain elicited in RLQ

Suggestive of acute appendicitis

Rebound Tenderness (Blumberg)

→ +ve *ما فيها بشييد ايدنا يتعرج*
Appendicitis
 → -ve *ما يتعرج ما شيل ايدنا*

appendix لعضة

it differentiates the appendicitis

Right hand over abdomen.

Deep palpation.

**inflamed appendix → 6mm in diameter..*

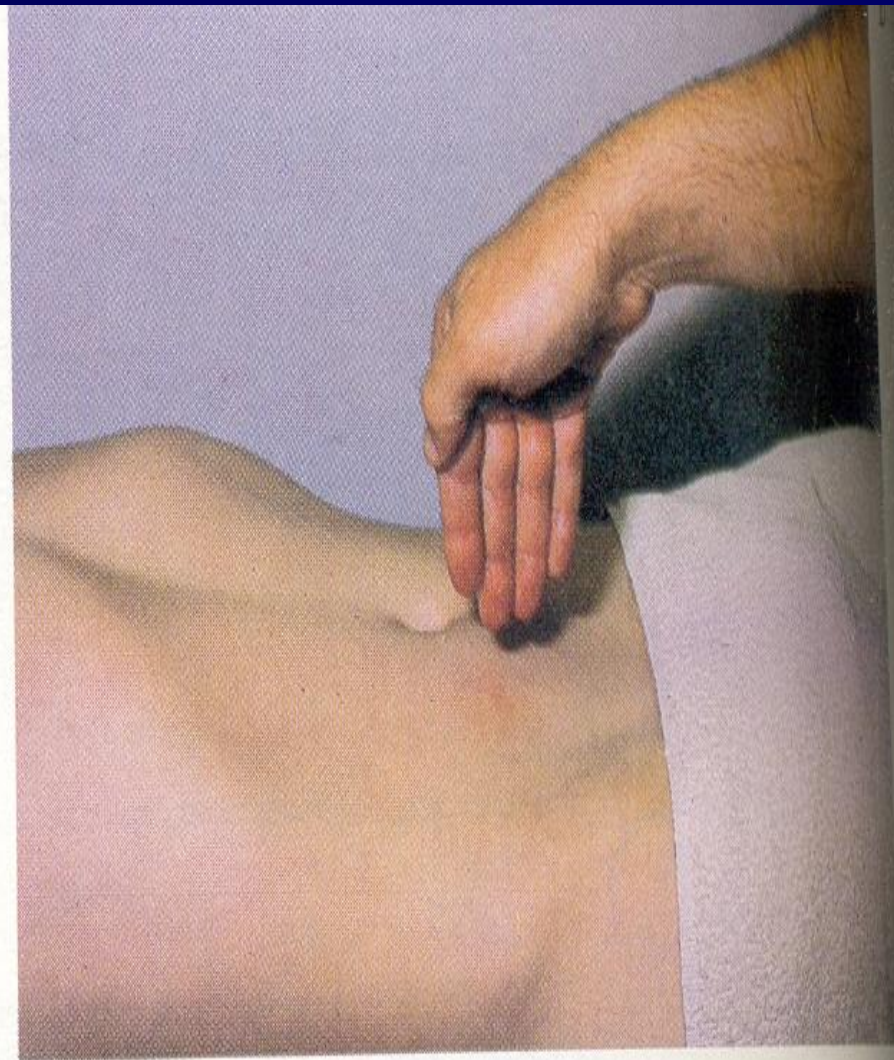
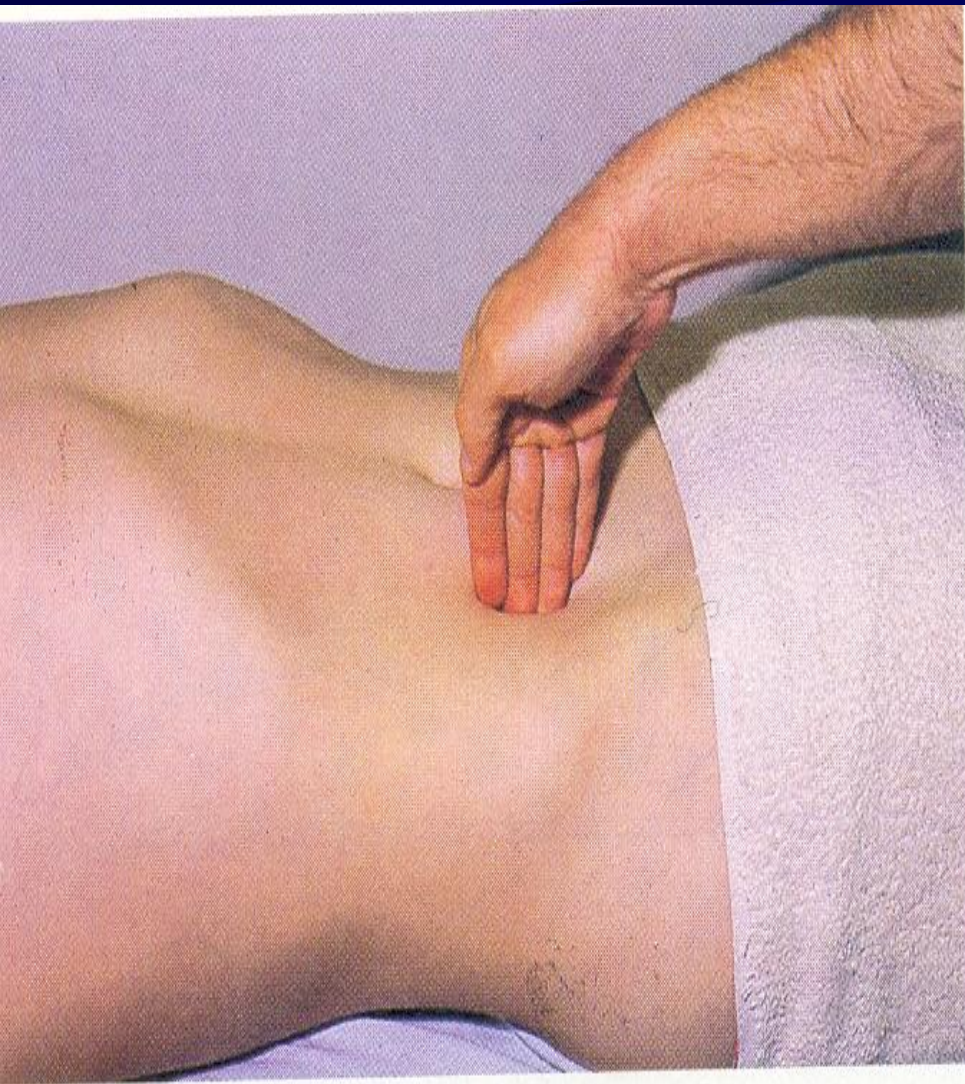
Sudden remove of hand.

→ Hot appendix [urgent]..

** the Best investigation for appendicitis → pelvic CT*



in Male
 1st commonest cause of Rt iliac fossa pain is _____
 2nd commonest cause → appendicitis
 → mid cyclic pain in Rt iliac fossa → most common cause in female.



Rebound tenderness

Iliopsoas muscle test

- In acute appendicitis.
- Lower abdominal pain ++ ve test .
- Ask patient to flex his hip ,while pushing down over leg.

Obturator muscle test

- In pelvic abscess ,rupture appendix.
- Flex right hip and knee, lateral and medial rotation cause hypogastric pain .

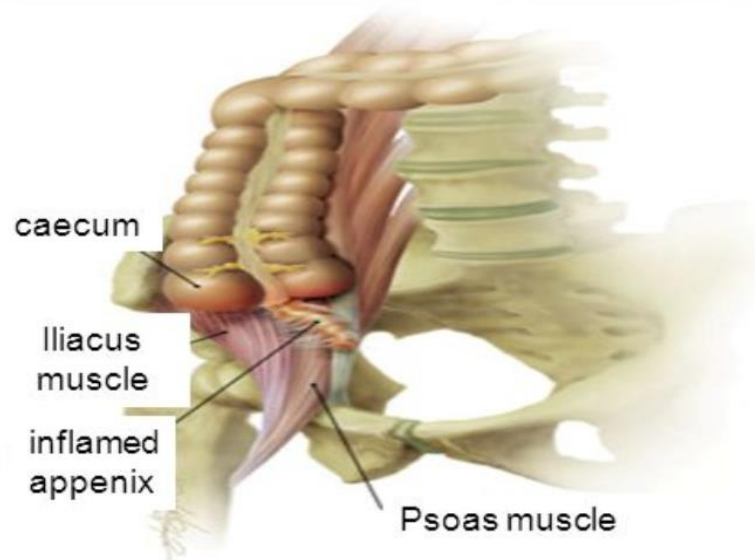
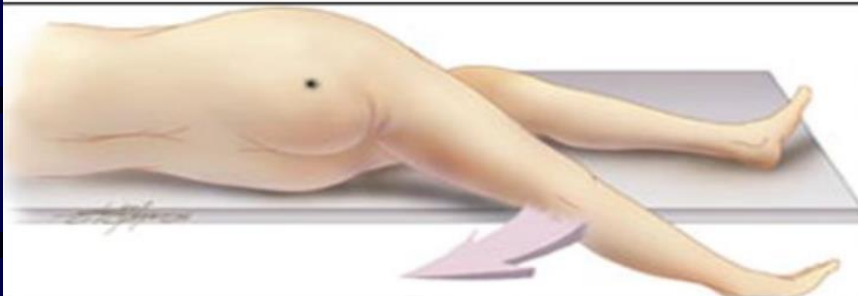
FIG 12-33

Iliopsoas muscle test. The patient raises the leg from the hip while the examiner pushes downward against it.



CLINICAL FEATURES

PSOA'S SIGN



Psoas sign is right lower-quadrant pain that is produced with the patient extending the hip due to inflammation of the peritoneum overlying the psoas muscles and inflammation of the psoas muscles themselves.

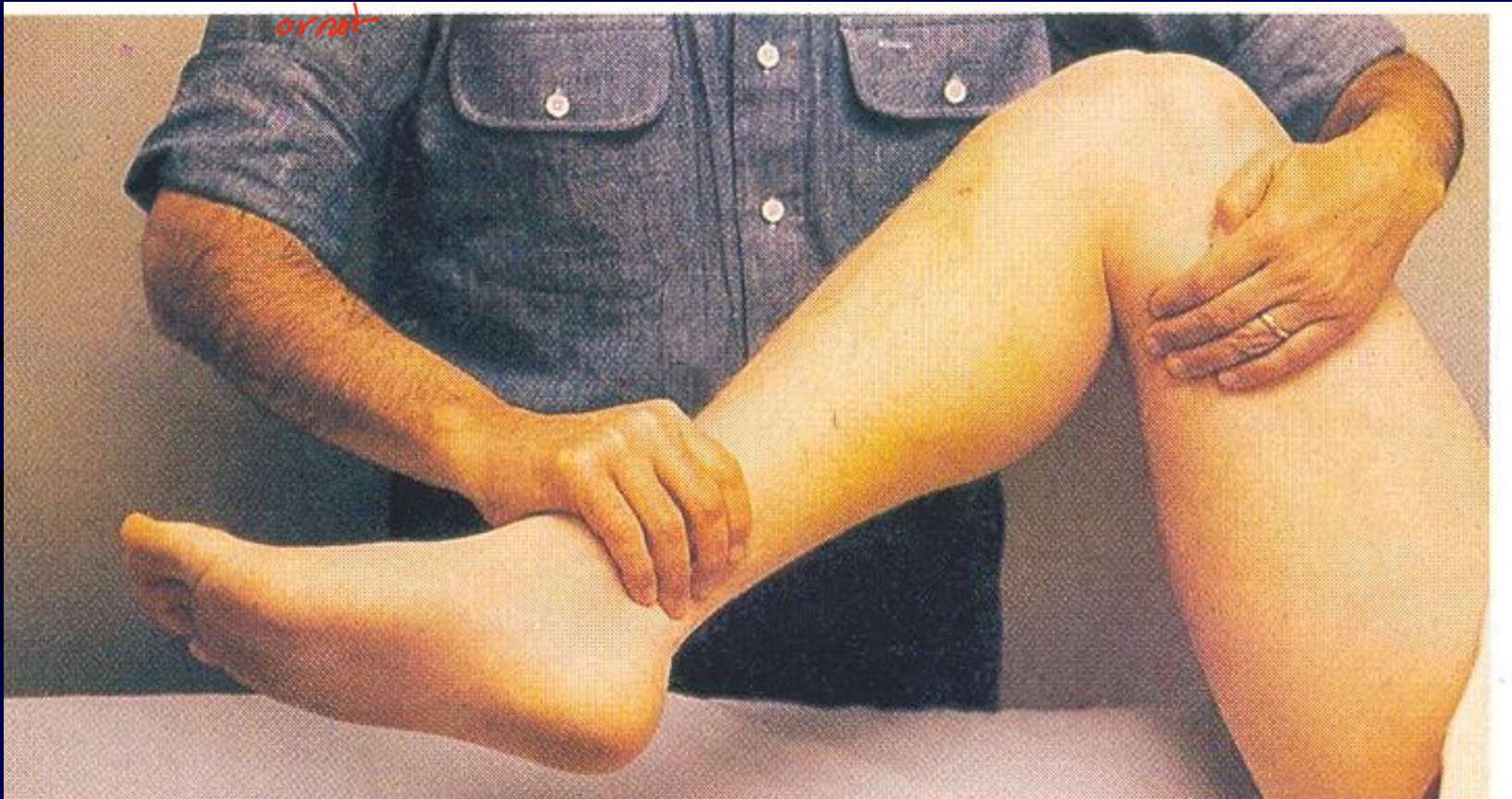
Straightening out the leg causes the pain because it stretches the muscles, and flexing the hip into the "fetal position" relieves the pain.

Obturator sign

internous ← externous

→ internous

خفگی internal rotation of hip / foot / برا رشتون هل خا appendix tenderness or not

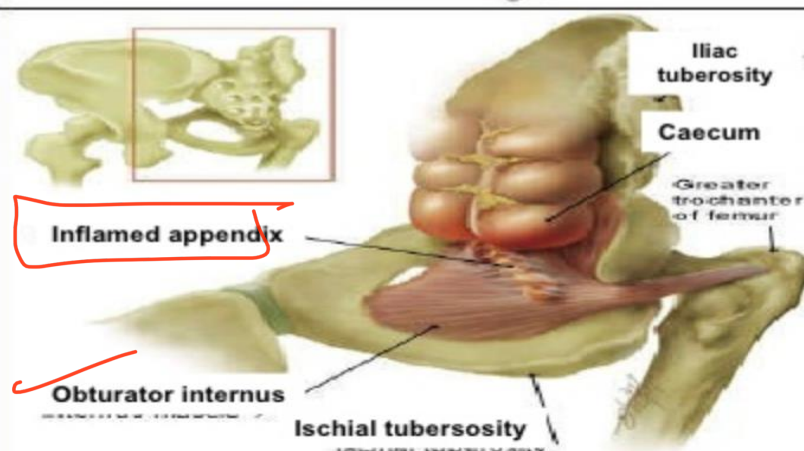


CLINICAL FEATURES

OBTURATOR'S SIGN



The obturator sign. Pain on passive internal rotation of the flexed thigh. Examiner moves lower leg laterally while applying resistance to the lateral side of the knee (asterisk) resulting in internal rotation of the femur..

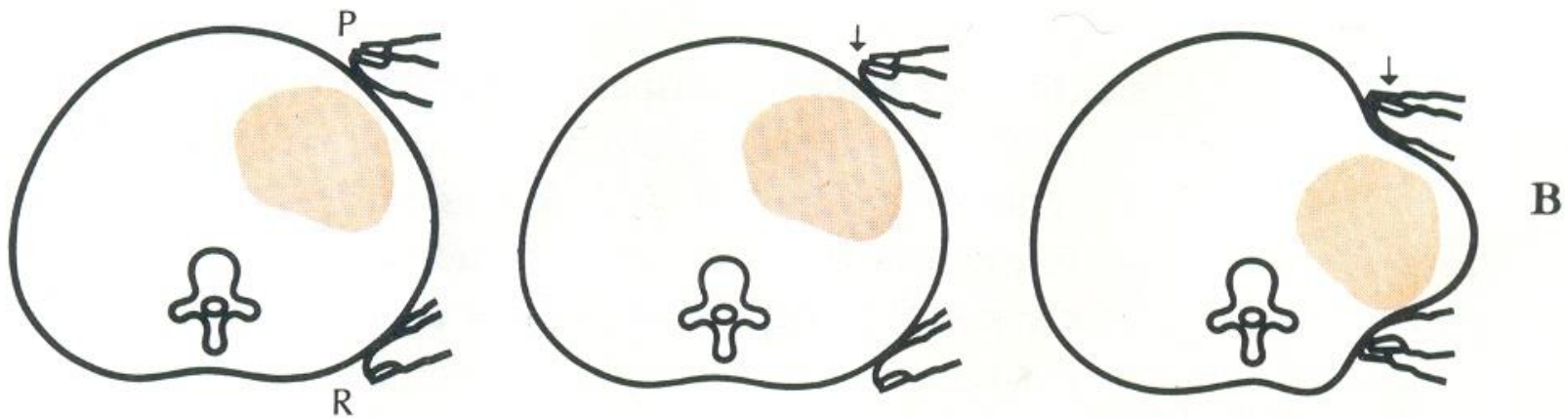
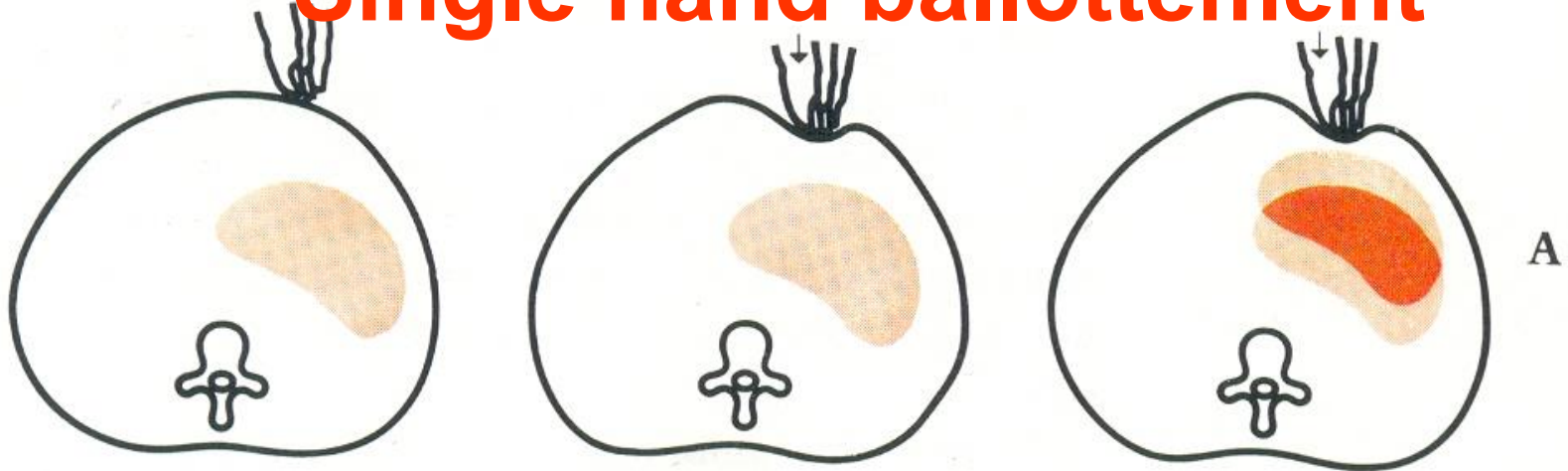


Ballottement

- ❖ Palpation way to assess *Floating Mass*.
- ❖ Bimanual ballottement , one hand in renal angle, the other push down.
- ❖ Single hand ballottement.

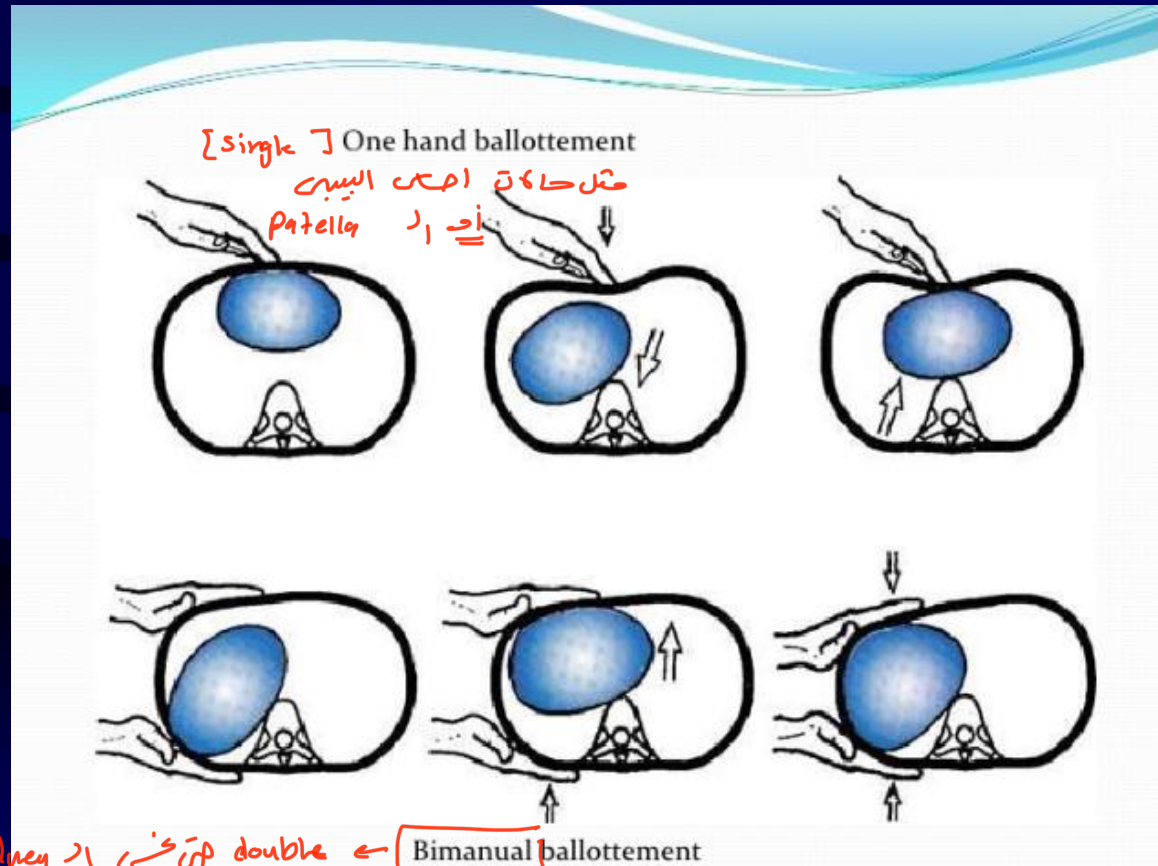


Single hand ballottement



Double hand ballottement

Bimanual ballottement



Anterior

posterior

Hints in palpation for abdominal pain

❖ **Touch me not.** ما قابله إيلانسه بضعة ← ال pain
↳ peritonitis

❖ **Appetite.** good = good health.
appendix → bad appetite / flush face / tachy cardia.

❖ **Pointing test (Apley).** The multifocal - multi centric ⇒ عصبية
pain
warning sign. له ما يحدد نقطة المربع فتكون

→ The multifocal Breath:-
→ The multicentric :-

❖ **Eyes status.**
more alarming المرضية خارج عيونه خالياً

Abdominal exam in a ticklish patient

- Ask patient to do self palpation.
- Place your hand over patient hand.
- Use stethoscope as palpating instrument.
- Apply stimulus to another part of body.

Don't forget

Don't forget

- Examine the back.
- Genitalia.
- Hernial orifices.
- Supraclavicular fosse.
- PR examination.
- Femoral pulse.

"It's not what is
poured into a
student that counts
but what is planted."

~ Linda Conway



Thank You





