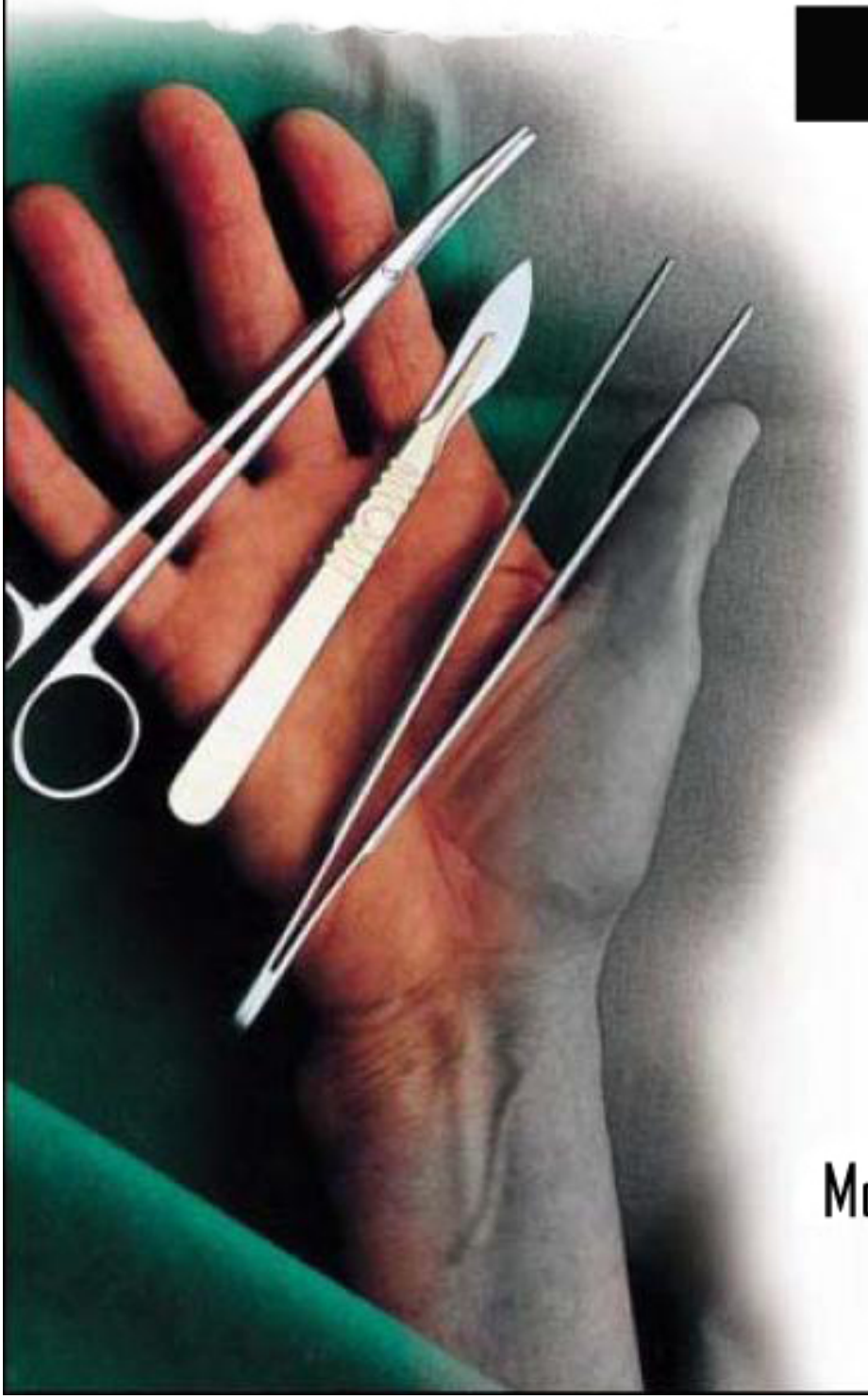
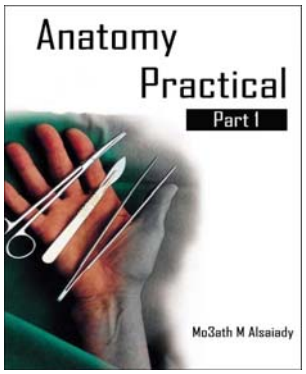
Anatomy Practical

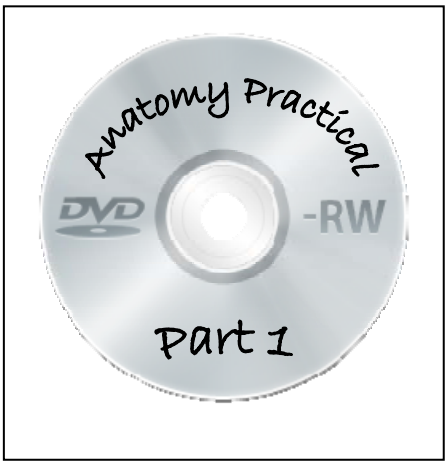
Part 1



Mo3ath M Alsaiady



Anatomy Practical handout **was made to collect & cover all the required material in anatomy practical sessions . I would like to express my special thanks to *Ahmed Al-Mazrou* & *Bilal Marwa* who helped me in preparing this handout . Finally, we wish we all get the 5 marks .. Good Luck !**



With 10 megapixels camera , these videos were recorded to make anatomy practical sessions easier to remember & understand .

Thanks to :

Ahmed Al-Mazrou **Mohammed Al- Otaibi**

AbdulAziz Al- Babtain **Waleed Al-Khaldi**

Bilal Marwa **Mohammad Al-Kheraiji**

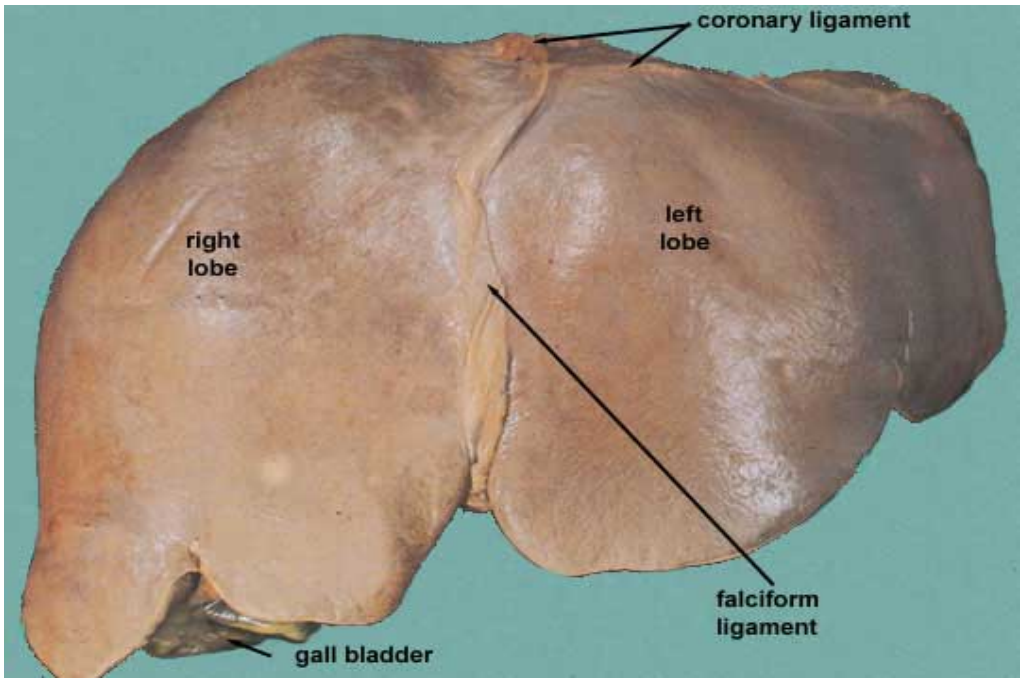
Mo3ath Alsaiady

Who spent their times & efforts in preparing this DVD .

Practical 1

Liver & Biliary Passages

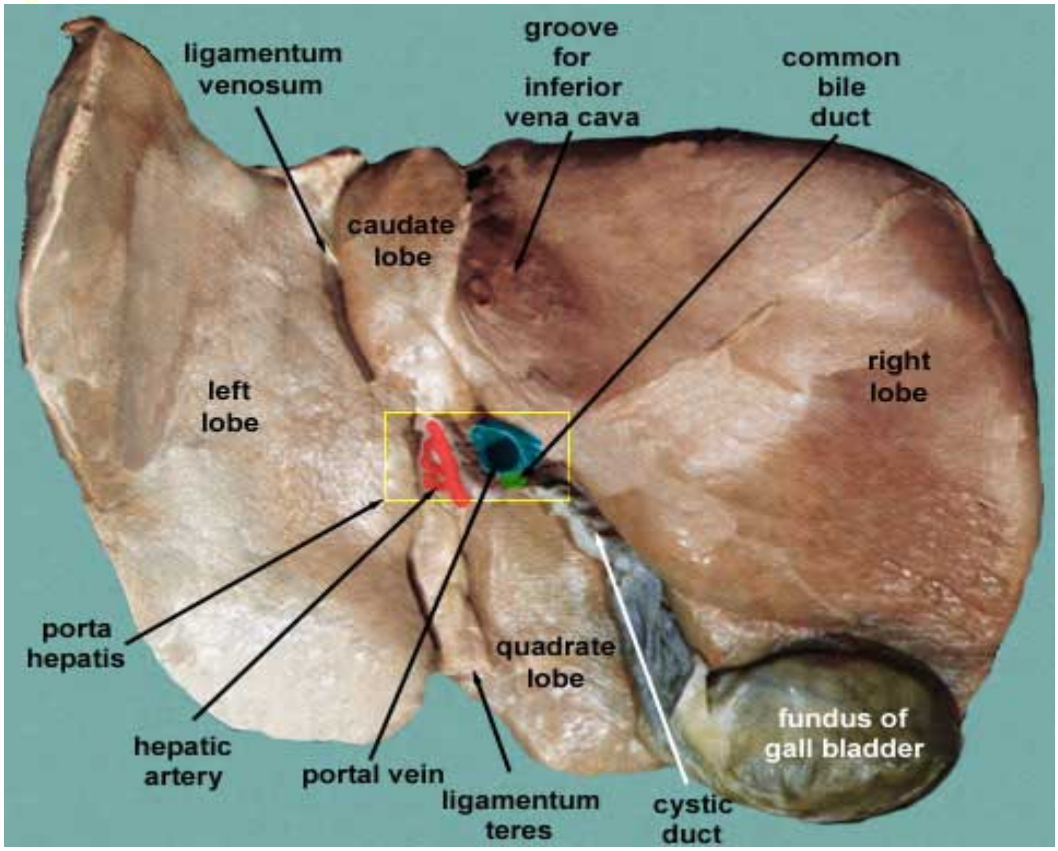
anterior view of the liver, You should identify the:



- right lobe .
- left lobe .
- falciform ligament .
- coronary ligament .
- gall bladder .

visceral surface of the liver, You should identify the:

ligament



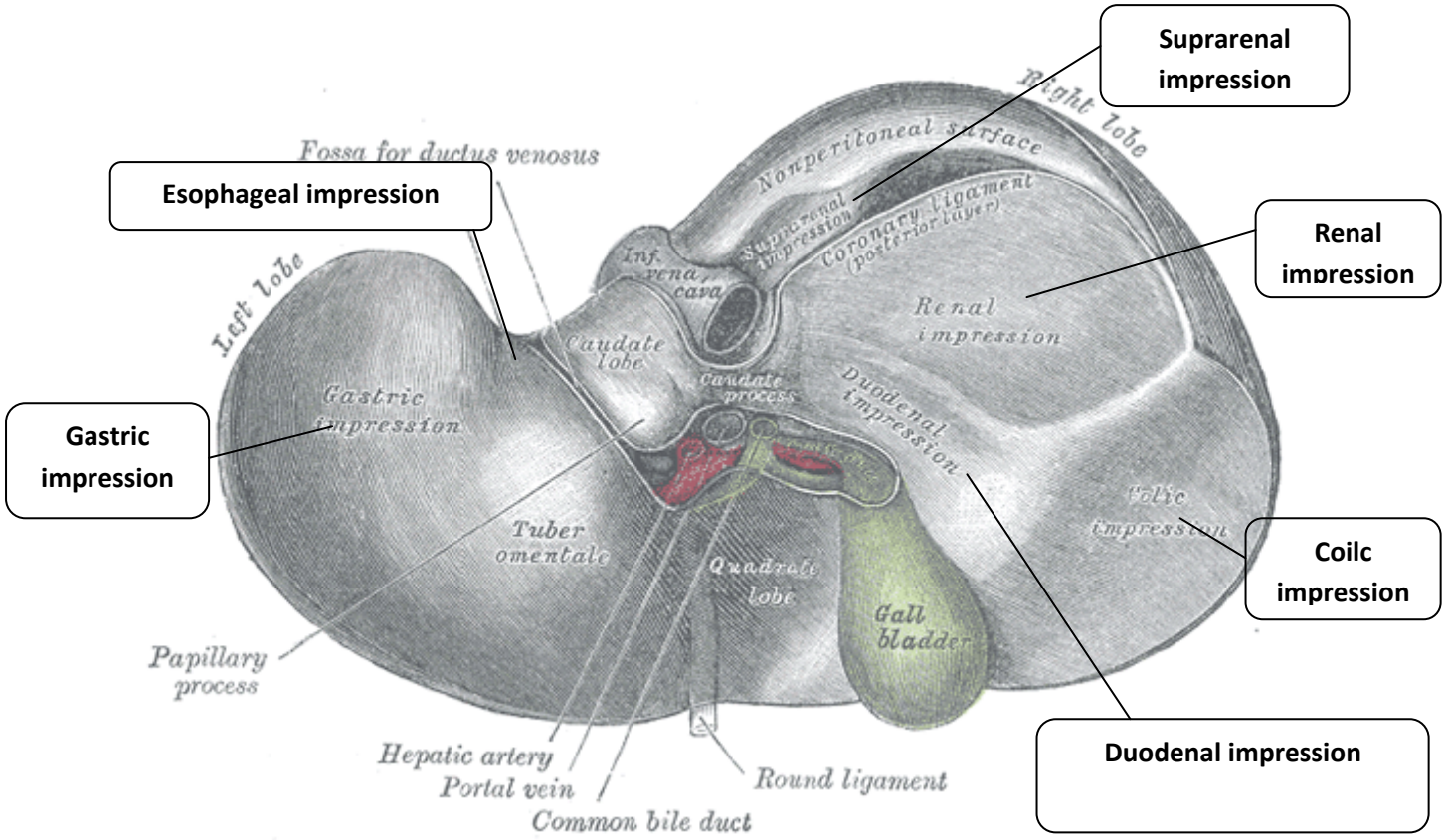
- right lobe .
- left lobe .
- quadrate lobe .
- caudate lobe .
- gall bladder .
- ligamentum teres .
- ligamentum venosum and its groove .
- groove for the inferior vena cava .
- porta hepatis .
- cystic duct .
- portal vein .
- hepatic arteries .
- common bile duct .

Remember

The arrangement of the vessels in the porta hepatis from **anterior** to **posterior** is :

Bile Duct >> Hepatic artery >> Portal Vein .

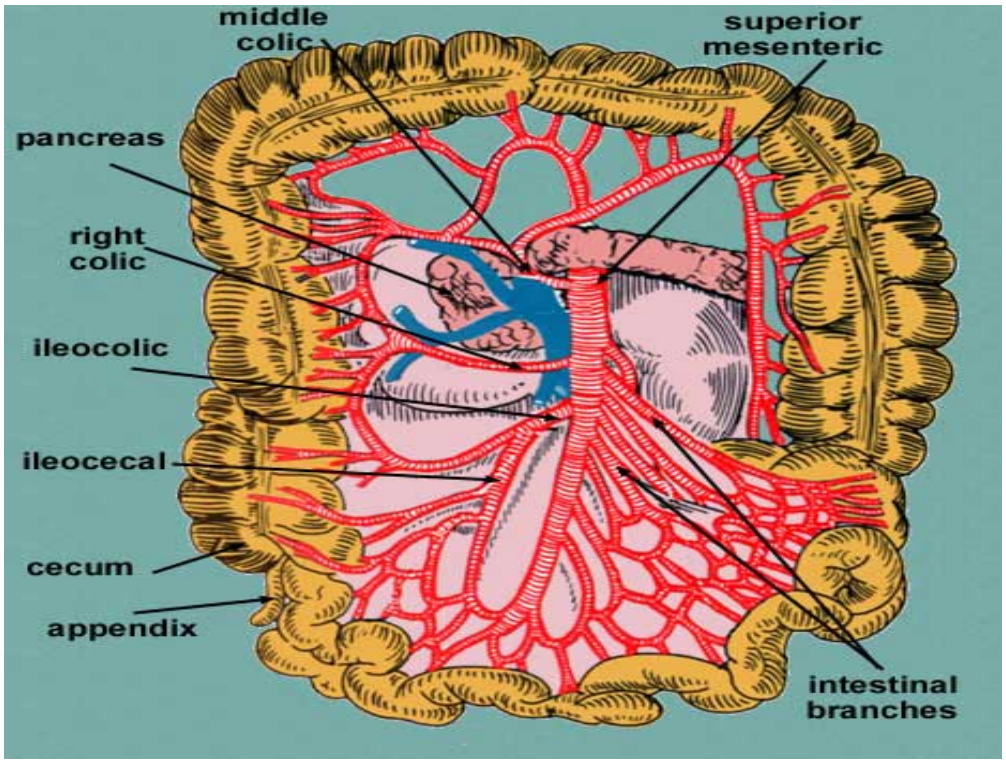
Relationship of the visceral aspect of the liver to other abdominal viscera:



Practical 2

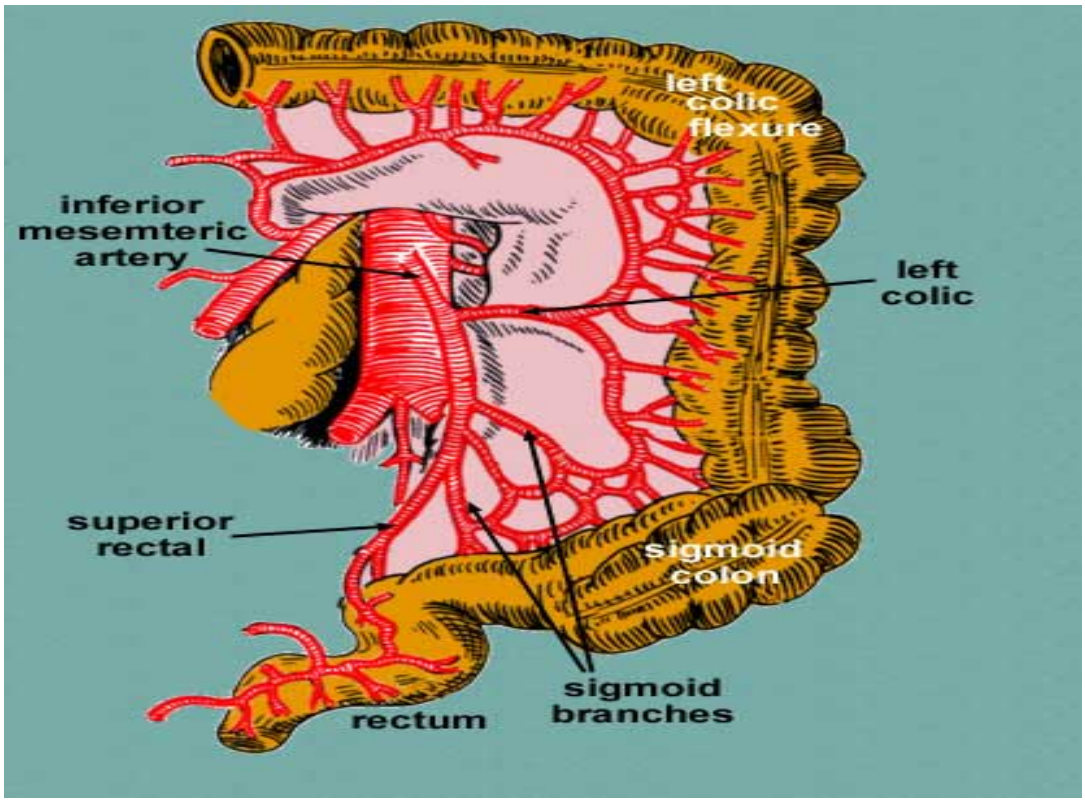
Blood Supply of Midgut & Hindgut + Portal Vein

You should identify the:



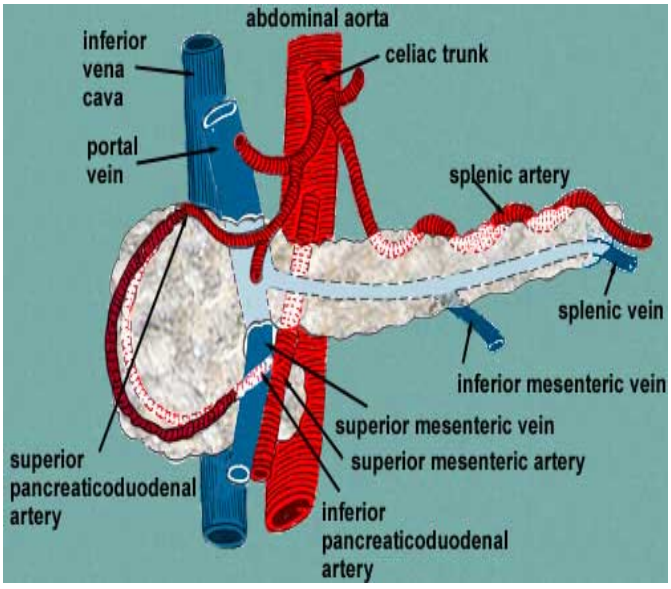
the superior mesenteric artery & its branches :

- inferior pancreaticoduodenal – **(NOT SEEN)** .
- middle colic - to the transverse colon .
- right colic - to ascending colon .
- ileocecal - to last part of ileum, cecum, and appendix .
- intestinal branches - to jejunum and ileum .
- marginal artery .



The inferior mesenteric artery & its branches :

- left colic .
- sigmoid branches .
- superior rectal .



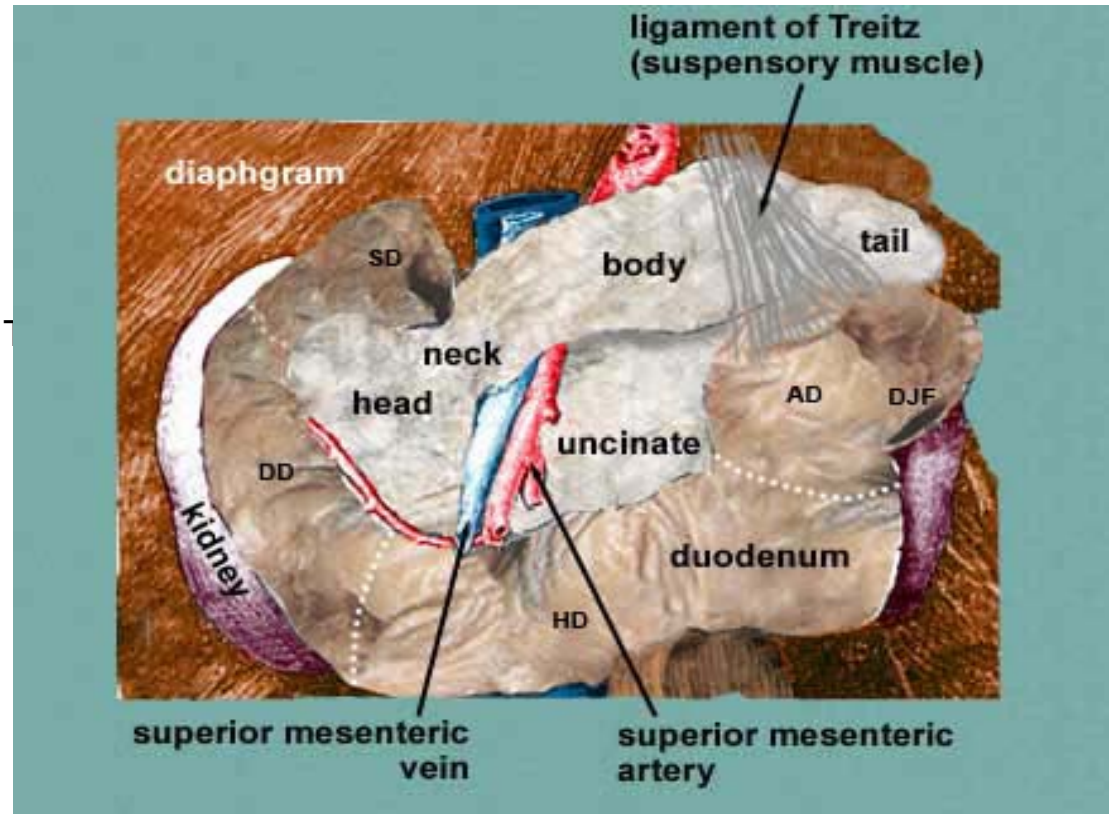
The portal vein & its tributaries :

- splenic vein .
- superior mesenteric vein .
- inferior mesenteric vein .

Practical 3

Pancreas & Duodenum

You should identify the:



The duodenum & its parts :

1. Part one(1st part), superior part (SD) .
2. Part two(2nd part), descending part (DD) .
3. Part three(3rd part), horizontal part (HD) .
4. part four(4th part), ascending part (AD)(**NOT SEEN**).

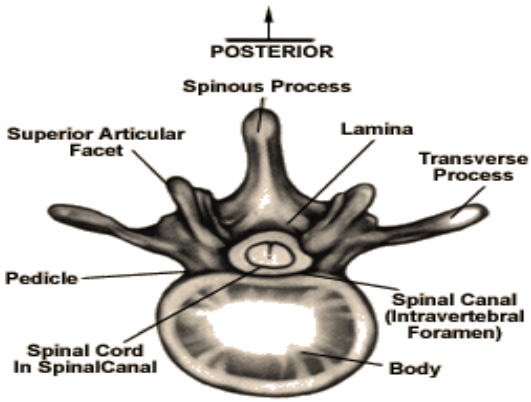
The pancreas & its parts :

1. Head .
2. uncinate process .
3. Neck .
4. Body .
5. Tail .

Practical 4

Lumbar Vertebrae, Diaphragm & Posterior Abdominal Wall Muscles

There are 5 lumber vertebrae , L1+L2+L3+L4 are **typical :**



L5 is **atypical** :

You should identify the:

- spine .
- lamina .
- pedicle .
- transverse process .
- body .
- superior articular process .
- inferior articular process .

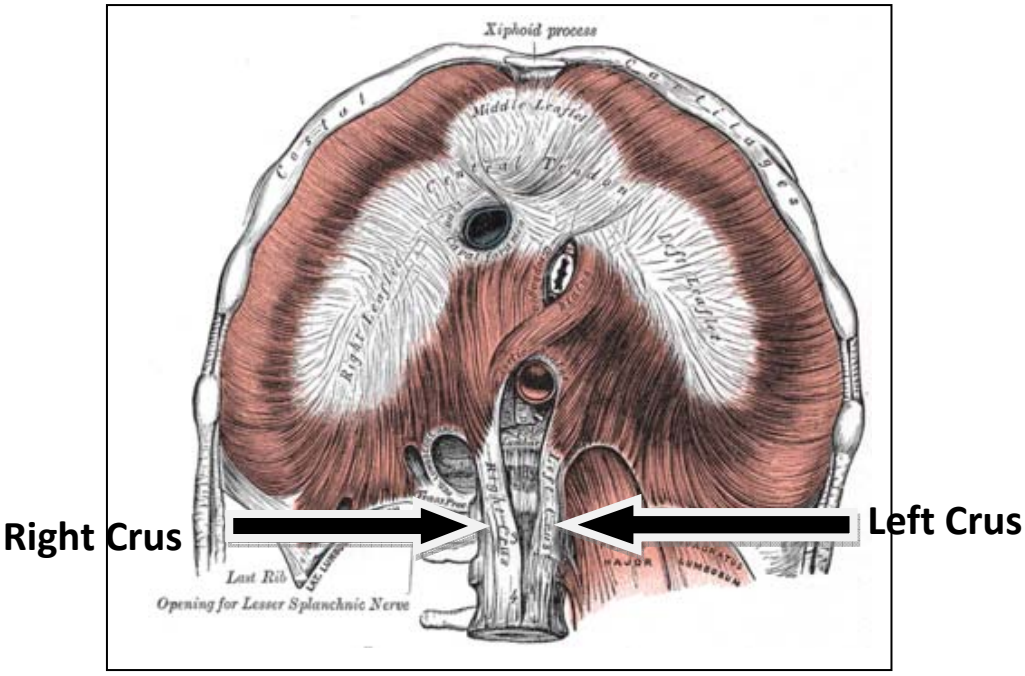
Remember

You should **distinguish** Between:

The typical & atypical Vertebrae .

You will be asked to write the number of the atypical one (L5) but **NOT** to write the numbers of the typical ones .

Diaphragm



Right Crus

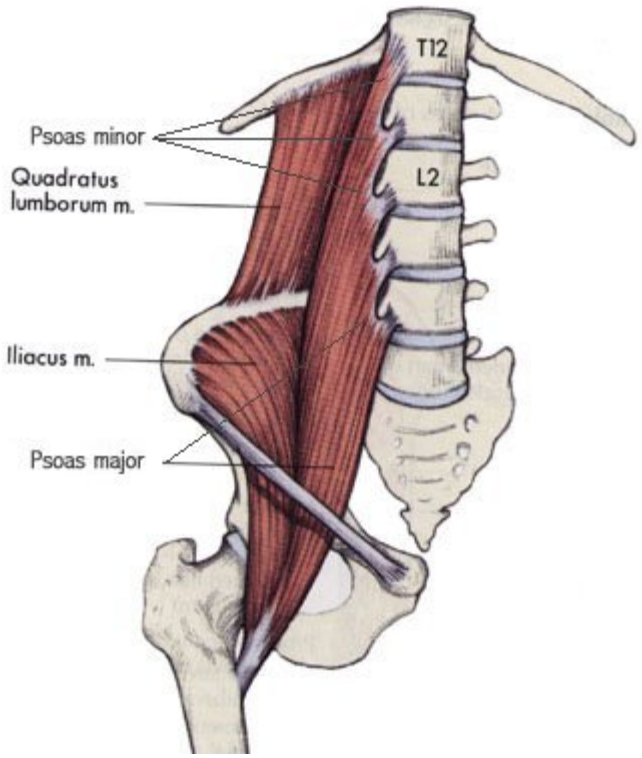
Left Crus

You should identify only the:

- Right Crus .

- Left Crus .

Posterior Abdominal Wall Muscles



You should identify the :

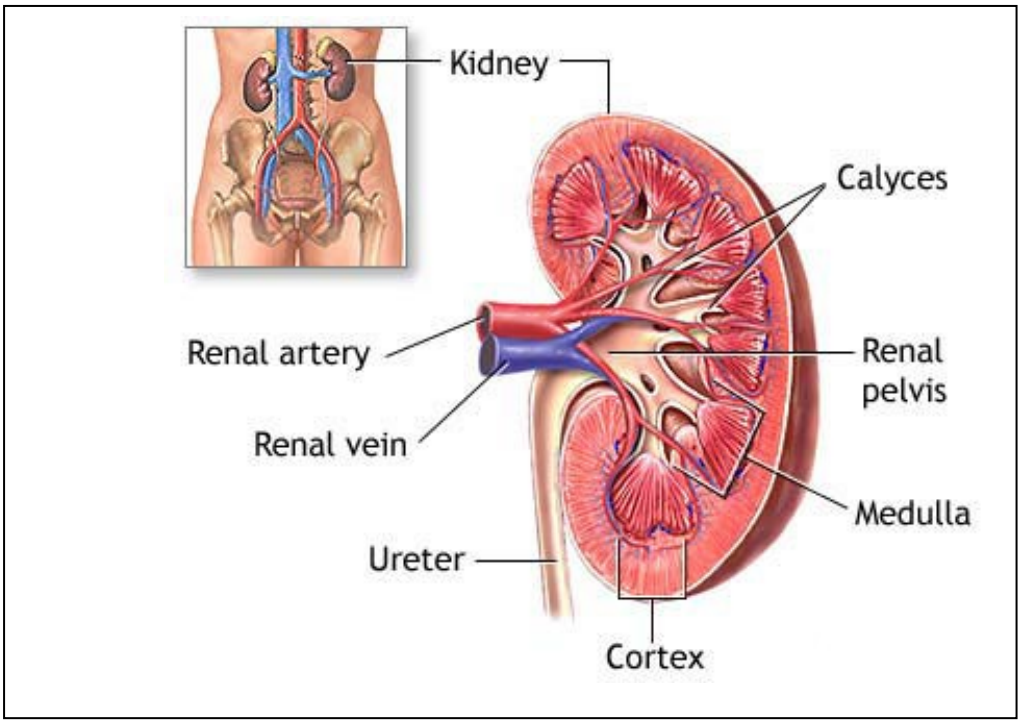
- quadratus lumborum .
- psoas major .
- psoas minor (**frequently absent**) .
- iliacus .

You may be asked in the attachments of these muscles on the skeleton, so know them just in case ^_^

Practical 5

Kidneys

You should identify the :



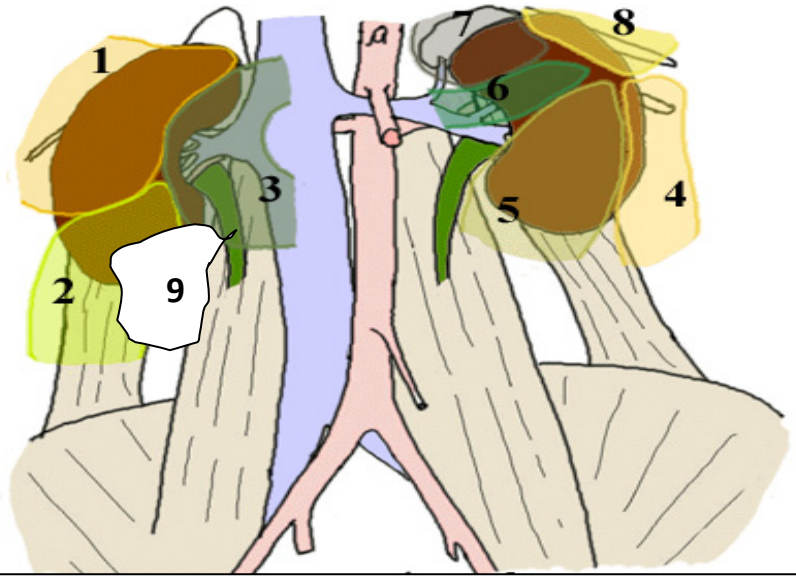
- ureter .
- renal vein .
- renal artery .

Remember

The arrangement of the vessels in the hilum from **anterior** to **posterior** is :

Renal vein >> Renal artery >> Ureter .

Relationship of the Kidneys to other abdominal viscera:



1- liver .

2- Right colic flexure .

3- 2nd part of duodenum .

4- left colic flexure & descending colon.

5- coils of jejunum .

6- body of pancreas .

7- stomach .

8- spleen .

9- coils of small intestine .

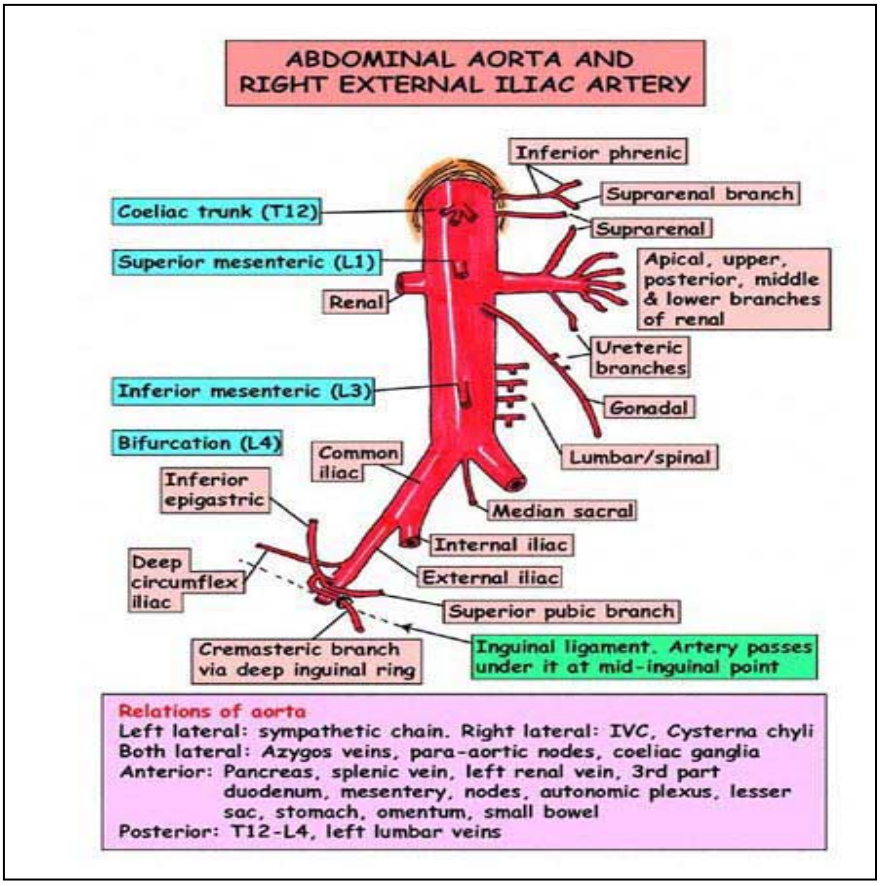
Remember

You should **distinguish** Between:

The right & left kidneys .

Practical 6

Abdominal Aorta & Inferior Vena Cava



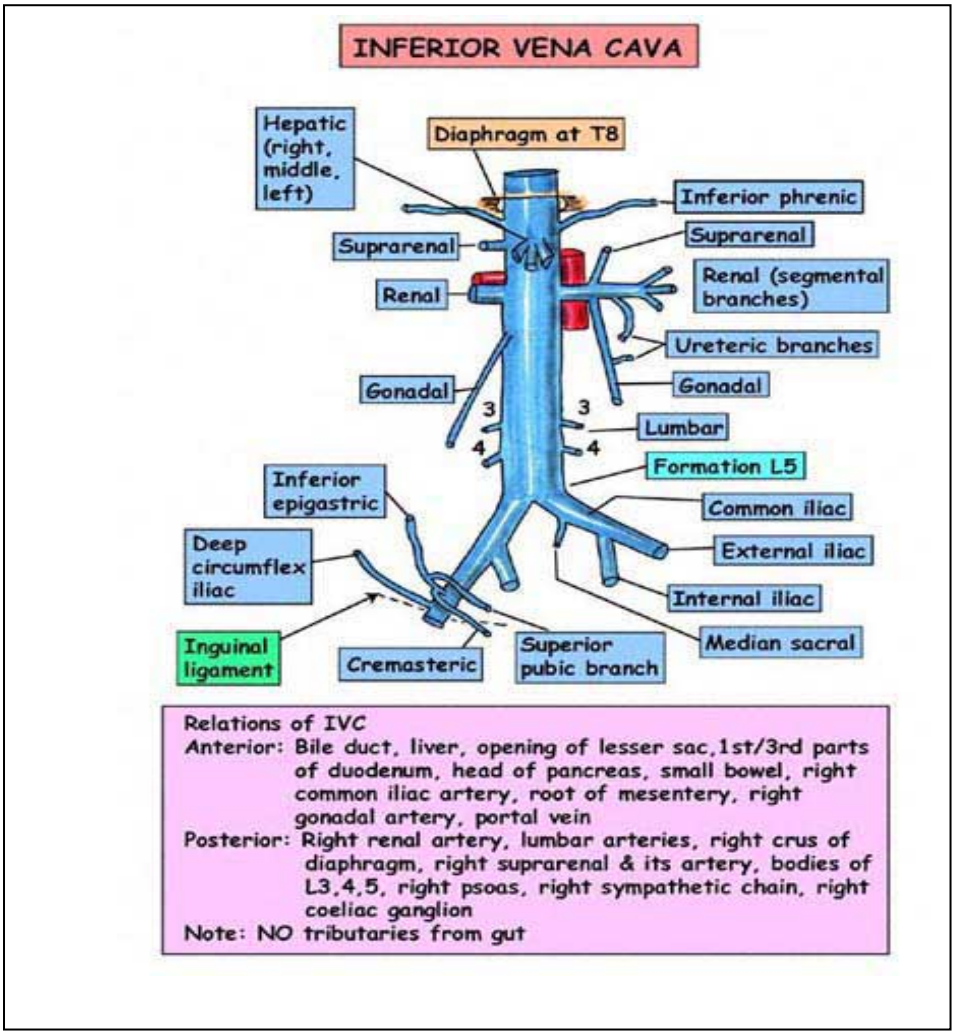
Abdominal Aorta , You should identify the :

- inferior phrenic a.
- celiac trunk .
- superior mesenteric a.

Left & right renal a.

- Suprarenal a.
- inferior mesenteric a.
- gonadal a.
- lumber a.
- common iliac a.

- median sacral a.



Inferior Vena Cava, You should identify the :

- common iliac v.

- lumber v.

- right gonadal v.

- right renal v.

- left renal vein , which receives :

a) left Gonadal v.

b) left suprarenal v.

- right suprarenal v.

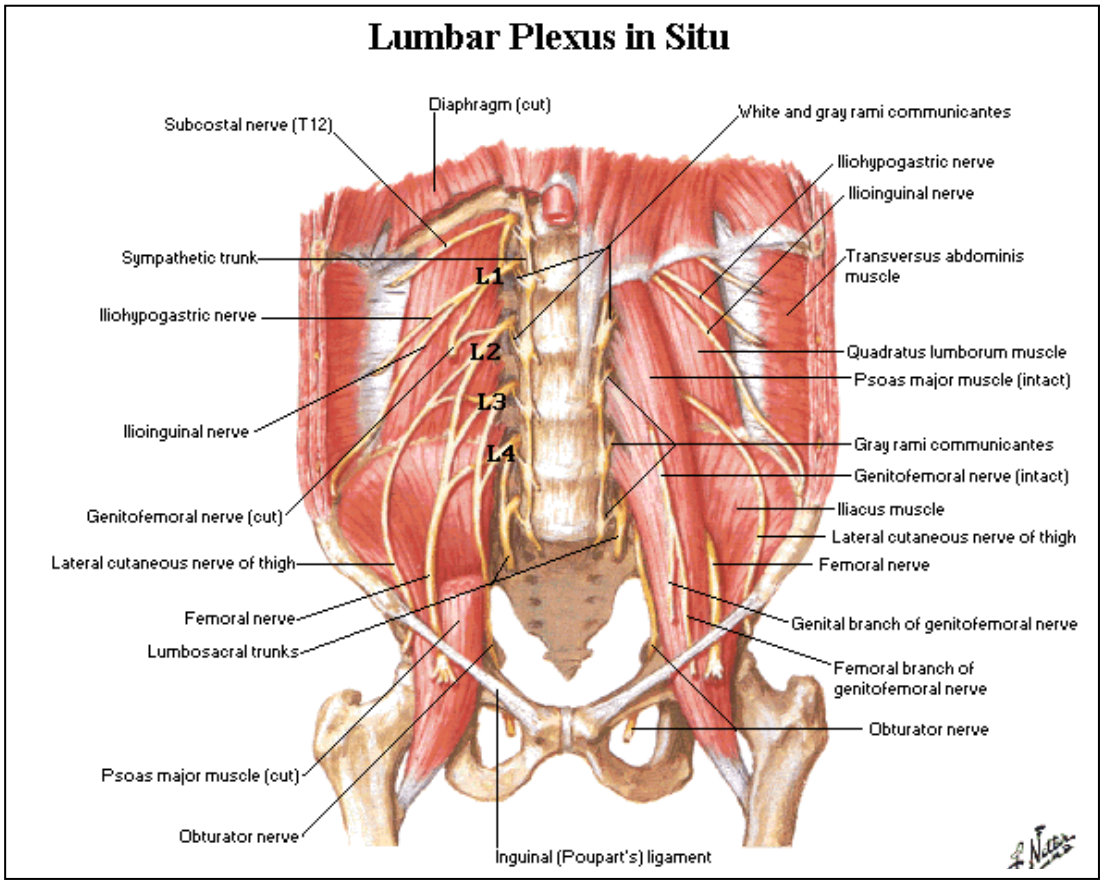
- hepatic v.

- inferior phrenic v.

- median sacral v.

Practical 7

Lumbar plexus



You should identify the :

- subcostal nerve T12 (**which is not branch of the lumbar plexus**) .

- iliohypogastric nerve L1 .

- ilioinguinal nerve L1 .

- genitofemoral nerve L1 + L2 - lies on top of the psoas major muscle .

- lateral cutaneous nerve of the thigh L2 + L3 .

- femoral nerve L2 + L3 + L4 - lateral to the psoas major .

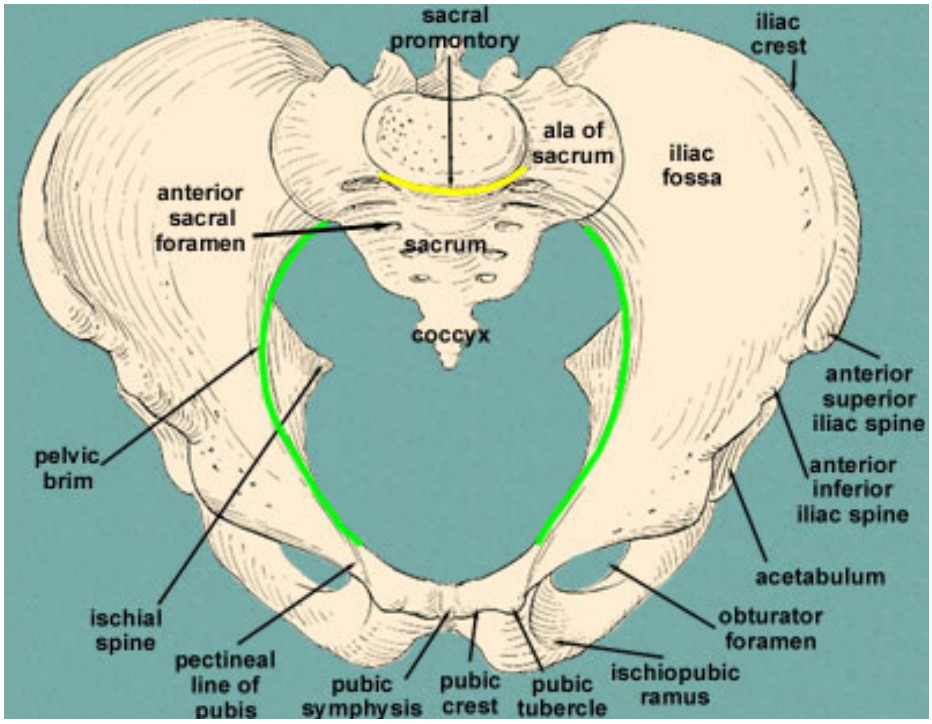
- obturator nerve L2 + L3 + L4 - medial to the psoas major .

- lumbosacral trunk L4 + L5 .

Practical 8

Bony Pelvis & Sacrum

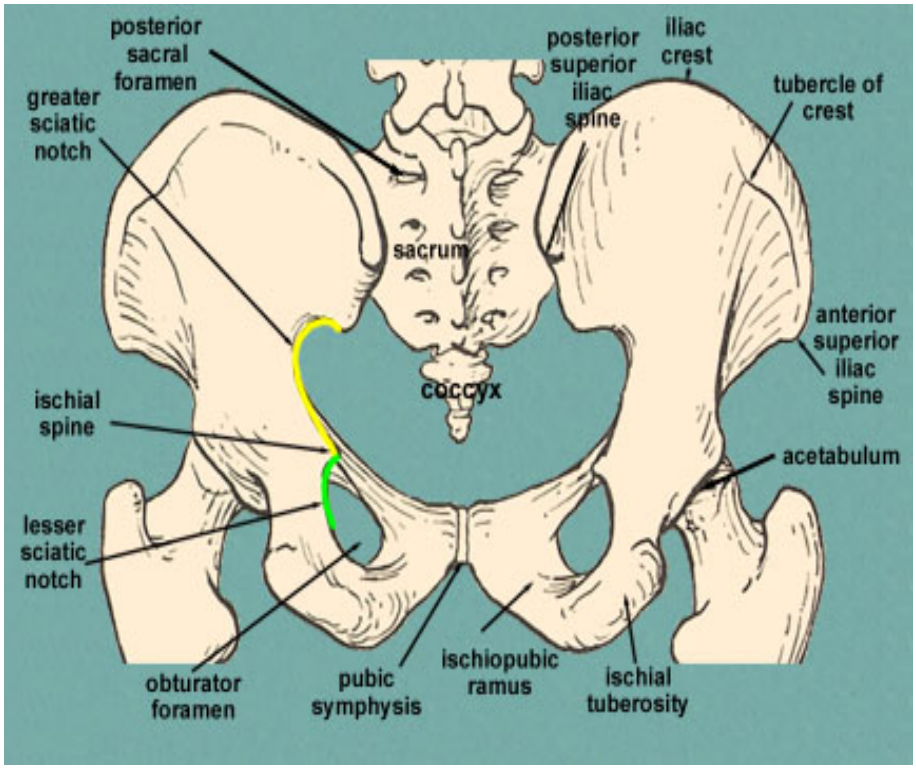
From the superior view of the pelvis, you should be able to identify the :



1. iliac crest .
2. anterior superior iliac spine .
3. anterior inferior iliac spine .
4. acetabulum .
5. obturator foramen .
6. ischiopubic ramus .
7. pubic tubercle .
8. pectineal line of the pubis .
9. pubic crest .
10. pubic symphysis .
11. pelvic brim (separates the true from the false pelvis) .
12. iliac fossa .
13. sacral promontory .
14. sacrum .
    - anterior sacral foramen .
    - ala of sacrum .
15. coccyx .

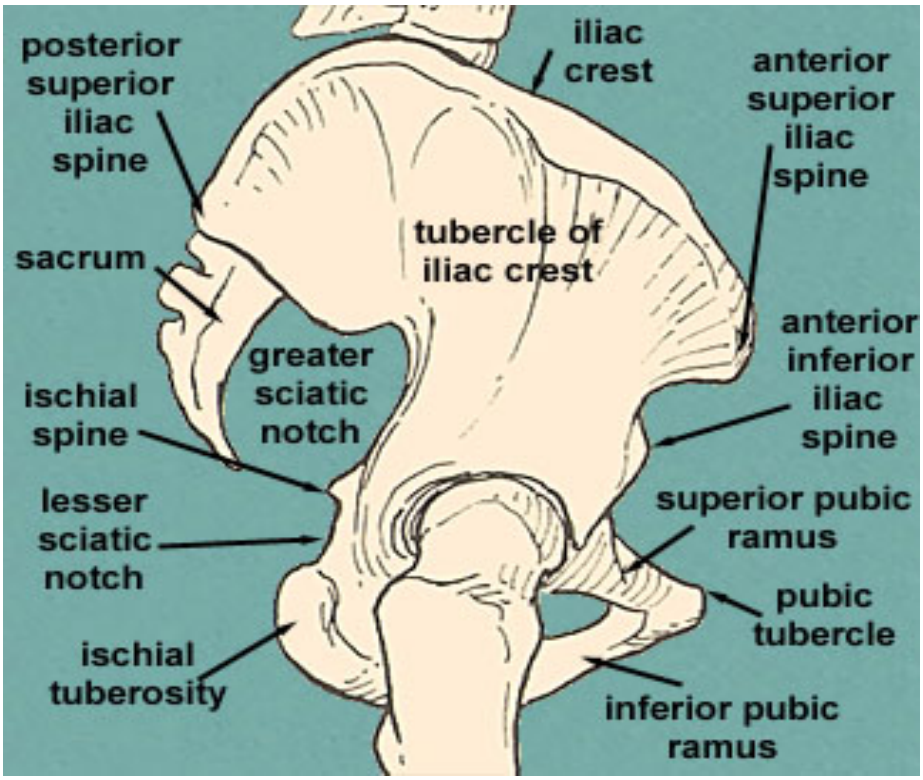
16. ischial spine .

Turn the pelvis over and identify the structures on the back:



1. sacrum .
    - posterior sacral foramen .
2. coccyx .
3. posterior superior iliac spine .
4. iliac crest .
5. anterior superior iliac spine .
6. tubercle of the crest .
7. ischial tuberosity .
8. acetabulum .
9. ischiopubic ramus .
10. pubic symphysis .
11. obturator foramen .
12. ischial spine .
13. greater sciatic notch .
14. lesser sciatic notch .

From the lateral view, identify the:



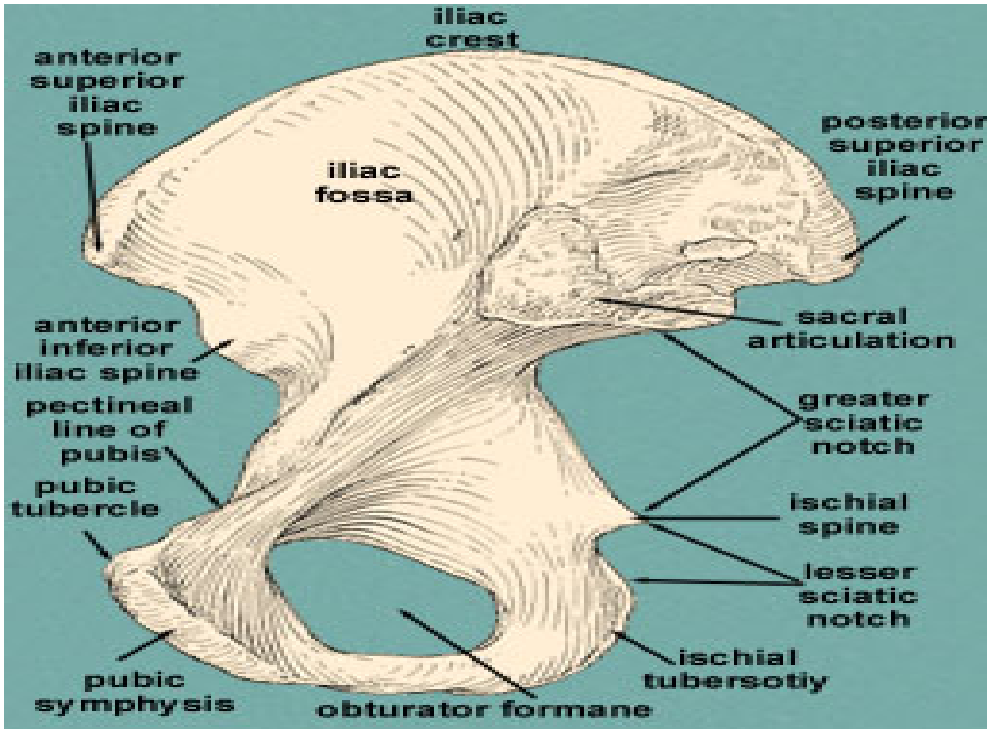
1. sacrum .
2. posterior superior iliac spine .
3. iliac crest .
4. tubercle of the crest .
5. anterior superior iliac spine .
6. anterior inferior iliac spine .
7. pubic tubercle .
8. inferior pubic ramus .
9. superior pubic ramus .
10. ischial tuberosity .
11. greater sciatic notch .
12. ischial spine .
13. lesser sciatic notch .
14. obturator foramen (not labeled) .

Remember

You should **distinguish** Between:

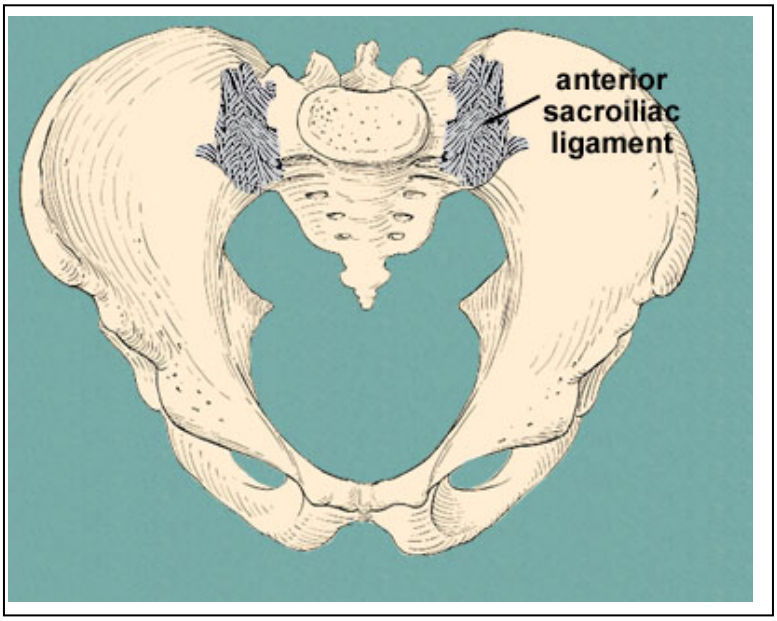
The right & left hip bone and between the male & the female one .

In this image, the pelvis is shown as it would be in the erect posture. The anterior superior iliac spine and pubic tubercle are in the same vertical plane.
Looking at the pelvis from the inside, you should be able to identify the following items:



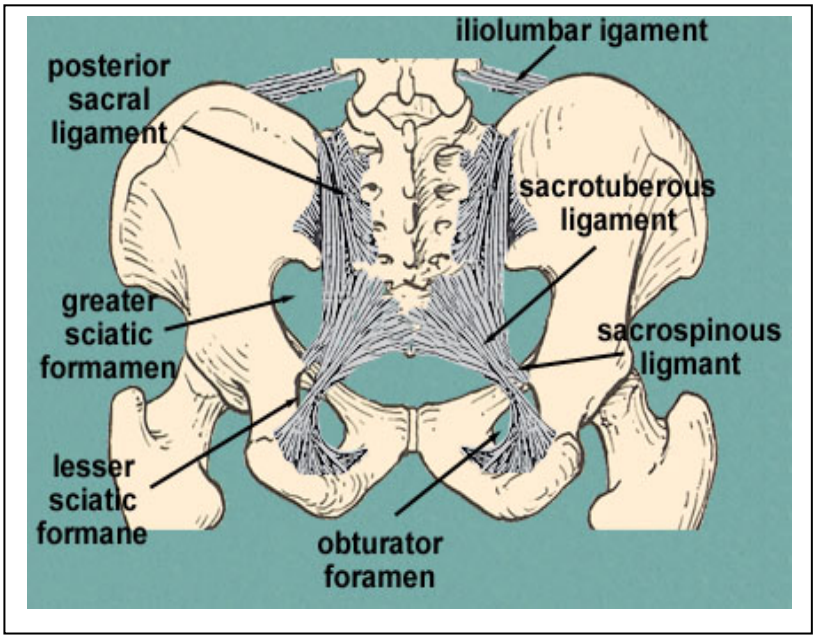
1. anterior superior iliac spine .
2. anterior inferior iliac spine .
3. pectineal line of pubis .
4. pubic tubercle .
5. pubic symphysis .
6. obturator foramen .
7. ischial tuberosity .
8. lesser sciatic notch .
9. ischial spine .
10. greater sciatic notch .
11. articulation of sacrum .
12. posterior superior iliac spine .
13. iliac fossa .
14. pelvic brim - not labeled .

Ligaments of the Pelvis



Anteriorly, you should identify the :

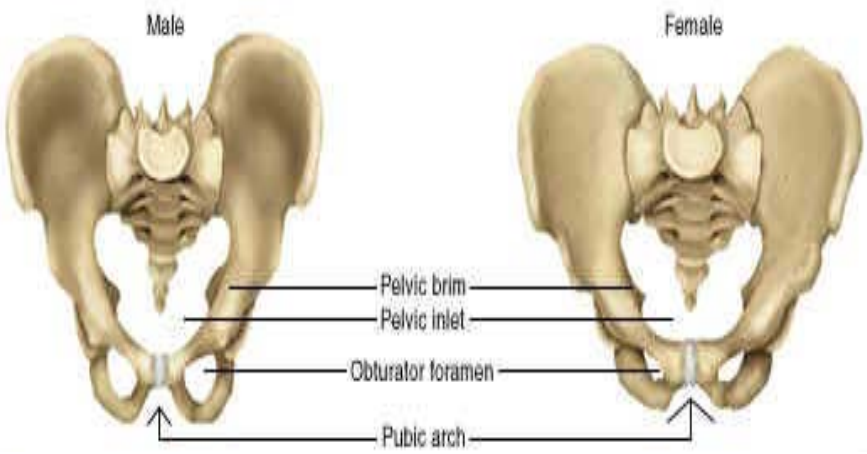
- anterior sacroiliac ligament.



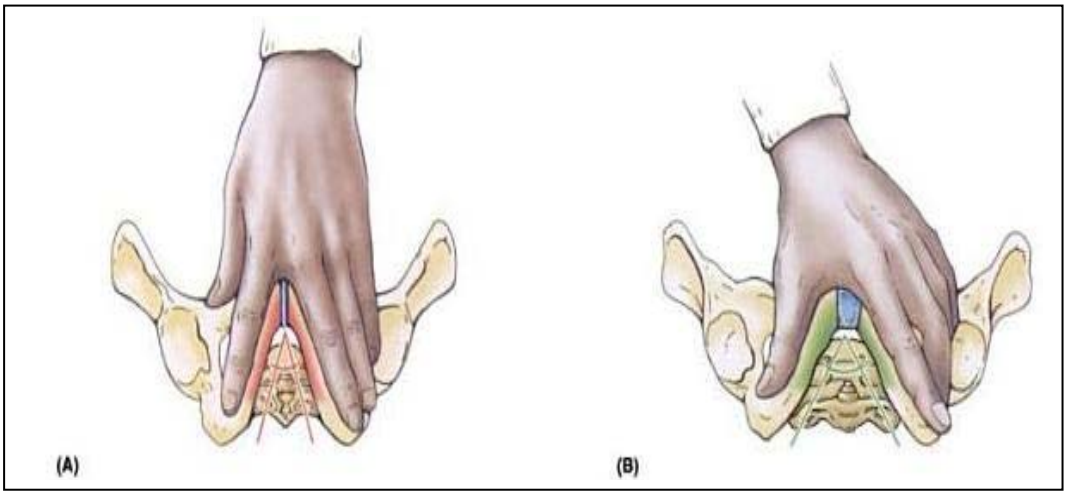
Posteriorly, you should identify the :

- sacrotuberous ligament .
- sacrospinous ligament .
- posterior sacroiliac ligament .
- iliolumbar ligament .

Differences between Male & Female Pelvis

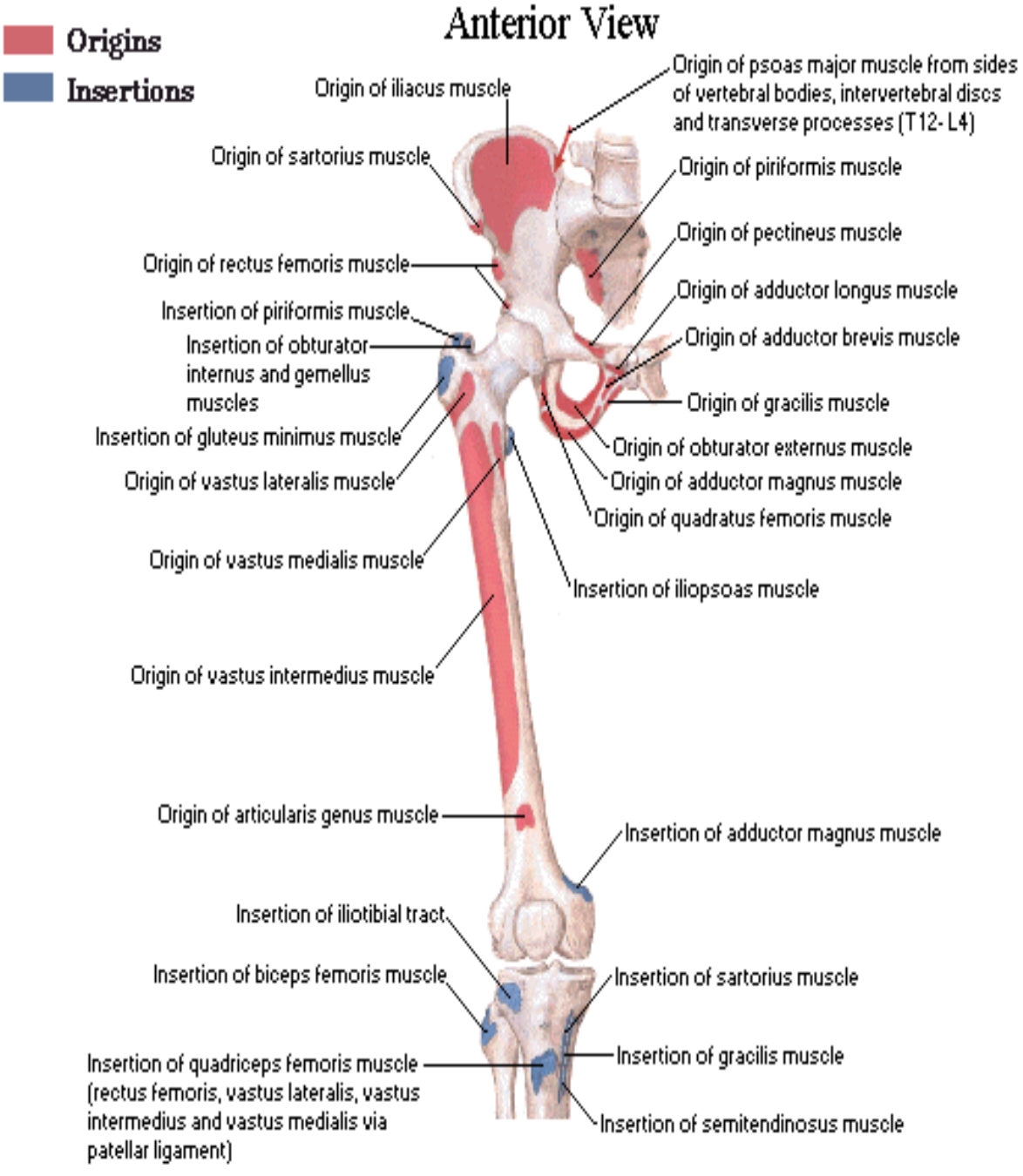


- Bones thinner, smaller, lighter in female .
- Inlet heart shaped in male, oval in female - in male, sacral promontory juts into to lesser pelvis .
- Outlet larger in female > male .
- Pelvic cavity wider/shallower in female .
- subpubic angle < 90 degrees in male, and obtuse in female (>90)
    - **Good one to tell difference, if asked if pelvis is male or female
    - If the subpubic angle is the distance as you making a peace sign with your fingers = male
    - if it is the same as the angle b/w you spreading your thumb/forefinger = female
- female sacrum shorter and wider than male .
- **obturator foramen** is oval or triangular in female and round in male .



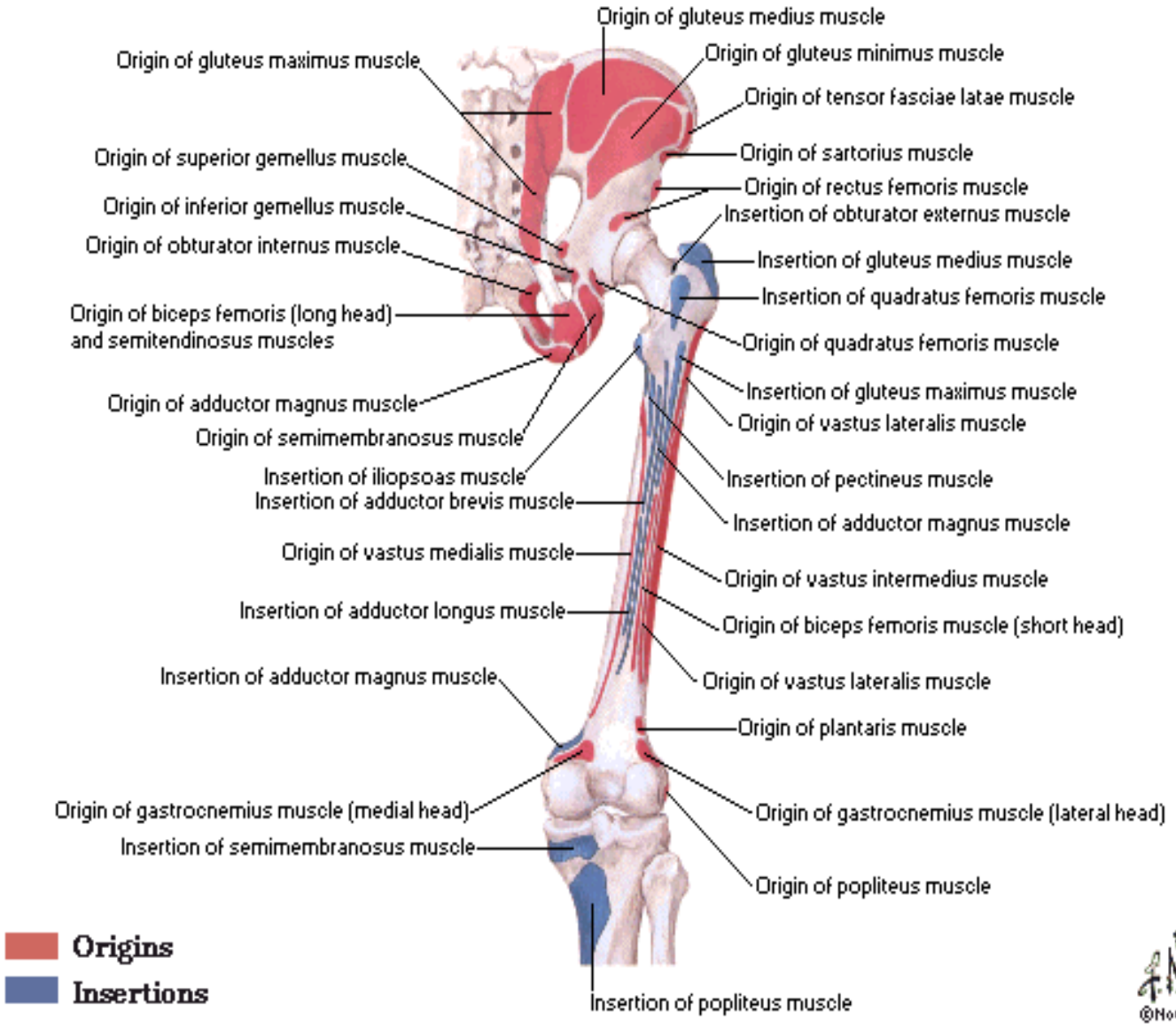
Bony Attachments of Muscles of Hip and Thigh

Anterior View

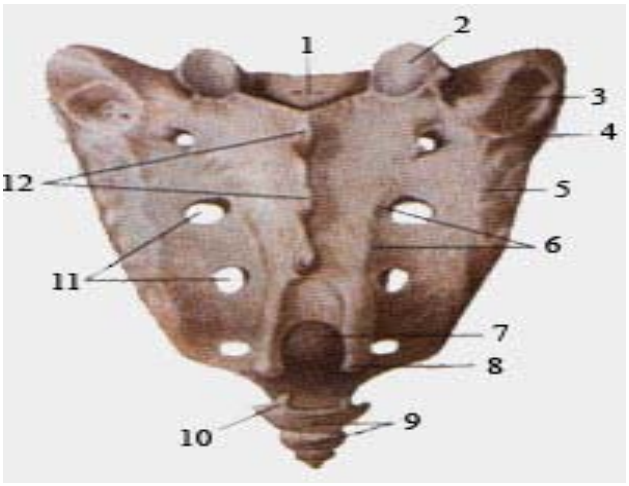


Bony Attachments of Muscles of Hip and Thigh

Posterior View

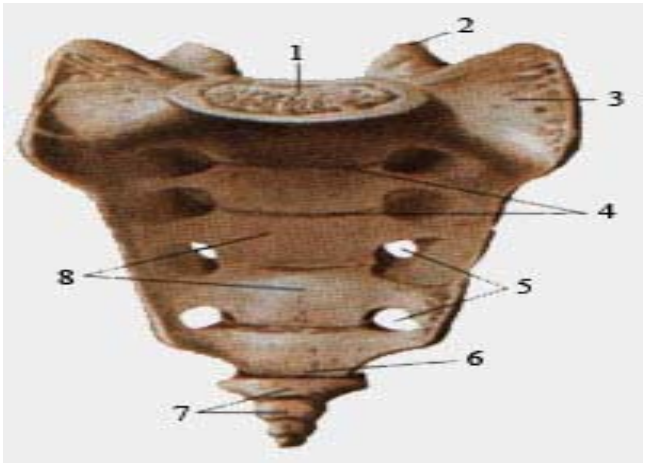


Sacrum



Posteriorly, you should identify the :

1-sacral canal (superior opening) . 6-intermediate sacral crest .
2-superior articular process . 7-sacral hiatus (inferior opening of sacral canal)
3-sacral tuberocity. 8-sacral cornu .
4-auricular surface . 9-coccyx (coccygeal) vertebrae.
5-lateral sacral crest . 10-coccygeal cornu .
11-posterior (dorsal) sacral foramina . 12-median sacral crest .



Anteriorly, you should identify the :

1-body of first sacral vertebra. 5-anterior sacral foramina

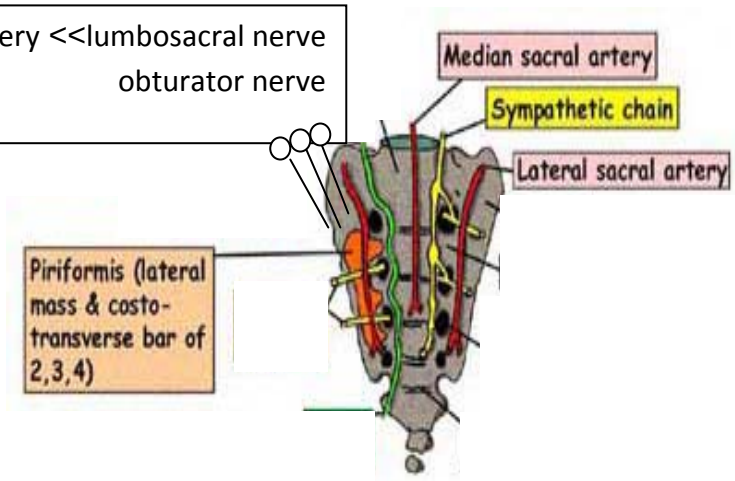
2-superior articular process . 6-facet of coccyx .

3-uper surface of lateral part (ala) . 7-coccyx .

4-transverse ridges .

8-sacral vertebrae .

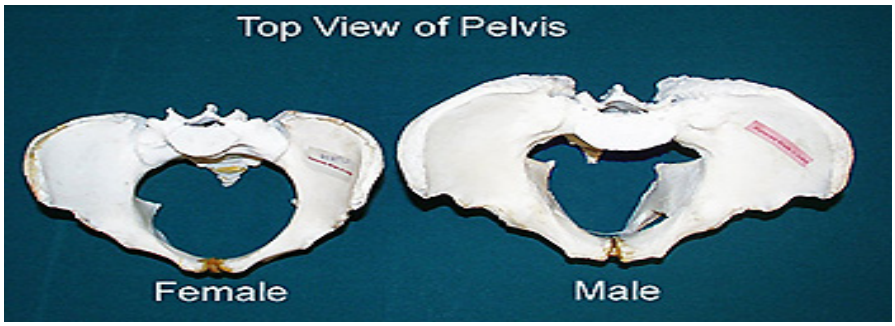
<< ilio lumber artery <<lumbosacral nerve
obturator nerve



You should identify the structures related to the anterior surface of the sacrum " From **medial** to **lateral** " :

Median sacral artery >> sympathetic chain >> lateral sacral artery >> lumbosacral nerve >> ilio lumber artery >> obturator nerve .

You should identify also the muscle attached to the sacrum witch is **Piriformis muscle .**



Remember

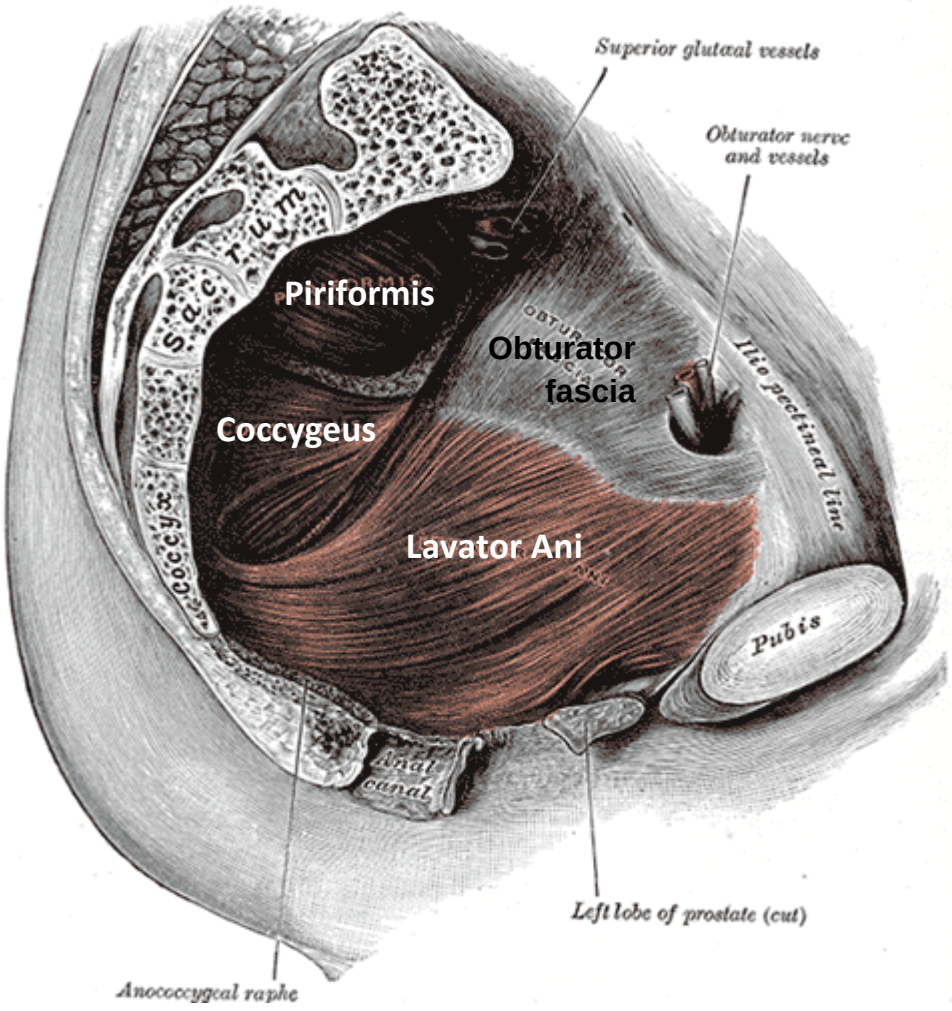
The sacrum is noticeably sexually dimorphic (differently-shaped in males and females).

In the female the sacrum is shorter and wider than in the male; the lower half forms a greater angle with the upper; the upper half is nearly straight, the lower half presenting the greatest amount of curvature. The bone is also directed more obliquely backward; this increases the size of the pelvic cavity and renders the sacrovertebral angle more prominent.

In the male the curvature is more evenly distributed over the whole length of the bone, and is altogether greater than in the female.

Practical 8 (continue ..)

Pelvic wall



you should identify the :

- Lavator Ani muscle .

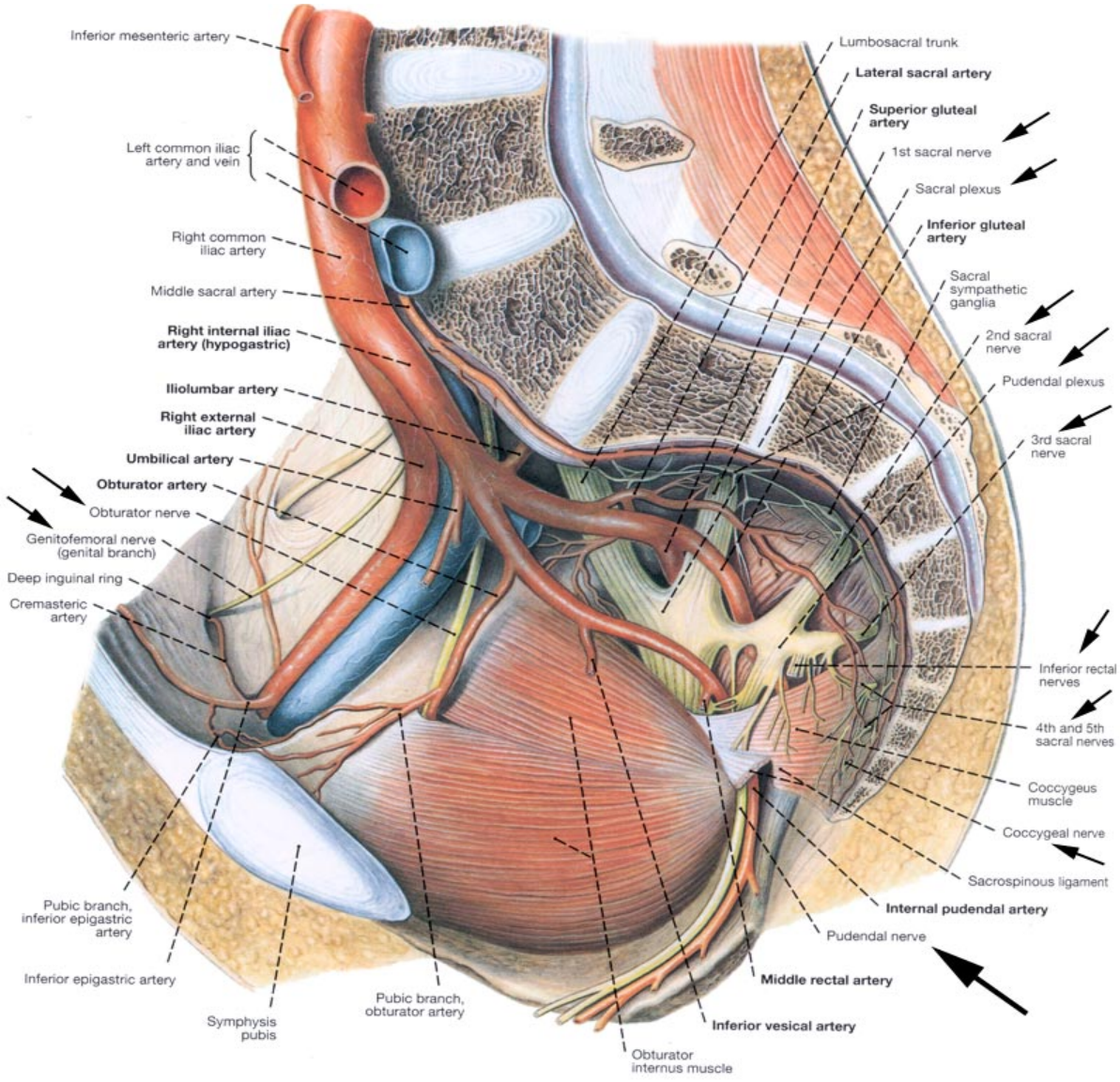
- Coccygeus muscle .

- Piriformis muscle .

- Obturator internus muscle undercover its fascia .

Practical 9

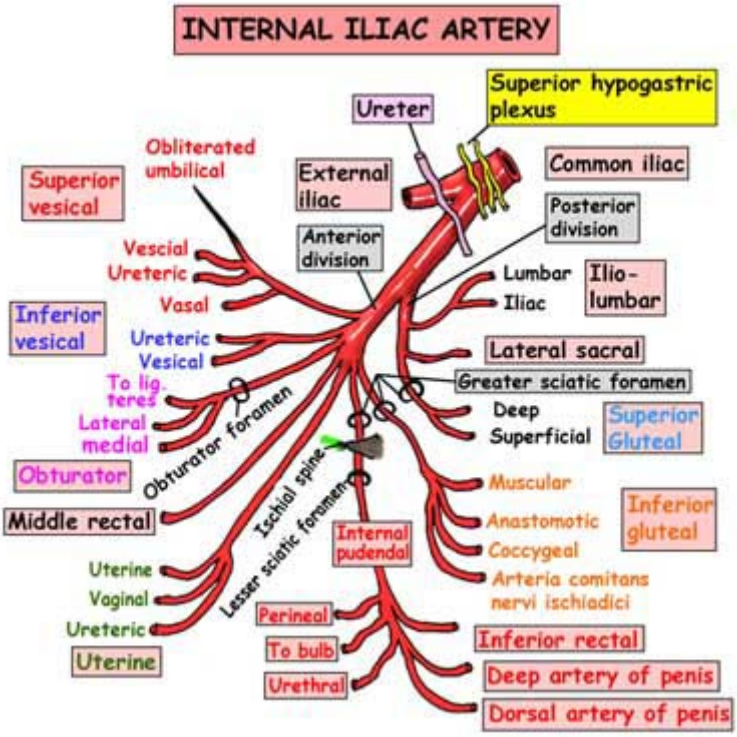
Pelvis vessels , Abdomen x-rays & Abdomen Transsections



you should identify the :

- Lumbosacral trunk .

- 1st , 2nd , 3rd & 4th sacral nerves .

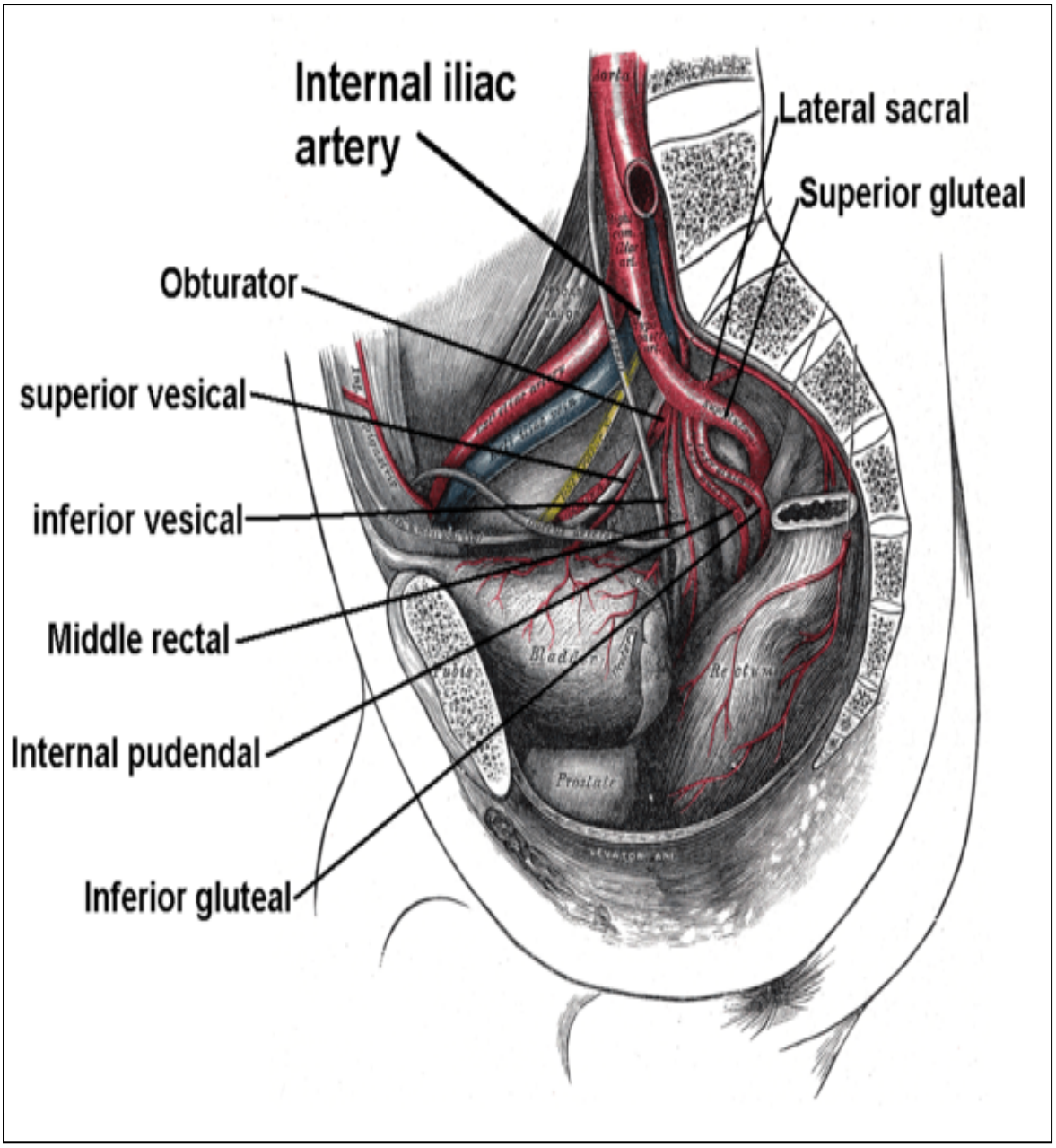


The exact arrangement of branches of the internal iliac artery is variable. Generally, the artery divides into an anterior division and a posterior division, with the posterior division giving rise to the superior gluteal, iliolumbar, and lateral sacral arteries. The rest usually arise from the anterior division.

The following are the branches of internal iliac artery. Because it is variable, a listed artery may not be a direct branch, but instead might arise off a direct branch.

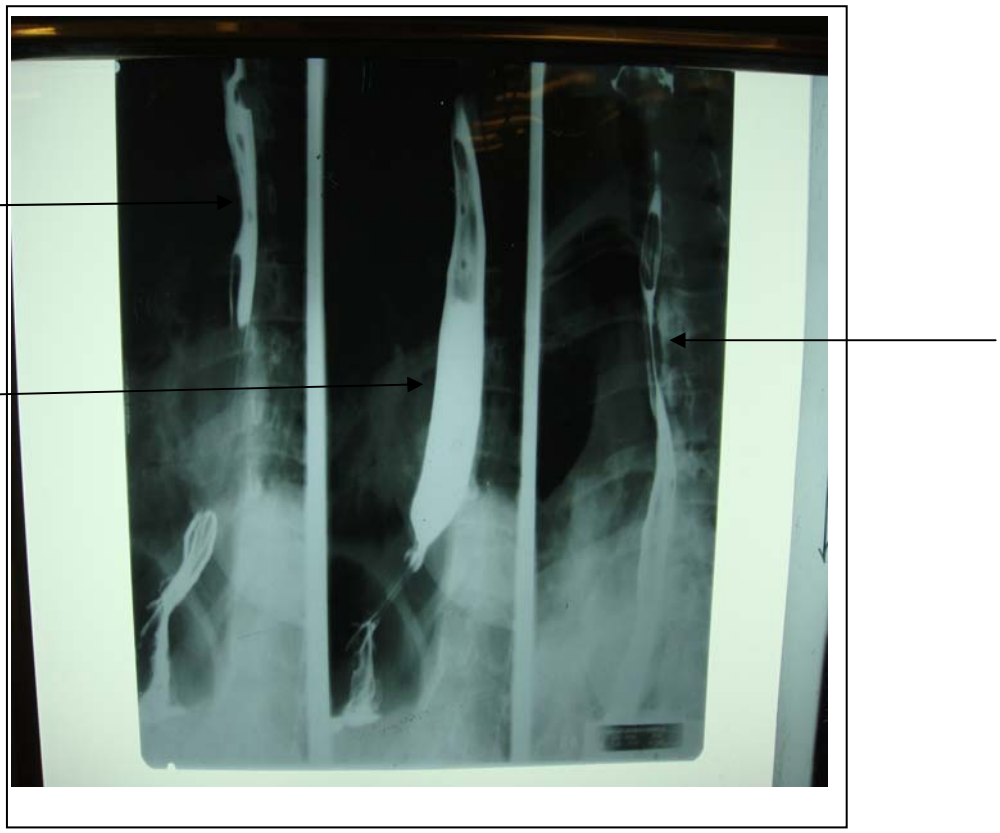
Division	Branch	Sub-branches	To/through
Posterior	Iliolumbar artery	lumbar and iliac branches	psoas major muscle, quadratus lumborum muscle, iliacus muscle
Posterior	Lateral sacral arteries	superior and inferior branches	anterior sacral foramina
Posterior	Superior gluteal artery	-	greater sciatic foramen
Anterior	Obturator artery (occasionally from inferior epigastric artery)	-	obturator canal
Anterior	Inferior gluteal artery	-	greater sciatic foramen
Anterior	Umbilical artery	superior vesical artery (usually, but sometimes it branches directly from anterior trunk)	medial umbilical ligament
Anterior	Uterine artery (females) or deferential artery (males)	superior and vaginal branches	uterus, vas deferens
Anterior	Vaginal artery (females, can also arise from uterine artery)	-	vagina
Anterior	inferior vesical artery	-	urinary bladder
Anterior	Middle rectal artery	-	rectum
Anterior	Internal pudendal artery	many branches - see article for details	greater sciatic foramen

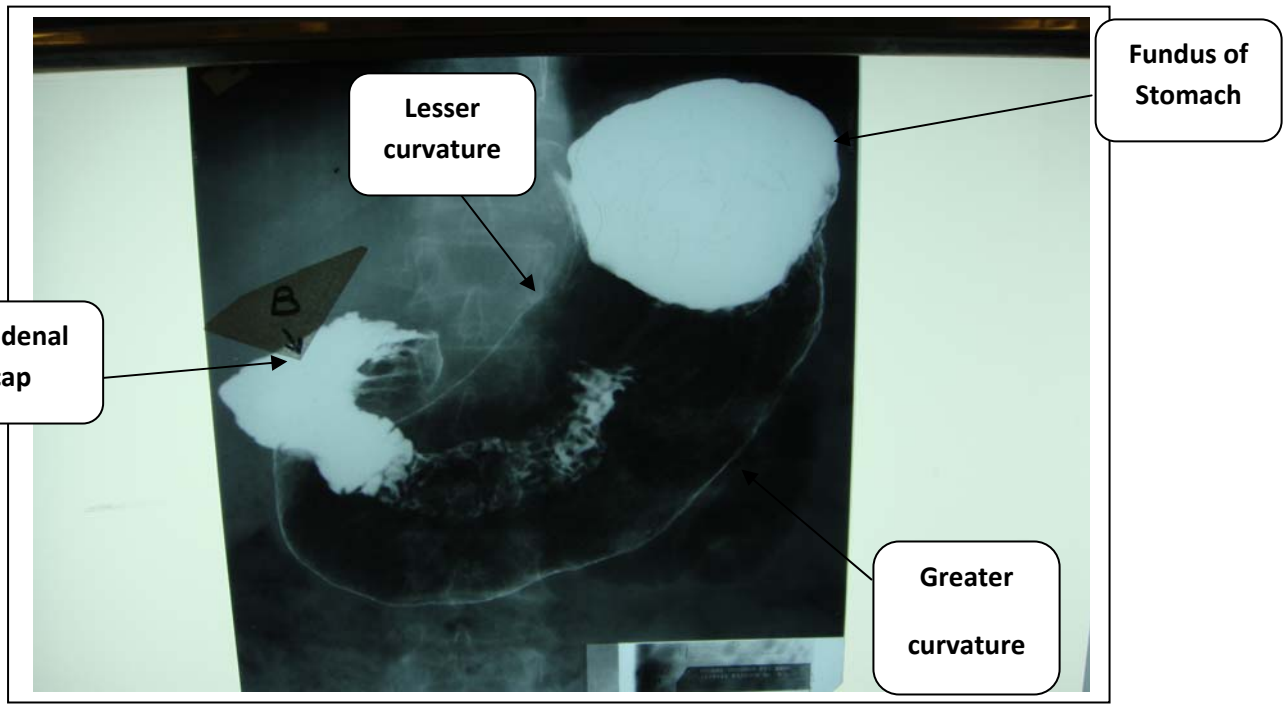
Internal Iliac Artery

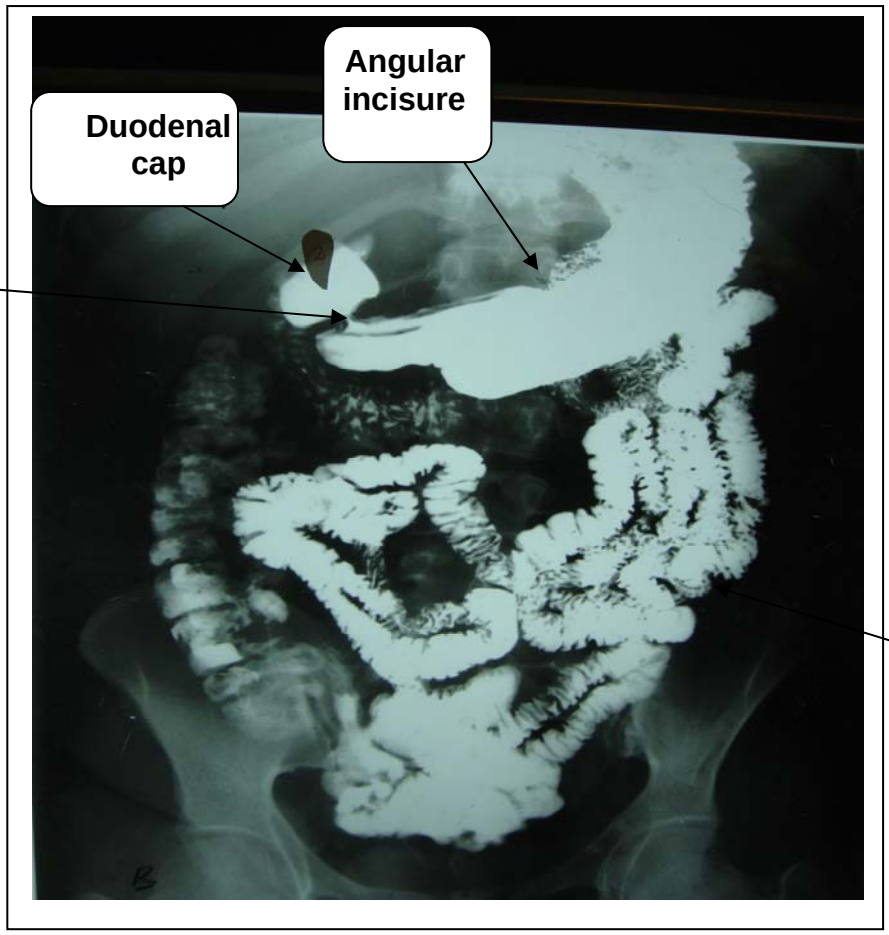


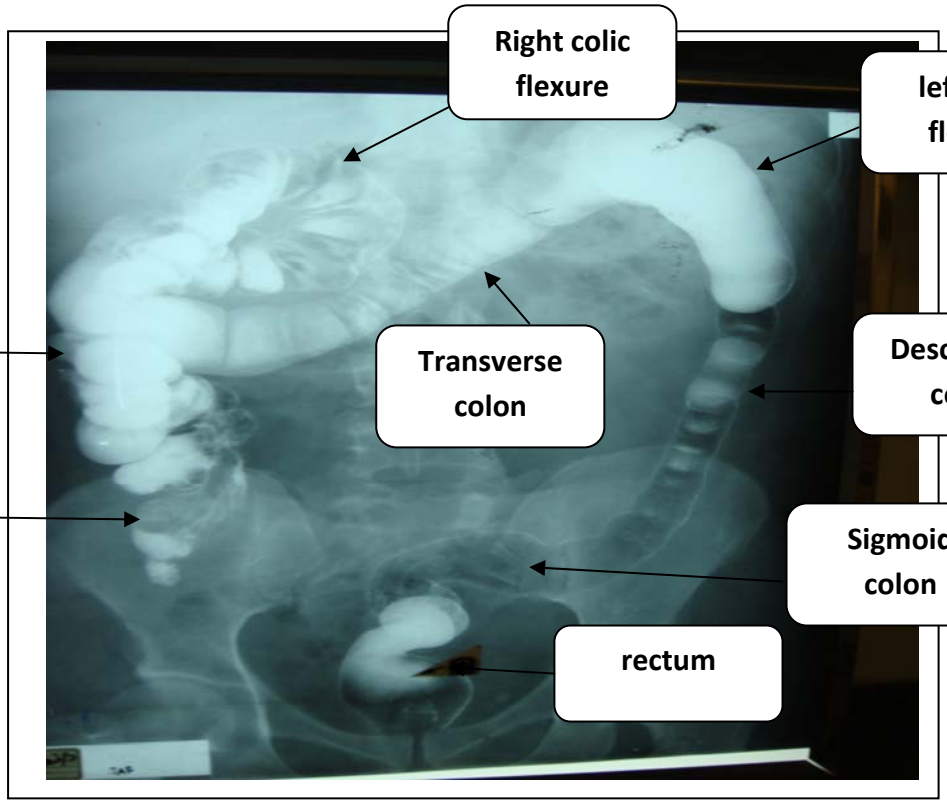
Abdomen x-rays

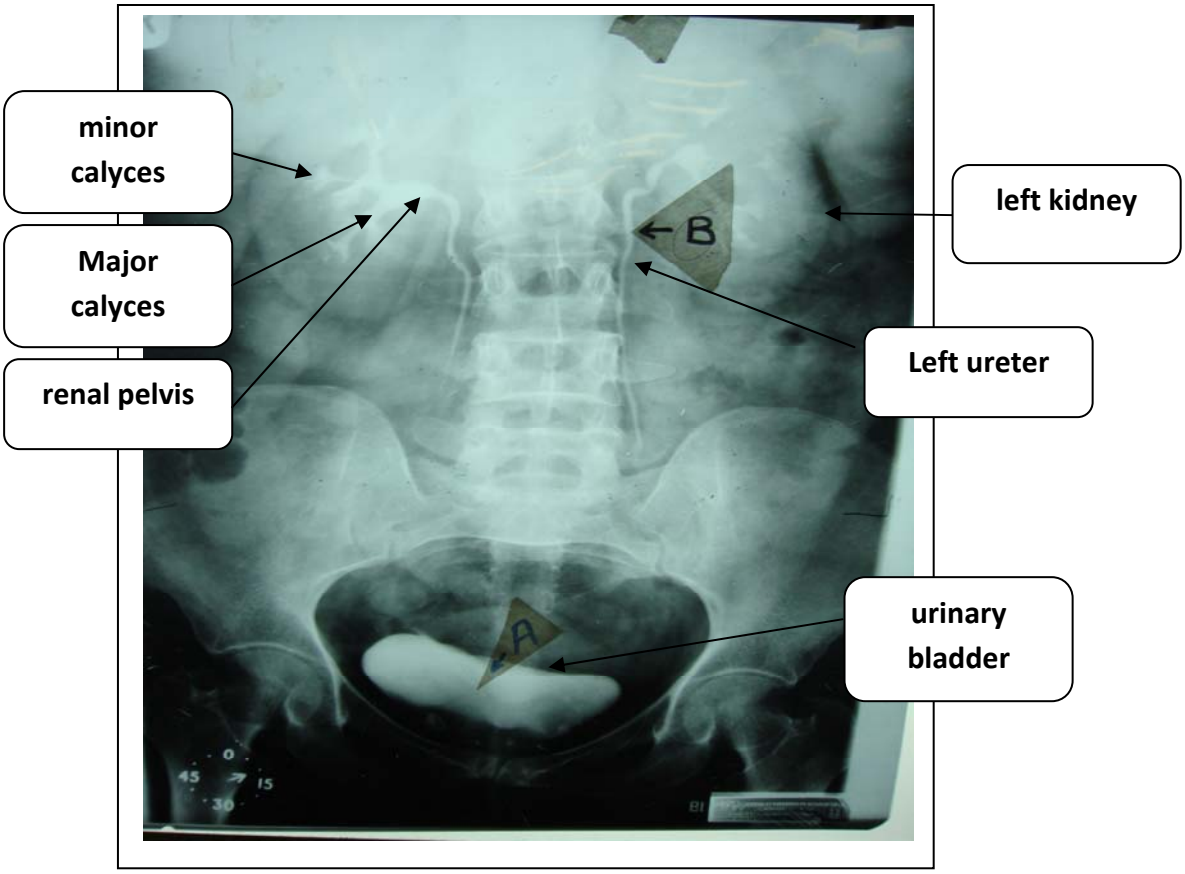
Esophagus

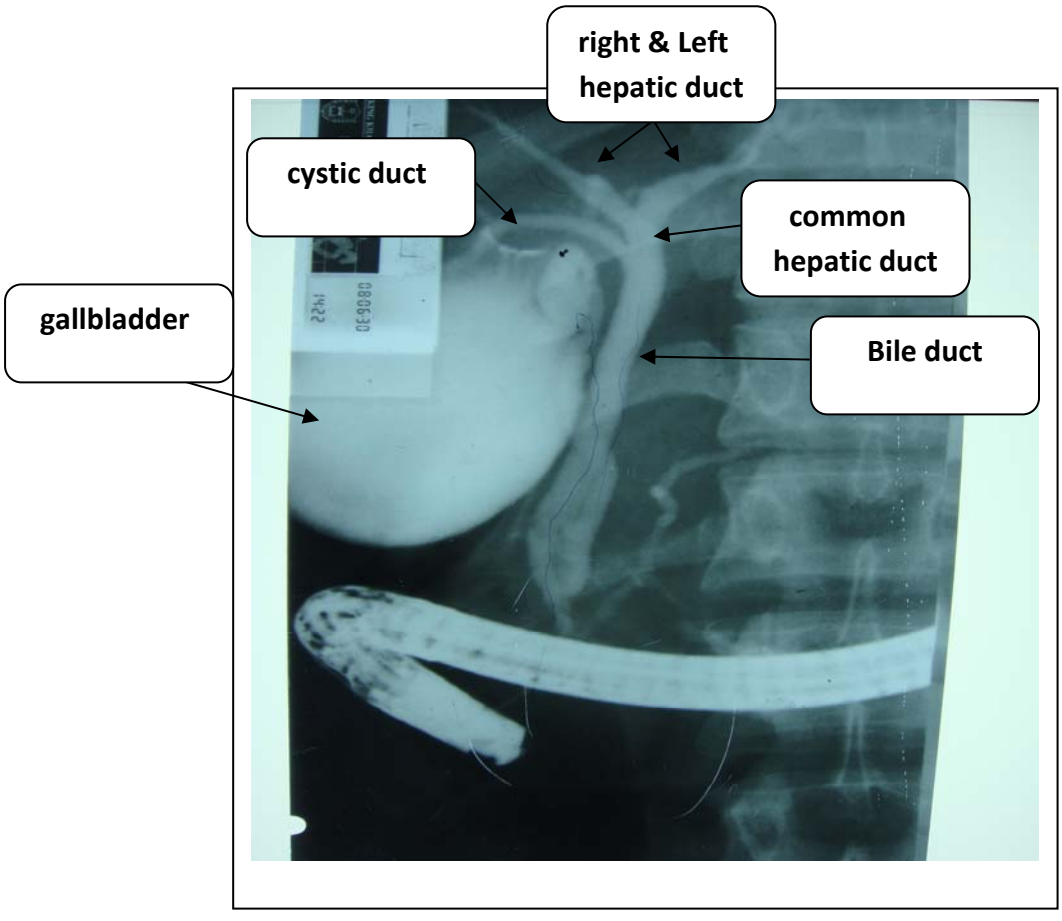





Angular incisure
Duodenal cap
pyloric sphincter
Small intestine


Right colic flexure
left colic flexure
Ascending colon
Transverse colon
Descending colon
cecum
Sigmoid colon
rectum

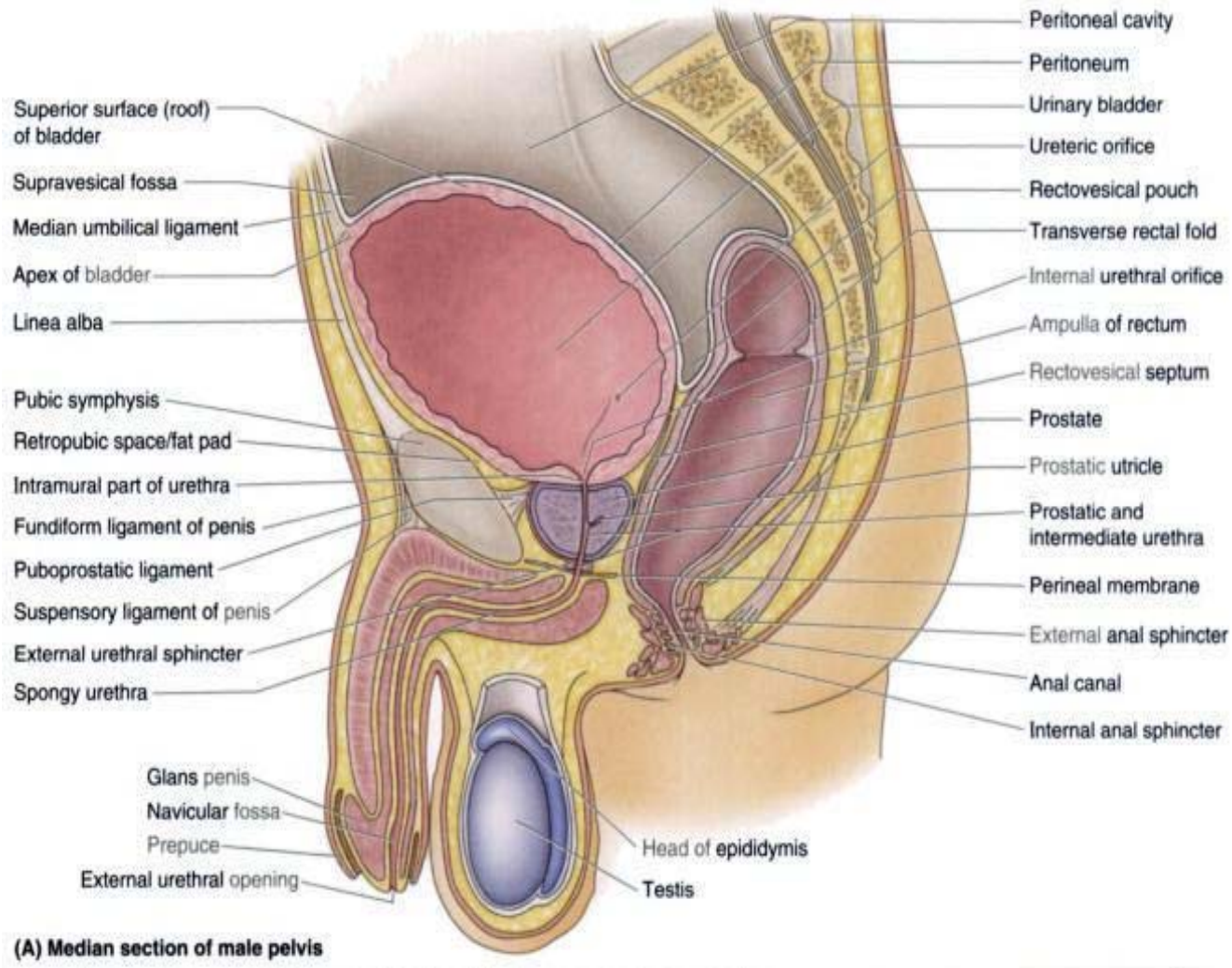

minor calyces
Major calyces
renal pelvis
left kidney
Left ureter
urinary bladder
B
A


right & Left hepatic duct
cystic duct
common hepatic duct
gallbladder
Bile duct

Practical 10

Urinary Bladder & Rectum

In Male



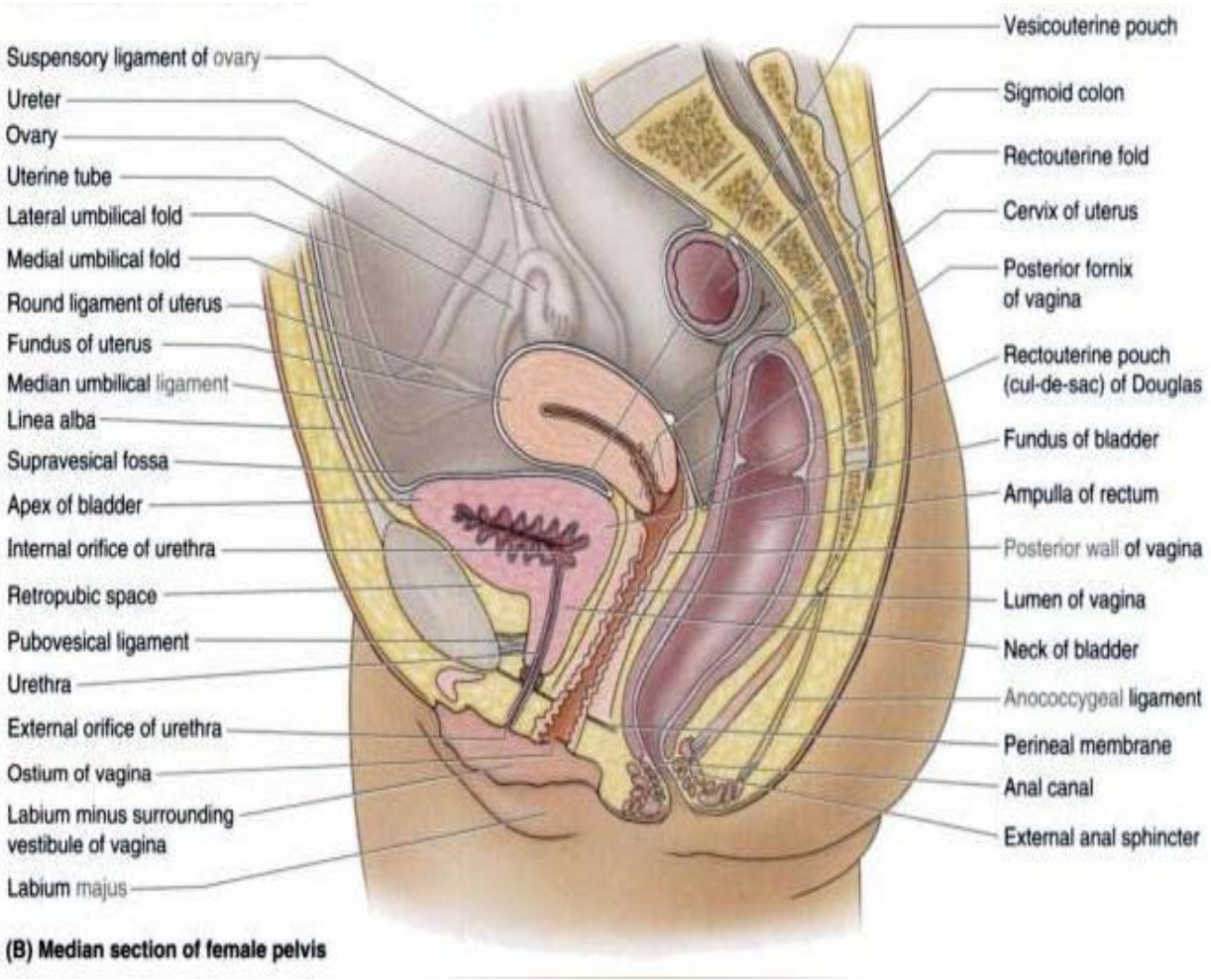
(A) Median section of male pelvis

you should identify the :

- Urinary Bladder.
- Urethra .
- Rectum .

- Anal Canal .

In Female



(B) Median section of female pelvis

you should identify the :

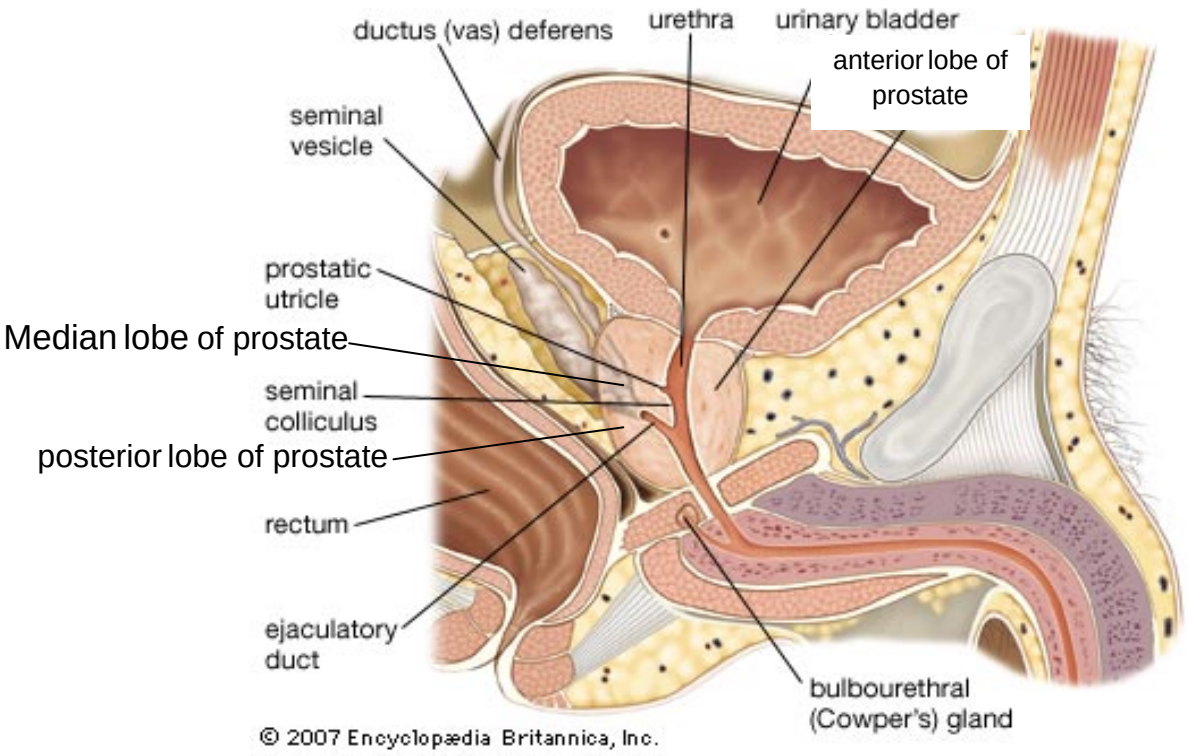
- Urinary Bladder.
- Urethra .
- Rectum .
- Anal Canal .

Remember

If they ask about the structure **related** to the body of pubic bone from posterior surface , it will be the urinary bladder but if the ask about the **muscle attachmen**t it will be lavator ani muscle .

Practical 11

Male Genital Organs

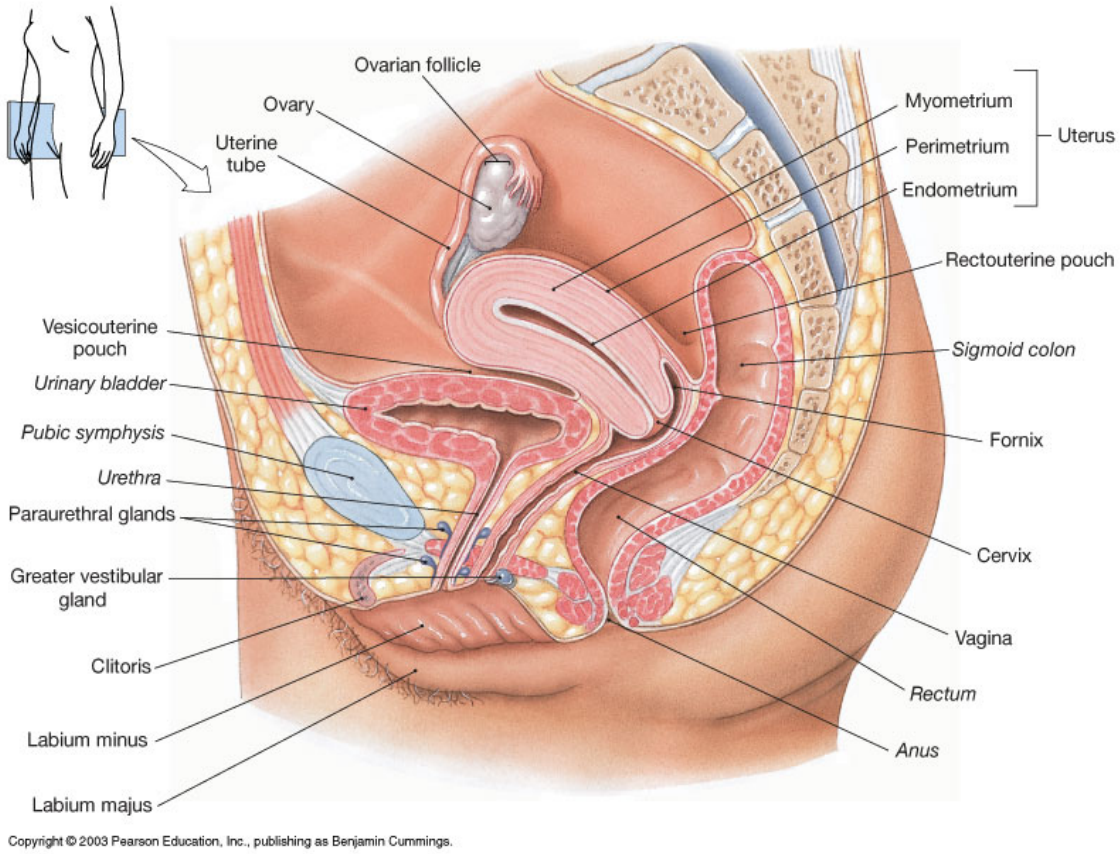


you should identify the :

- prostate gland (median , anterior & posterior lobes) .
- ejaculatory duct .
- Seminal Vesicles .
- vas deferens .

Practical 12

Female Genital Organs



you should identify the :

- Uterus .
- Ovaries .
- Fallopian (uterine) tubes .
- Vagina .

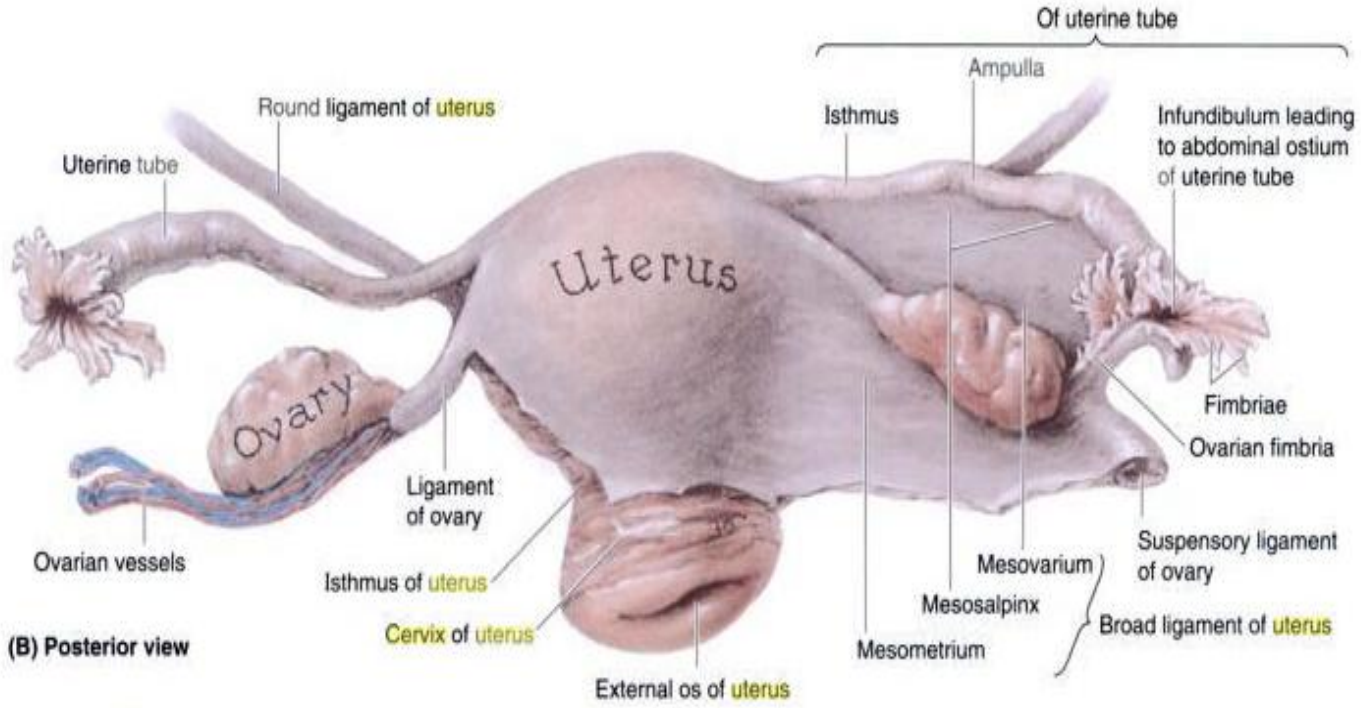
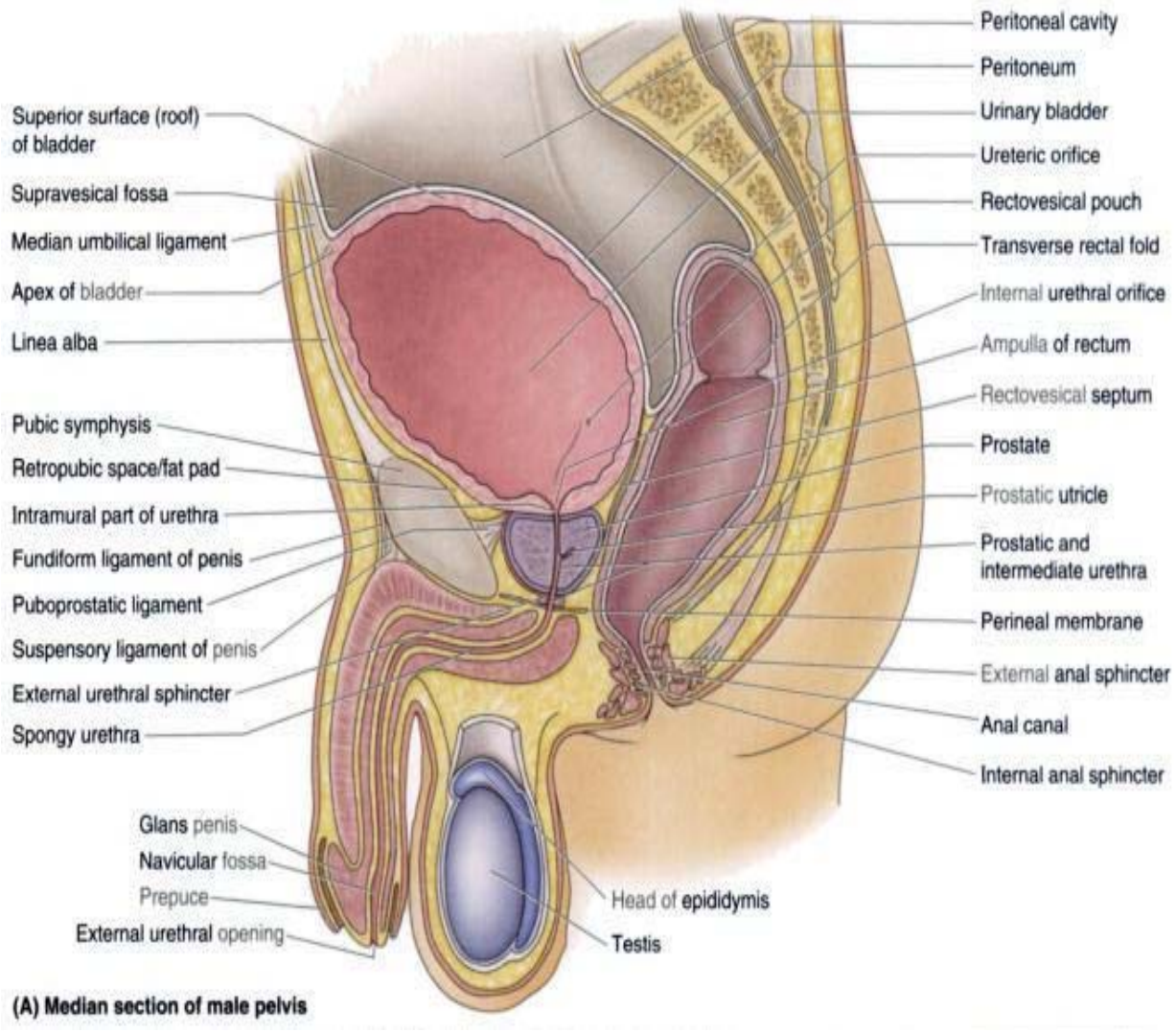


Figure 3.31. Female pelvic viscera. A. In this dissection of the female genital organs, the bladder and adjacent anterior pelvis (superior ramus and bodies of pubic bones) have been coronally sectioned and the anterior segment has been removed. On the right side, the uterine tube, ovary, broad ligament, and peritoneum covering the lateral wall of the pelvis have been removed to display the ureter and branches of the internal iliac artery. **B.** This dissection reveals the uterus, ovaries, uterine tubes, and related structures. The broad ligament is removed on the right side.

- ovarian ligament .
- round ligament of uterus .
- suspensory ligament of ovary .
- Broad ligament of uterus .

Practical 13

Anal Triangle : anal canal & ischiorectal fossa



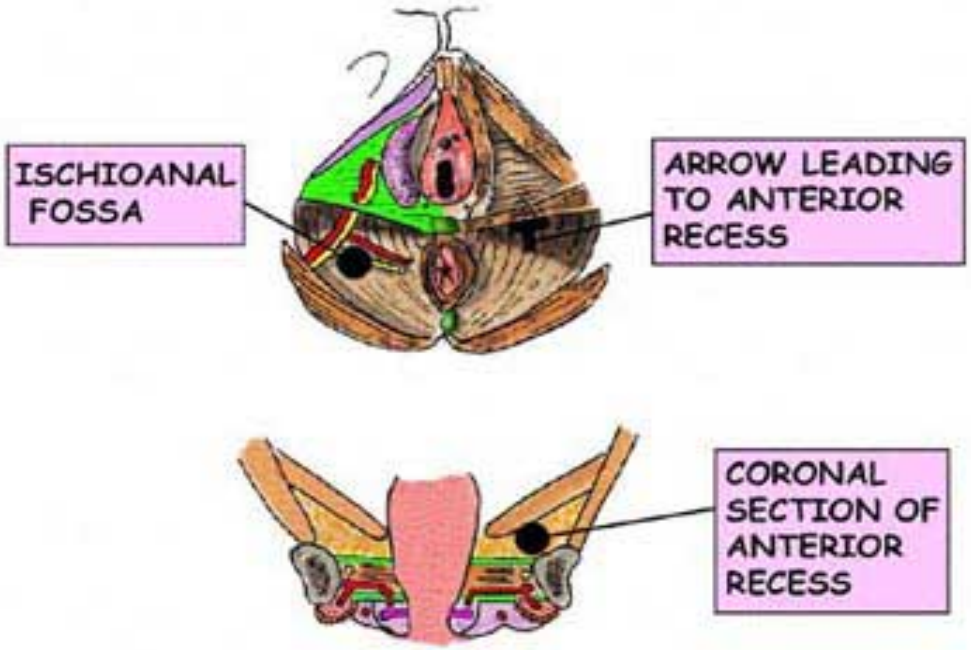
(A) Median section of male pelvis

you should identify the :

- Anal canal .

ISCHIOANAL (ISCHIORECTAL) FOSSA

- Wedge shaped & filled with fat
- Crossed by inferior rectal nerve & artery
- Has Alcock's canal in its lateral wall
- Base: Perineal skin
- Medial: Anal canal, levator ani
- Lateral: Ischial tuberosity, obturator internus
- Apex: White line
- Anterior: Perineal body, urogenital diaphragm, anterior recess
- Posterior: Posterior recess, gluteus maximus, sacrotuberous ligament, anococcygeal body, horseshoe connection
- Contains: Fat, Alcock's (pudendal) canal, internal pudendal artery, pudendal nerve, inferior rectal artery/nerve, perineal branch of S4, perforating cutaneous nerve



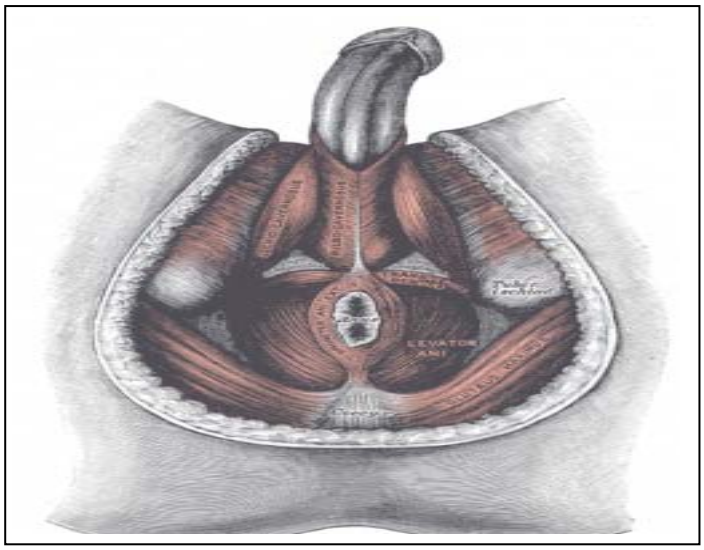
- ischiorectal fossa & its contents :

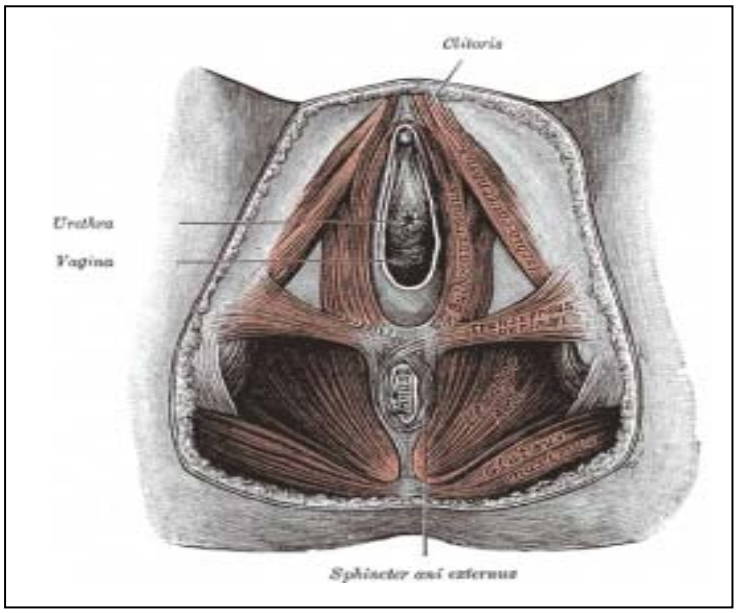
a) Internal pudendal artery .

b) Pudendal nerve .

Practical 14

Urogenital Triangle

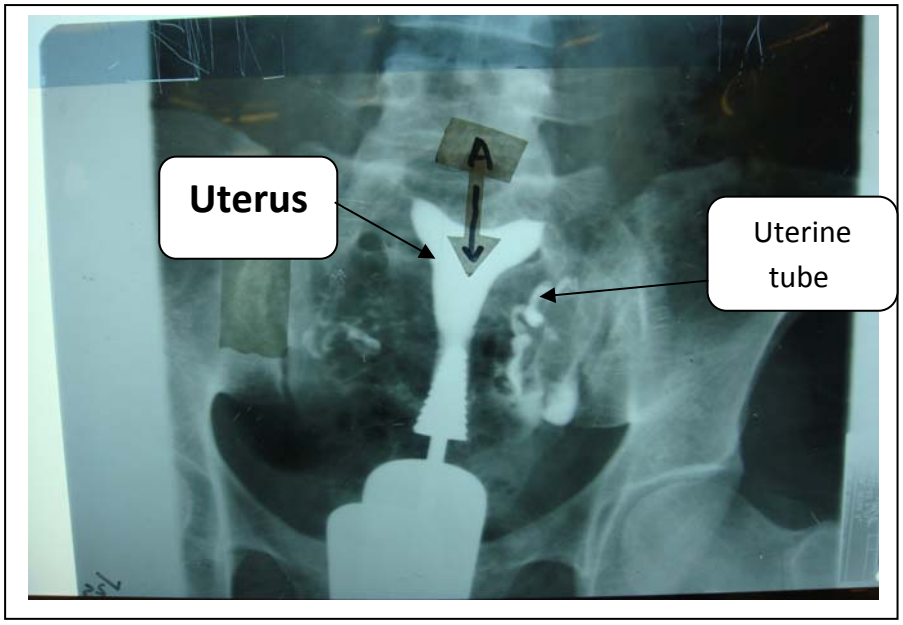


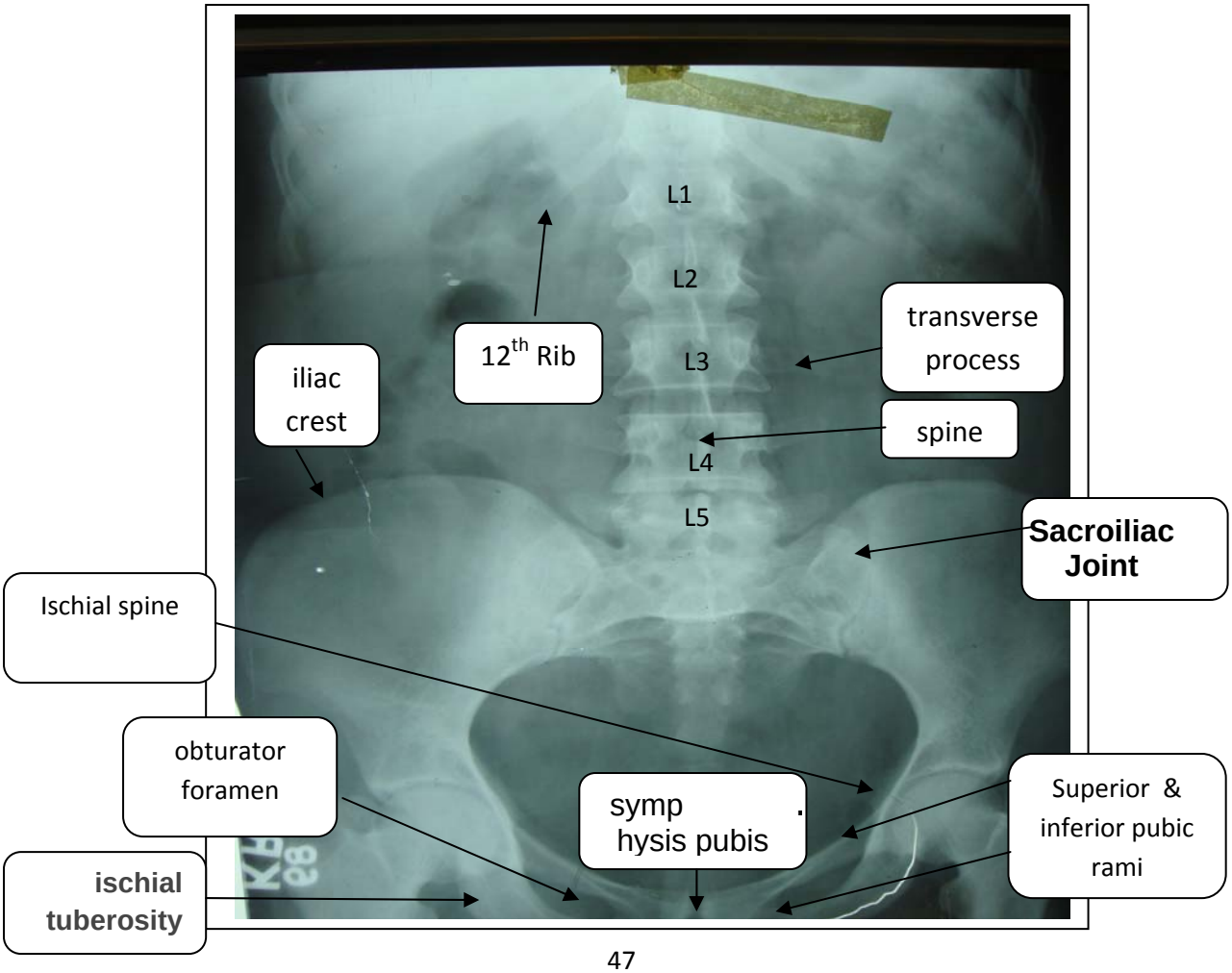


Nothing will be asked here .

Practical 15

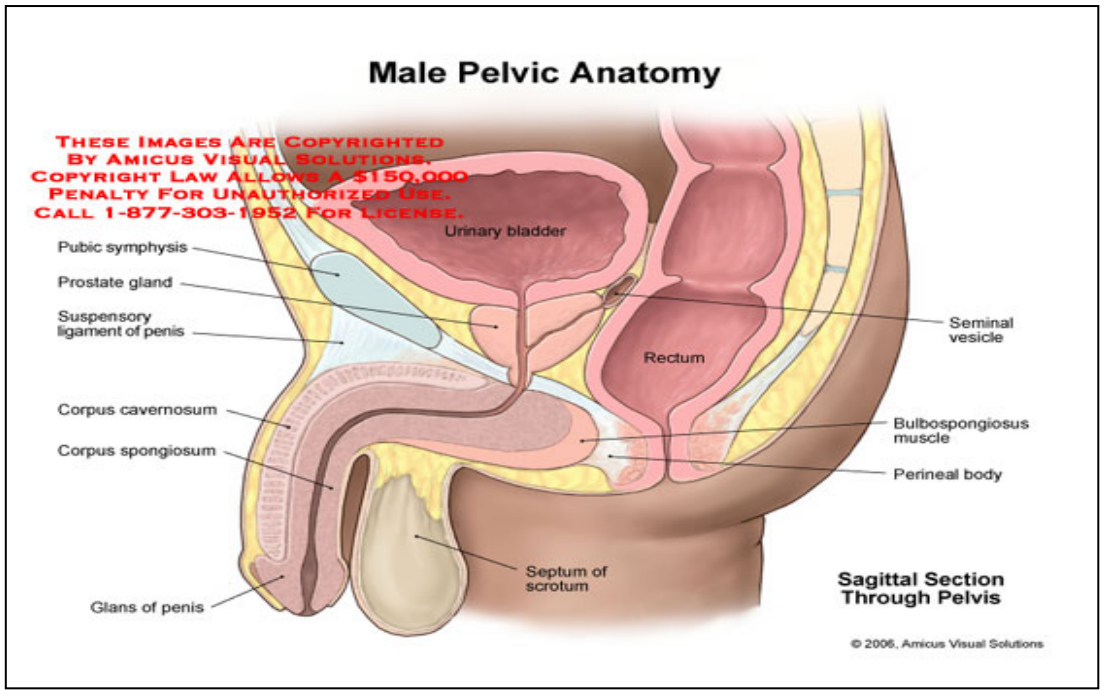
Uterus , Abdomen & pelvis x-rays





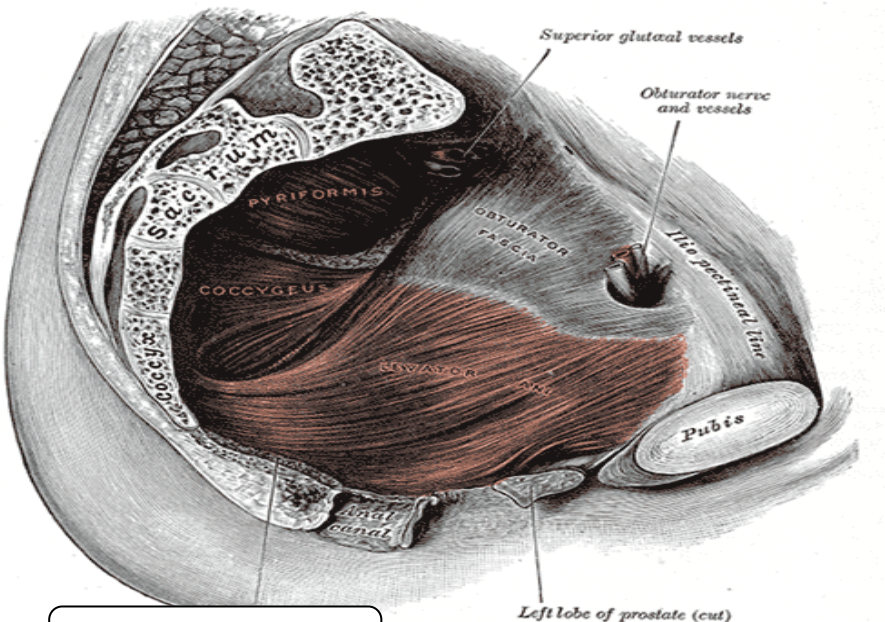
Practical 16

Perianal Body & Anococcygeal Body



you should identify the :

- Perianal Body .



Anococcygeal Body

- Anococcygeal Body .

You may be asked about *anterior longitudinal ligament* .