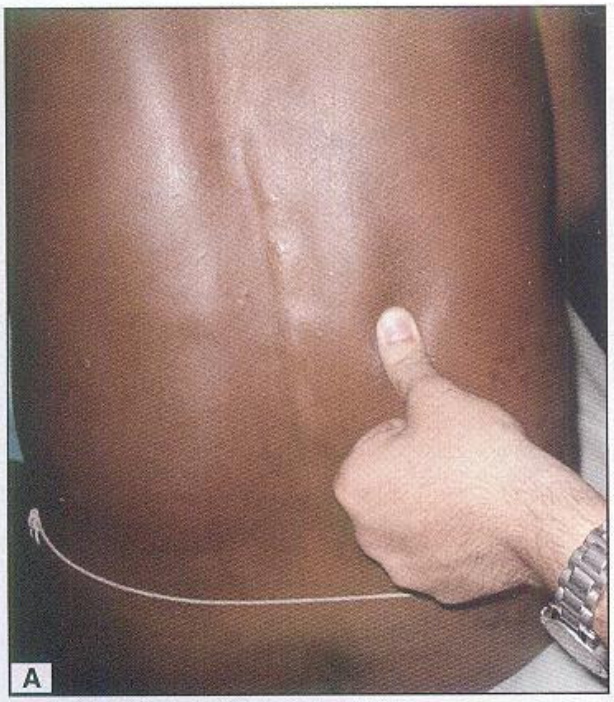
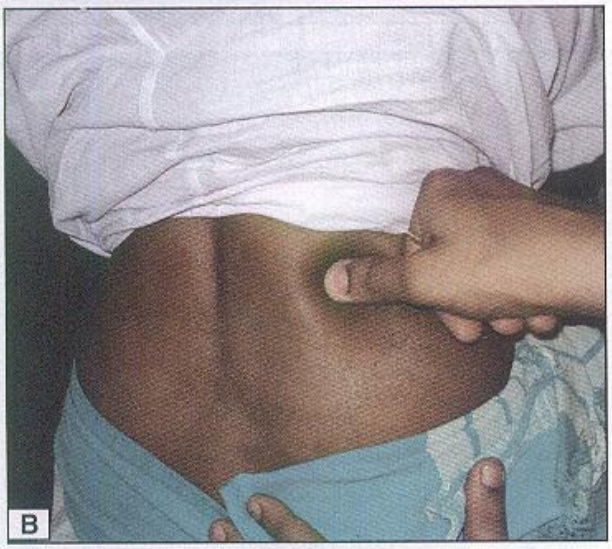




**Figs 21.23A to C:** Renal angle should be palpated and percussed in a kidney mass—in sitting position.

*Murphy's kidney punch* is eliciting the tenderness in renal angle in *sitting position* from behind. In sitting position from behind loin should be inspected for any fullness. *Renal angle* tenderness is elicited using thumb pressing at the angle (renal angle is between erector spinae muscle and 12th rib). Renal angle also should be percussed to look for any change in note. Normally it is resonant because of the ascending/descending colon which is displaced by enlarged kidney making it dull on percussion **(Figs 21.23A to 21.25)**.

> Note
> Renal mass looses all its features once it is fixed and advanced. Intraperitoneal mass once adherent posteriorly to retroperitoneum behaves clinically like a retroperitoneal mass.

**Fig. 21.24:** Palpation for kidney mass—for ballottability and bimanual palpation.

**Fig. 21.25:** Renal bruit should be auscultated.

***Small bowel mass***

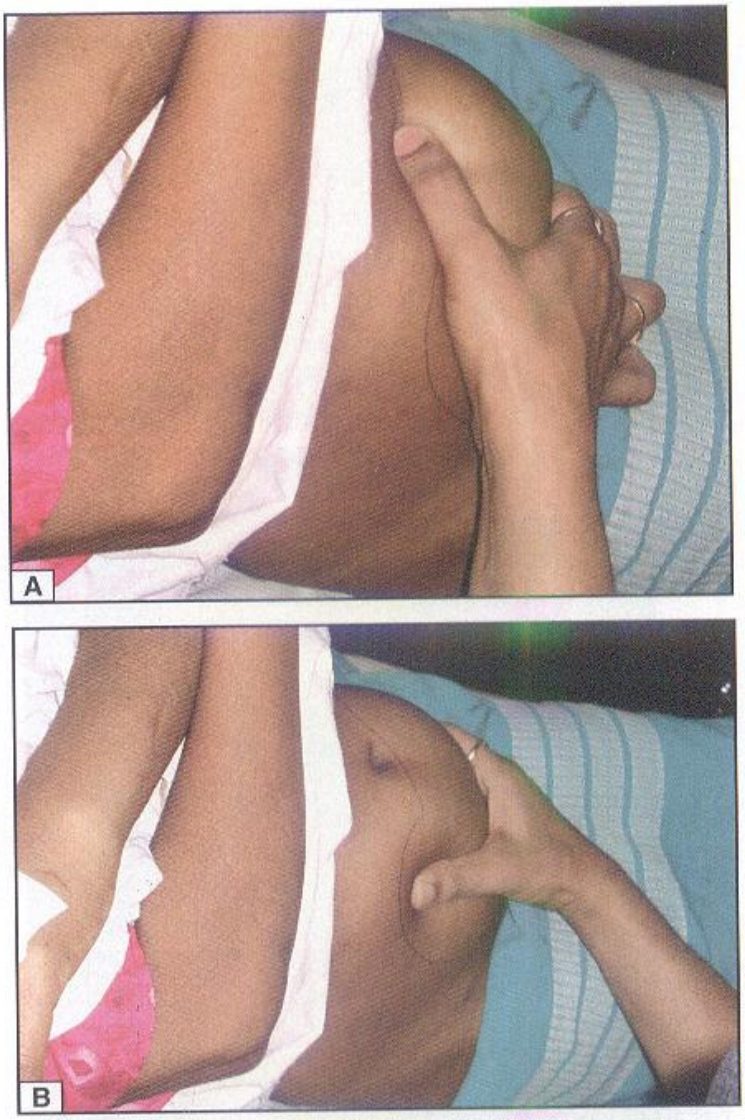
It is felt as mobile, localised mass with resonant or impaired resonant note. It does not move with respiration. Intussusception is sausage shaped mass with concavity towards umbilicus. It appears and disappears; contracts under the palpating finger **(Fig. 21.26)**.

**Fig. 21.26:** Often abdominal mass should also be examined in lateral position to get better feeling and findings.

All masses in the lower quadrants should be palpated *after emptying bladder* or passing a urinary catheter. Upper border is clearly felt but not lower border which merges into the pelvis. Mass also should be *bimanually palpable* by placing fingers in rectum or per vagina **(Figs 21.27 to 21.29)**.

External genitalia should be palpated for any swelling/loss of testicular sensation, secondary hydrocele.

**Fig. 21.27:** Palpating the lower border of the mass is very important in lower abdominal masses. Bladder should be emptied or catheterised before palpation.




**Figs 21.28A and B:** Intrinsic mobility of the mass should be checked in all abdominal masses.

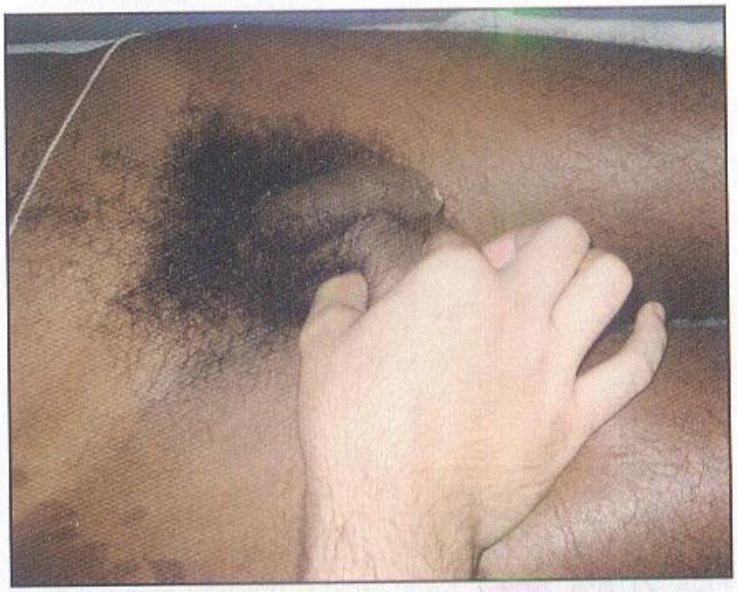


**Fig. 21.29:** External genitalia should be palpated for mass/hydrocele.

Often there may be more than one mass in the abdomen. So when one mass is felt always look for *other relevant masses*.

*Retroperitoneal masses* and pulsatile mass like aneurysms should be examined in knee-elbow/knee—chest position. Retroperitoneal mass will not fall forward whereas intra-abdominal mass will fall forward. *Aortic aneurysm* with expansile pulsation will retain its pulsation whereas mass with *transmitted pulsation* will show reduced/absent pulsation in knee elbow position **(Figs 21.30A to C)**.


**Figs 21.30A to C:** Knee elbow position—palpation of retroperitoneal mass. Mass can be held to check mobility, relations.

## Percussion

*Liver dullness* should be assessed by percussion. It is done by percussing from above downwards over right intercostal spaces in midclavicular line. Liver span also can be assessed by this **(Fig. 21.31)**.

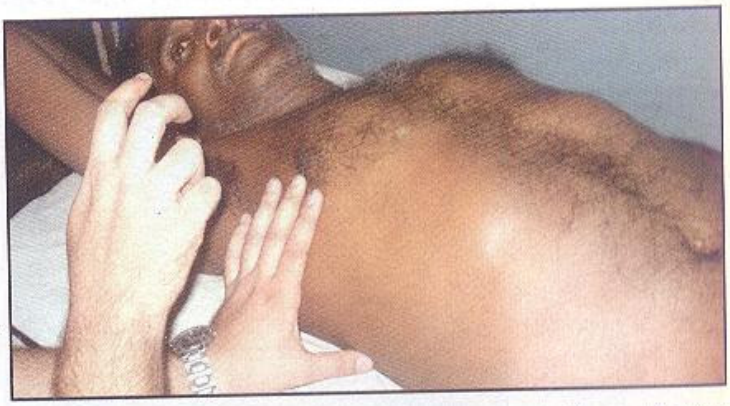


**Fig. 21.31:** Liver dullness should be assessed (upper border of liver) by percussing from above downwards in intercostal spaces in midclavicular line and space is marked.

*Percussion over the mass* is very important. Mass in front of the bowel is dull on percussion like parietal/abdominal wall mass, liver, spleen, gallbladder, etc. Mass from the stomach/small bowel/colon shows impaired resonance on percussion. Mass from retroperitoneum shows resonance on percussion.

*Hydatid thrill* is elicited using three fingers. Index, middle and ring fingers are placed over the liver mass with gaps between each fingers. Percussion is done over the middle finger to feel the fluid thrill over other two fingers **(Fig. 21.32)**.

**Fig. 21.32:** Percussion over the mass is essential to say whether mass is anterior to bowel (dull); from the bowel (impaired resonant) or behind the bowel (resonant)

*Percussion for free fluid* is important. With patient in supine position, percussion is done over the epigastrium initially to confirm resonant note. Then percussion is continued over to one side flank until one gets dullness. Patient is tilted towards opposite side to make area of percussion directed upwards so as to displace the fluid from that side. After 1-2 minutes (time to allow fluid to shift towards opposite side) without removing the fingers same area is percussed to get resonant note which confirms the presence of fluid. For massive ascites, fluid is confirmed by eliciting fluid thrill. Patient is asked to place his hand over the epigastrium with ulnar side of the hand pressed firmly in midline. Examiner should keep his one hand over one lumbar region of the patient and with fingers of other hand, opposite lumbar region is tapped to elicit fluid movement as *fluid thrill*. Small quantity of fluid can be detected in knee elbow position. In this position umbilical site is percussed to elicit dullness which signifies positive *puddle sign—signifying minimal ascites* **(Figs 21.33 to 21.35D)**.

*Percussion over renal angle* is done to look for resonance (normal) or dullness (abnormal). Normal renal angle is occupied by ascending (right) or descending (left) colon and is resonant. When kidney is enlarged, it pushes the colon in front and medially replacing colon and so becomes dull on percussion. Renal angle is examined in sitting position between 12th rib and erector spinae muscle (Renal angle should be examined for fullness/tenderness/ percussion note).

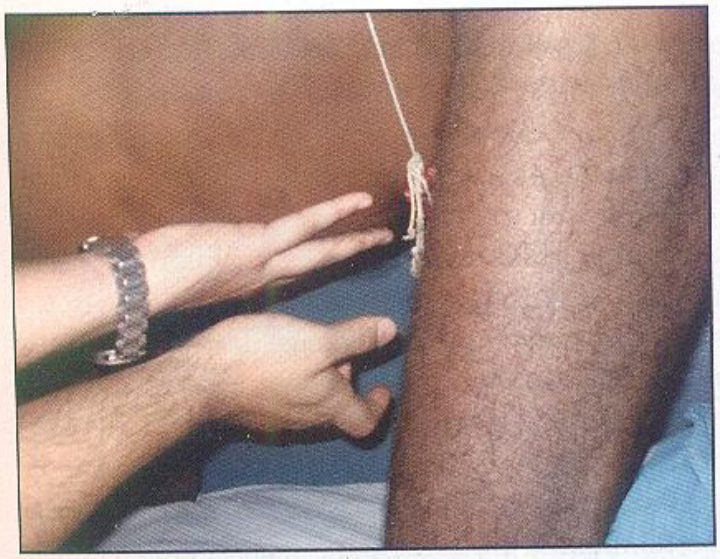
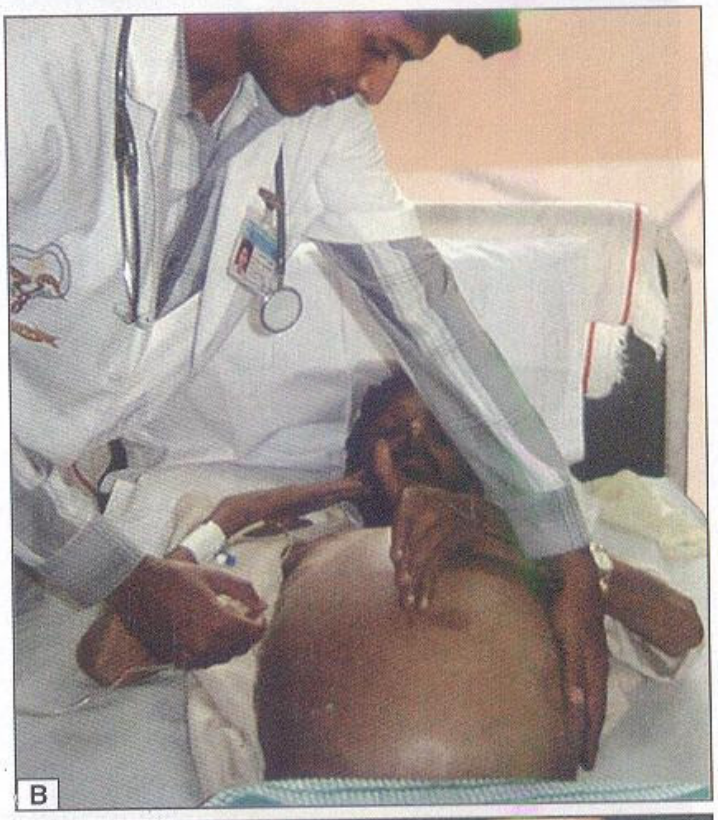
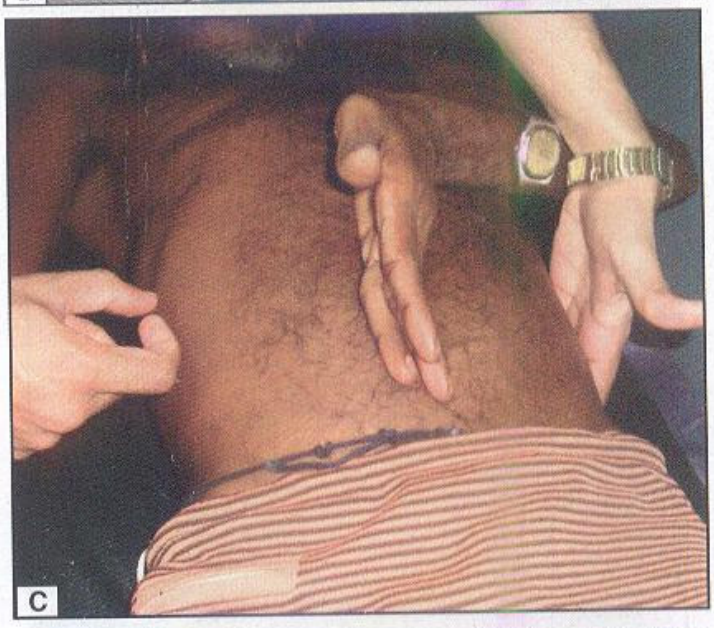


**Fig. 21.33:** Looking for minimal ascites in knee-elbow position—Puddle sign.


**Figs 21.34A to C:** Massive ascites. Eliciting fluid thrill in massive ascites.