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Lord of the Pathoanatomical Descriptions

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Medicine
Pathology II

Quick note on what our teacher said she expects, she expects us to not just point at structures and say what they are. She wants us to describe what we see. So in her own word this isn't anatomy where you say what you see this is pathology where you describe what you see. If you see a lesion you need to describe it. She dosnt expect you to make Dr.House level diagnosis but at least attempt to make a differential diagnosis based on macroscopic appearences. So for example if you see lesions that look like grooves on the kidney then you can mention to her that pyelonephritis has the same feature. The following pages is just a general what to say for each organ assuming there is nothing pathological. So you can just memorise what's written here and then in the exam adjust you script according to what you see.

According to Molnar (The mean one?)
The Order of describing anything in pathology is

Shape -> Size -> Surface -> Consistency -> Colour -> Special structure

But he's gone now and I don't think the other
teachers care about this order anymore

At the end there's list of specific findings that I compiled from the Elearning website but I dont think we need it also there's no pictures of them so you will have to look them up

External Examination
The patient is a 169cm tall, nourished/Malnourished, middle aged male/female, deceased. The skin is intact, no scars, tattoos, signs or previous operation. Color of the skin is pale greyish white/yellowish. On the lower area of the back of the patient there is an irregularly shaped well defined confluent of livid-red/purple postmortum staining on the skin. Apply pressure to the area, if the staining becomes pale then this is due to the pooling of RBC inside vessel as a result of gravity. If it does not then it is due to imbibition of RBC outside of the vessels. Rigor mortis state can be determined by the inspection of joints located in the jaws and extremities. Now we must inspect the body in a "head to toe" fashion.
The head has regular shape and size. *characterise the hair (length)*. The eyelids are closed (or they can be open), The conjunctiva is pale-red. The sclera is white. The pupils are round, symmetrical, centrally positioned and moderately opened. The Iris is blue. The cornea is transparent and intact. The ears, nose and mouth are patent and free of blood/debris. The teeth are intact/missing. The neck is of regular size. Check for thyroid gland growth.The thorax is proportional. *Check for lumps around the breasts and axillary area*. The external limbs are intact. Abdomen level is measured with number of fingers above or below the thorax. Genitles are intact, Anus is free of blood. *Check for ulceration*.

This is probably not going to be in the exam for 2nd semester

Thoracic Complex

Starting position

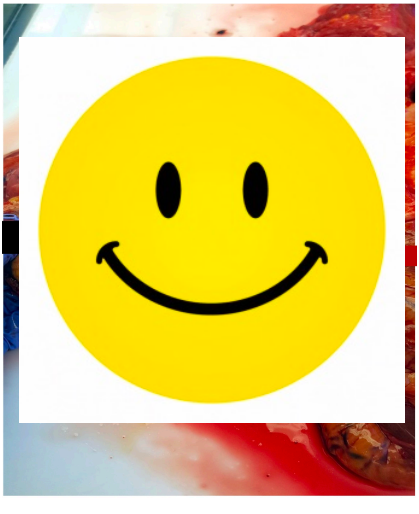
Put the tongue on the table, tongue "licking" the table. The tongue faces away from you. The base of heart will face towards you. The heart is on top of the lungs. Anterior surface is facing superior

Heart (Theory)

The heart is in the regular anatomical position with respects to the other organs. Its shape and size are regular (350g). The layers of the pericardium are smooth, shiny and glistening. The subepicardial adipose tissue at the apex of the right ventricle is 2mm and has a sharp border to myocardium. The Pericardial sac is free of fluid and thrombus

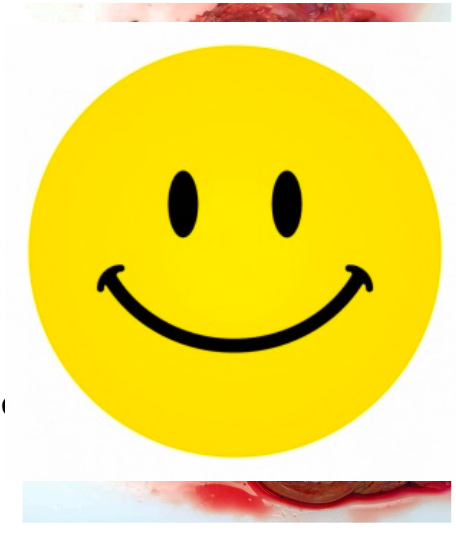
Heart

ricardial
ssue



Subepicardial adipose tissue

"Small dog tongue" Wall of right ventricle



Pulmonary artery

Right ventricl

Tricuspi

ıary Valve

Right atrium

e" Left ventricle

Inner surface of the left ventricle

Aortic Val

cuspid Valve

Continuation of heart

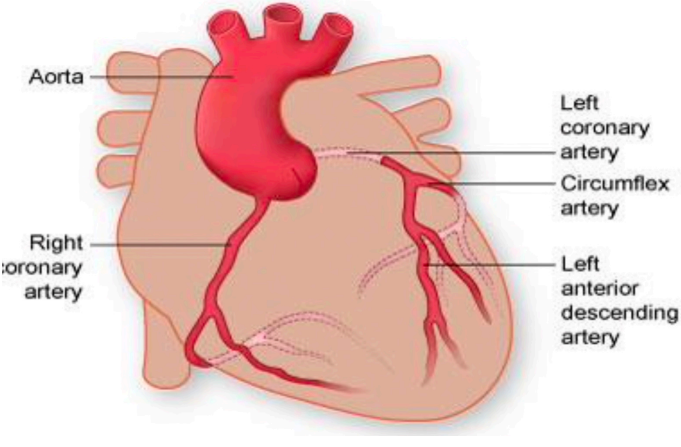
The volumes of the heart chambers are regular/dilated. The Left and right ventricle can be measured at the level of the aortic valve/pulmonary valve. Left ventricle should be 12-15mm and right should be 3-5mm. The Auricles should be free of thrombus. Valves should be intact, smooth and delicate. Endocardial layers are smooth and without deformations. Foramen ovale is membranously closed.

Left Atrium

oramen Ovale

ick your fingers in Left atrium
nd flip the heart to find the
reman ovale in the right atrium

Now must find the 3 coronary arteries. The Right circumflex. The Left Anterior Descending (LAD). Left Circumflex artery.



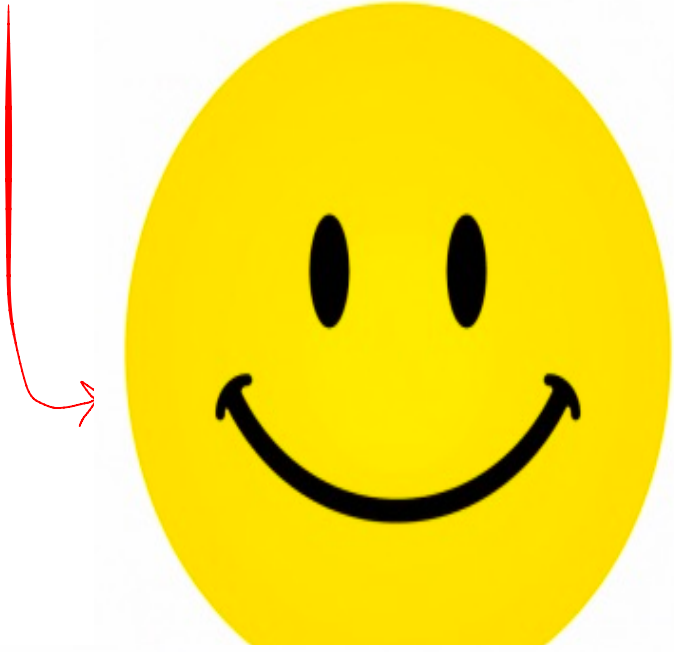
The Right coronary artery is ontop of the Right ventricular wall just under the auricle.

ey usually do the work for you, find the part of the art that they cut into multiple slits and you should pefully find a vessel there, you'll also be able to feel if patent or not.

Anterior Descending is at septum of heart

Left Circumflex is on top of left ventricular wall just under left auricle

The Coronary arteries are in their regular anatomical position. Their orifices are patent. The left circumflex is under left auricle and is horizontally positioned. LAD is on Septum. Right coronary is under right auricle. Their Shape is preserved. Their caliber is regular/ narrowed by plaque. Wall is regular/thickened or rigid. Lumen is patent and free of obstruction (Or not!). The innermost Endothelial layer is smooth. Myocardium is moderatly firm and dark brownish red. Myocardial fibrillar structure is preserved. Chordae tendineae are thin



How do you tell recent MI from Old MI macroscopically?

Recent MI has discolouration that is more brownish grey

OLD MI has whitish grey discolouration which is the fibrosis of once necrotic myocardial tissue

Describing Luminal surfaces

When talking about luminal surfaces a few things need to be talked about.Talk about If the lumen is preserved or not (Like it might've ruptured, or it might be dilated). Talk aboutThe thickness of the wall. Some luminal organs have an outer Serosal surface like most of the GI organs. Some have adventitial surfaces such as esophagus. Some have mucosal inner surfaces. Vessels have an intimal surface. If the outer surface is serosal then say its smooth shiny and glistening. Incase of mucosal surfaces it depends on organ like bladder mucosal surface is trabeculated except for trigone area and stomach has rugae mucosa. When talking about color of the inner surface of any lumen make an argument for or against inflammation when saying its color so if its red (dilated blood vessels) this is argument FOR inflammation. Talk about the caliber of the vessel and whether or not the lumen is occluded with blood or exudate or pus or if it's atherosclerotic in case of blood vessels.

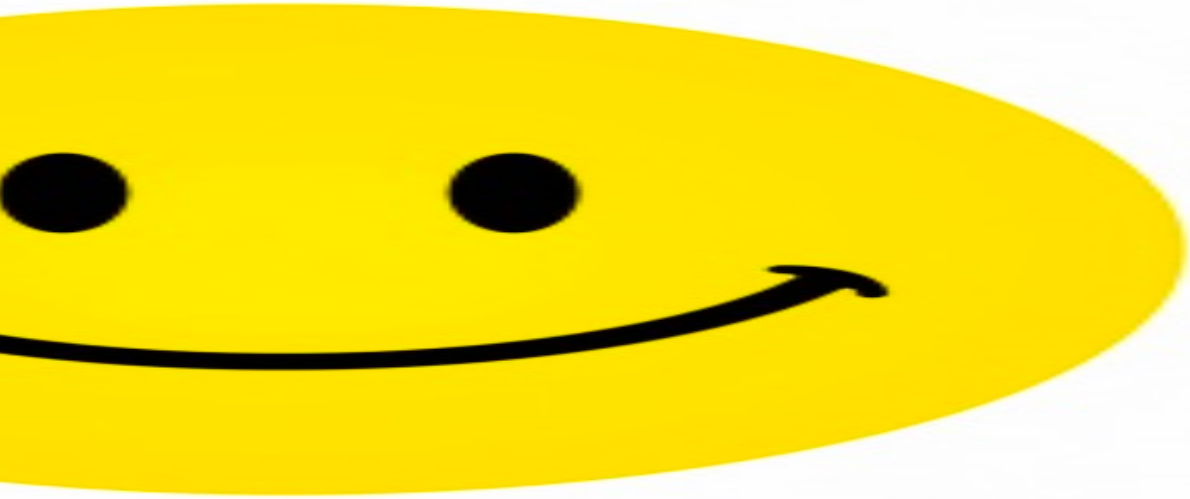
Aorta (Typically it will be already cut.)
Parts of the Aorta Includes an ascending portion, the arch and the descending portion. The branches are the right brachiocephalic which becomes right CCA and subclavian, Left CCA and left subclavian. If asked, the external and internal CA are distinguished by fact that External gives branches outside skull but internal doesn't.

Some Teacher might ask (Hopefully not ours) about asked about measurements. Aorta diameter is 5.5mm, its thickness is 2mm. The intimal surface is smooth and palish grey color. (Normally there would be a lot of atherosclerosis so expect to say that instead of saying the aorta is smooth and shiny)

Aorta

Branches of aorta

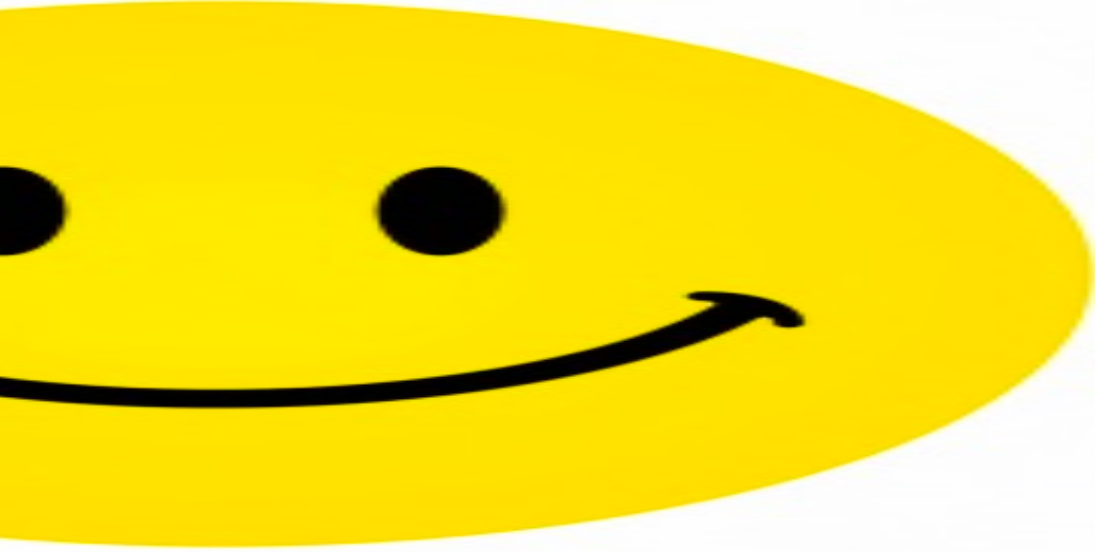
Flip the whole thing around so heart faces table underneath the other organs. Trachea + oesophagus faces you. Tongue not licking table, it's licking the air.



Oesophagus

Thoracic complex 2nd page

Tongue



Larynx

Thyroid gland

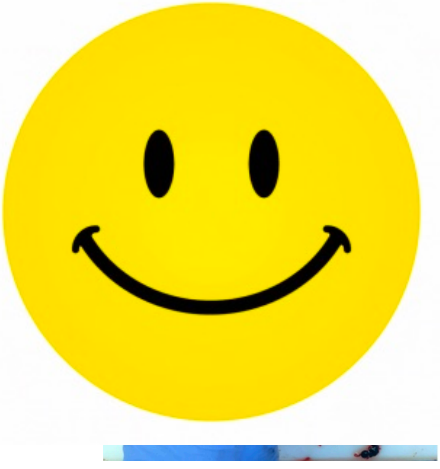
Tongue
It's shape and size are regular.
Consistency is soft/Moderatly firm.
Colour is reddish brown.
Linguil tonsils wouldve been on lateral aspect of back of tongue but are normally removed

Esophagus
Regular anatomical position, Shape and size is regular. Its luminal so we must characterise its thickness and mucosal surface. Its color is greyish white. Some people confuse the outer surface for a serosal surface. Do not make that mistake

Larynx
Regular anatomical position/ Bones and cartilage are present. Color is greyish pale

How to find thyroid gland

1. Pu
tong



2. Twist the
Neck
90 degrees

3. Twist the TONGUE down under the neck

Thyroid Gland
Is in its Regular anatomical position. Its Shape and size are regular. Its capsule is delicate. Its Consistency is moderately firm. Its Color is brownish red. On a freshly cut surface its glandular appearance is preserved.

What to do if you find lesion?
Describe it's Shape then size, measure its diameter with ruler. Then say its consistency and its color then say if it is easily movable.

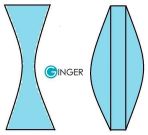
Lungs
Are in the Correct anatomical position. They are Regularly lobed, The right lung has 3 lobes and the left has 2. The Organ is "lung" shaped and symmetrical. 700g is its regular weight. Pleural surface is present and is smooth and shiny. The visceral plerual surfaces are slightly opaque with a moderate amount of anthrocotic pigment.Its Consistency is spongy because the air inside the lungs should be evenly spaced out in the pulmonary parenchyma. On a freshly cut surface there should be minimal fluid leakage. If fluid leakage is water-like then its transudate if its viscous then its classified as exudate. The Color of the lung is reddish in upper parts and greyish in lower parts. The Alveolar structure is preserved. The Trachea and bronchioles in regular anatomical position. (They are luminal so much be characterised appropriately) Ther caliber are regular. Their Wall thickness are regular. The mucosal surface is intact. Luminal content empty along bronchiole system (Now make an argument for or against Inflammation based on if you see many dilated vessels along the trachea). Color is pinkish white (or post mortal red colour). The Pulmonary artery is patent and its intima is smooth. No thrombotic occlusion. Hilar and mediastinal lymph nodes are present.

Trachea

Left pulmonary artery

To find right pulmonary artery, turn right lung
And under it is the artery

Concave vs. Convex



Abdominal Complex

Starting position
Starting position, grab descending aorta put it on top. The Convex surface of liver should face down. The Aorta and vena cava are on top. The Diaphragm facing to you and inferior mesenteric artery faces away. Anterior surface facing table. Posterior surface is up.

Infe

Diaphragm

Abdominal aorta
Its a Luminal structure so we must talk about the thickness of its walls, and the caliber of the vessel, say if the endothelial surface (Intimial) if smooth or not, the color of the surface and if the Lumen obstructed by atherosclerosis or if it is dilated. It's very likely that below the renal artery it will be dilated due to the naturally lower elastin content of this segment of the aorta

Example of script

The Caliber of the aorta is dilated. It's Thickness is 2mm. It's Colour is normally greyish yellow. Intimal surface is elastic and normally has plaque. There are 3 unpaired vessels: The Celliac trunk, The superior mesenteric artery and inferior mesenteric artery. And 2 paired arteries which are the renal arteries.

Vena Cava.
Normal anatomical position, distended, greyish white

Kidneys.

They are in their Normal anatomical position. They are Symetically sized and both weigh 300g each. Their Capsules are easily removable. Their outer Surfaces are smooth. The inner Cortex is 5mm and pale brown. Its surface contains no scars or cysts or masses. The Border between the cortex and medulla is well demarcated. The thickness of the medulla is regular. The Perirenal and peripelvic adipose tissue is preserved. Pelvises and ureters are in their normal anatomical position. Their caliber is regular and shape is regular. Wall thickness regular. The Blood content of the mucosal surface of ureters are regular. The Lumen is empty. (Side note: If the Medulla

Adrenal Gland.

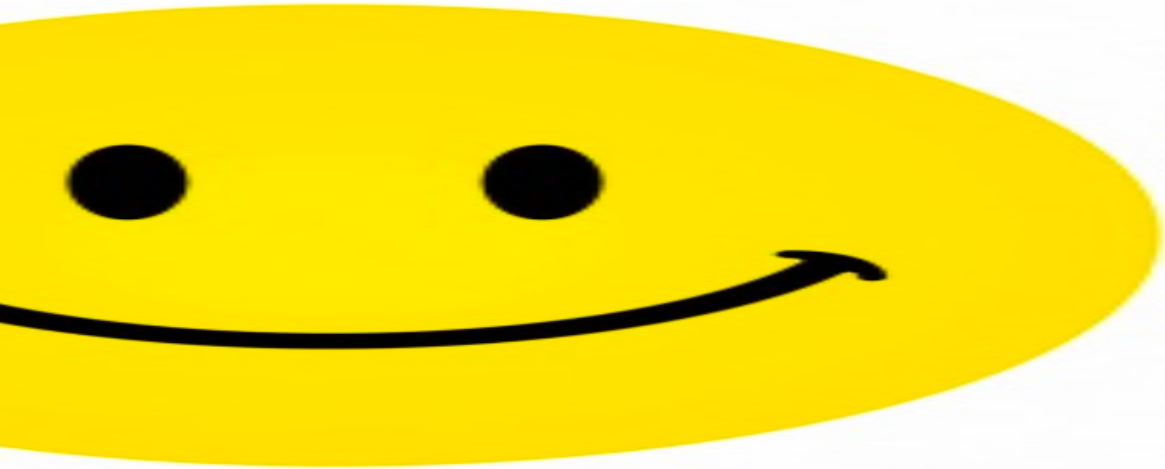
Finding the Adrenal Glands
(According to some old note)

Aorta is Black line
Renal artery is red line
Use your imagination (or finger) for white line
It should be in there somewhere

Abdominal complex second page
Grab left kidney and put it on top of right kidney

1.

2.



Now we can see..

Spleen

Pancreas

If you can't see pancreas then pull spleen close to you to expose it better

Adrenal Glands
They are found in the normal anatomical position. Their Shape and size are regular The consistency is moderately firm. The outer cortex and inner medulla are preserved and well demarcated from each other. *Then say if the cortex or medulla is thicker as to make a statement about if atrophy has occured*

Spleen
The spleen is In its normal anatomical position. It has a Usual shape and size. It regularly weighs 200g. Its Capsule is normal and wrinkles easily. Its Consistency is fleshy. *Scrap the spleen if lots of parenchyma come off then its indicative of sepsis.* The Color of the cortex is greyish white while the color medulla is redish brown. The Red and white pulp are preserved and visible.

Pancreas
The pancreas is in its Normal anatomical position. It has a Normal shape and size. Itb regularly weighs 80g. Its parenchyme has a consistency that is Moderately firm/lobular. Its Color is greyish yellow. Glandular pattern preserved. There is minimal/abundant fat in the tail.

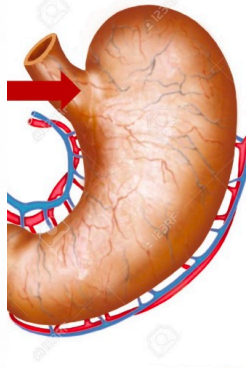
Pancreas

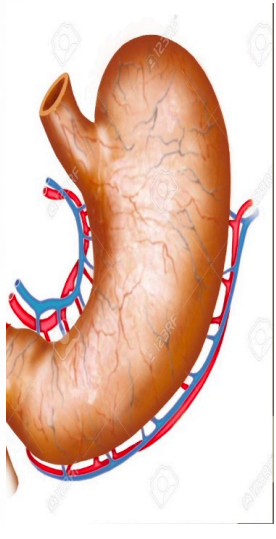
Spleen

Stomach (serosal surface. Outside surface)

Opened stomach, Mucosal surface

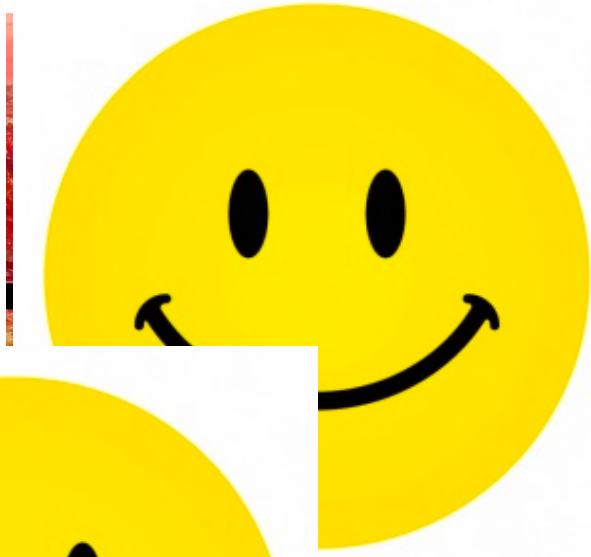
Cardia is the
Entrance to stomach
Its whiter then the
Rest of the mucosa of
the stomach





But the pyloric sphinter
Is normally elevated
It also marks the end of
the ~~world~~ Stomach and the
begining of the duodenum

From pyloric sphincter follow to duodenum
Which is greener and has more rugae



Stomach
Is in its Normal anator its Smaller curvature is
15cm.
The Thickness of wall y and does not contain
residuals of medicatio he Serosal surface is
smooth and glistening. s (Rugae) are
preserved. Consistency ylorus sphincter,
fundus present. The p

Gallbladder

Liver

Liver
Is in its Normal anatomical position. Its Shape and size is regular, weighing 1500g. The Glisson capsule is smooth in a freshly cut surface.The parenchyme is redish brown and firm with the usual/accentuated lobular pattern. Its lobular architecture is intact. The Portal structure has overall reddish brown appearance. Intrahepatic bile dicts and vessels are patent.

Gallbladder

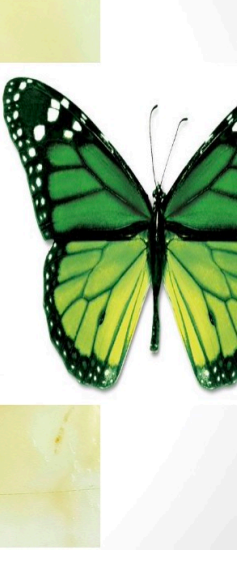
FIRST CHECK TO SEE IF ITS EVEN PRESENT IT MIGHT'VE BEEN SURGICALLY REMOVED! (Name of the surgery to remove it was called a Cholecystectomy. Evidence of surgery is clippers)

Gallbladder is present. Along with the cystic duct, they're both in their normal anatomical position. Its Regular shape and dilated size. Its Caliber is normal. It is 7cm in its greatest diameter. Its Thickness of wall is 1mm. Its Serosal and mucosal surface is intact. Color is bile tinted. Lumen is empty

The startin rds us.

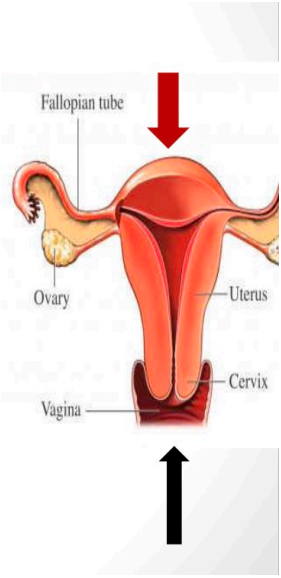
Red arrow = Ureters
Black arrow = bladder wall

In females they cut bladder to 4 parts



Red = ureters
Black = Bladder

Black = Vagina
Red = Uterus



Rectum
Is in its normal anatomical position (Luminal surface). Its Caliber is dilated. regular wall thickness. Mucosal surface is smooth. Color is greyish white but likely faces tinted. Mucosal rugae is preserved. Lumen is empty. No blood or fecal content. (Google says rectum has a serosal surface so say that its smooth and shiny)

Prostate
Is in its Normal anatomical position. Its Shape is normal. Size is enlarged (usually by benign prostate hyperplasia). It normally weighs 28g. Very likely (almost 100% that we will see hyperplasia in prostate or nodular growths. Remember to describe them). Its Consistency is moderately firm. Its Color is palish grey. Glandular pattern is preserved.

Urinary bladder
Is in its Normal anatomical position. The thickness of the wall varies between 2-4mm depending on contraction state. The Outer surface is serosal while Inner surface is mucosal. The Consistency is soft. The Inner mucosal surface is trabeculated except at the trigonal area where its smooth. The Color is greyish pale. The Inner orifice of ureters is symmetric and open. The Urethra is 2-4mm. The Lumen is regular and inner lining smooth and pale and patent.

Testes (Ignore because you're likely not gonna be asked this but it was on the paper she gave us)
Both are in scrotum covered by tunica layers. They are uniform oval in shape. Weigh 35g. Consistency is firm. Diameter is 4cm. on cut surface they're homogeneously brown. Fibrillar/tubular structure preserved

Uterus
Is in its Normal anatomical position. Its shape is regular. Its Size is 3cm x 6cm x 2.5cm. it regularly weighs 50g
Serosal surface of the uterus is smooth. The Ectocervis is 2.5cm in its maximum diameter, is smooth surfaced and greyish white in color. The Cervical canal is 2cm long with transparent fluid content. The Consistency of the uterus is moderately firm. The Thickness of myometrium is 1cm. The Endometrium is less than 1mm thick. The Cavity of uterus is empty. Leiomyoma is likely present so characterise it if you see it (benign hyperplasia of smooth muscle.)

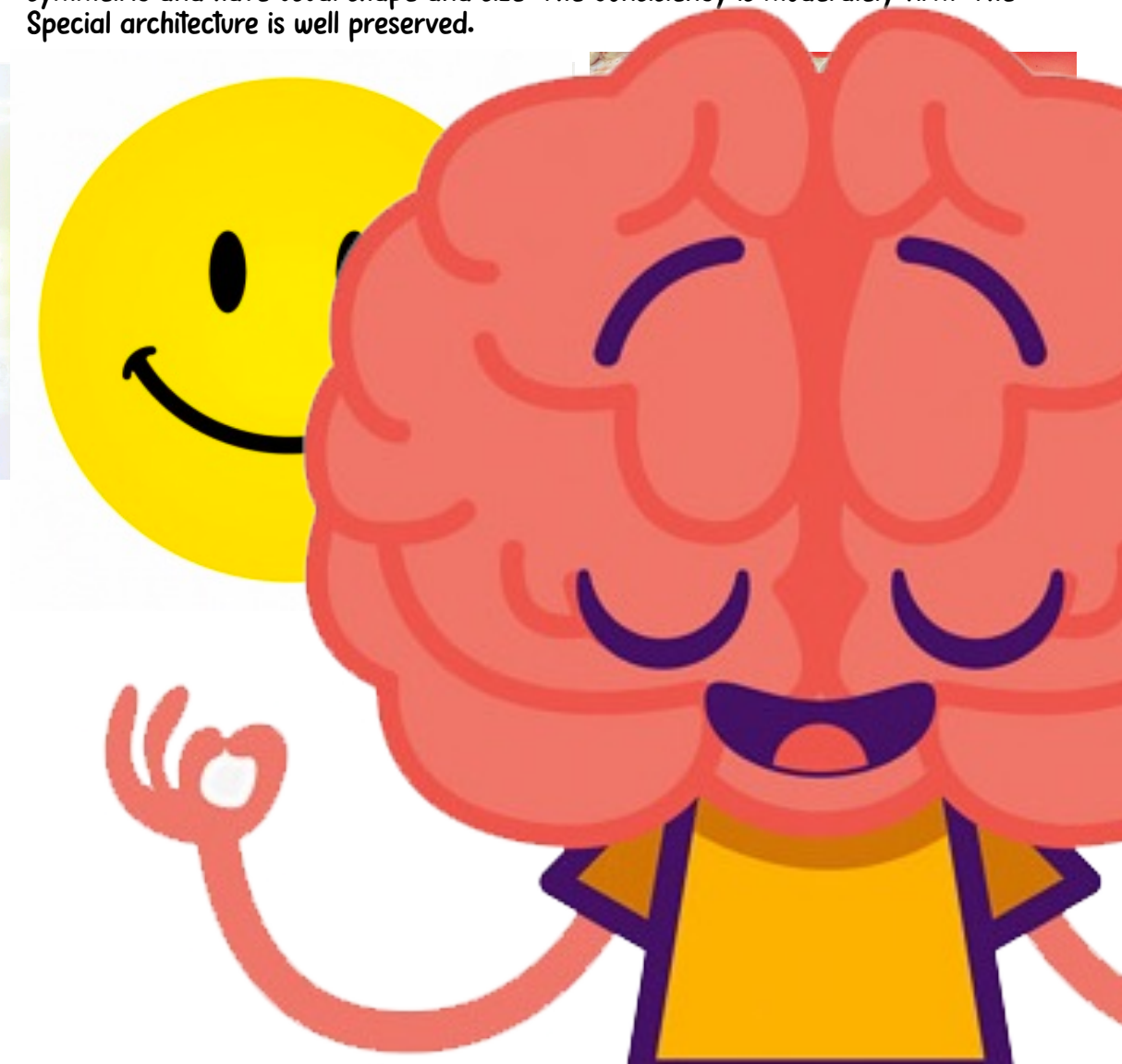
Black is fallopian tube
Red is ovary (With cyst)

Ovaries
are Regularly shaped.
maximum diameter. Tl
is grey. On a freshly c
is 5cm long. (Likely ati

5mm in their
nsistency. Their Color
it. The Fallopian tube

Brain

The Size is usual. The weight is 1350g in male but 1250g in female. The Hemispheres are symmetrical. The Gyrification is regular. The Thickness of gyri and depth of sulcus are regular. The Arachnoideal surface is transparent, membranous and contains usual blood content. The Consistency of brain is usually firm. The 3-4mm thick cortex and white matter is well demarcated. The Shape of ventricles is symmetrical and size is usual. The Basal nuclei is visible and preserved. The Cerebellum, pons and medulla obligate are symmetric and have usual shape and size. The Consistency is moderately firm. The Special architecture is well preserved.



Specific Findings Of the Heart

Decreased Size of the
left ventricle chamber
Due to aging

Increased left atrium chamber size
Due to aging

Dilated right ventricle and
atrium
Due to right sided heart failure
from chronic pulmonary
hypertension

Hypertrophic changes

Hypertrophy but normal or reduced
cavity diameter
Is due to pressure overload
resulting from hypertrophy or aortic
stenosis

Hypertrophy but WITH dilation
Is due volume overload or pressure and
Volume overload
Resulting from mitral aortic valve
insufficiency
(Walls of dilated hearts may be of
normal thickness while still being
markedly hypertrophied)

Hypertrophy with dilated chamber and mural thrombi in ventricles/atrial appendages with normal valves is a result of Dilated cardiomyopathy

Left ventricle hypertrophy where cavity becomes Slitlike is a result of hypertrophic cardiomyopathy

Firm myocardium with or without hypertrophy, biatrial dilation and variably dilated ventricles is a result of restrictive cardiomyopathy *(such as radiation fibrosis, amyloidosis or sarcoidosis)

Waxy rubbery myocardium with waxy endocardial deposits is a result of amyloidosis

Granulomata causing visible scares is a result of endothelial lesions or sarcoidosis

White, thickened endocardium and subendocardium is a result of endomyocardial fibrosis with and without eosinophilia

Left ventricular dilation and hypertrophy with greyish white myocardial scars, left ventricular aneurysms, patchy endocardial fibrous thickening, coronary artery atherosclerosis together is indicative of chronic ischemic heart disease

Marked thinning , yellow discolouration slight or focal dilation all in the right ventricle together is indicative of right ventricular cardiomyopathy

Variable hypertrophy, flabby myocardium, subtle mottling with pale foci or minute haemorrhages is indicative of myocarditis

Valcular heart Diseases

Atrioventricular valves with thickened distorted leaflets and short thickened chordae tendinae is indicative of Semilunar valves with thick distorted and fused cusps or rheumatic valvular heart disease

Heaped-up, irregular, calcified masses both within cusps and protruding into the sinuses of Valsalva, free margins of cusps generally uninvolved Is indicative of calcific aortic stenosis, degenerative type

Calcification beginning at free margins of cusps with bicuspid valve or valve with rudimentary third cusp is indicative of calcific aortic stenosis, congenital type

"Hooding" of the leaflet; rubbery thickening of edge of the leaflet; elongation, attenuation, or even rupture of chordae tendineae is indicative of mitral valve prolapse

Irregular, hard ring of calcification at the leaflet-myocardial connection is indicative of calcification of the mitral valve annulus

Vegetations

Small, friable, irregular, and often multiple vegetations along the lines of closure of a valve or on the chordae is indicative of acute rheumatic endocarditis

Large irregular masses overhanging free margins that extend to chordae and valve leaflets or cusps, with or without abscess, possible valve perforation is indicative of infective endocarditis

Small, bland, often single vegetations attached at the line of valve
closure is indicative of nonbacterial thrombotic (marantic) endocarditis

Small to medium-sized vegetations on atrioventricular valves; may be on both sides of valve leaflets is indicative of Libman-Sacks endocarditis

Myocardial Infarcts
Color changes with TIME

Less than 4 hours:

- no color change

4 to 12 hours:

- occasionally dark mottling

12 to 24 hours:

- dark mottling
- red-blue pallor

1 to 3days:

- mottling with yellow-tan center

3 to 7days:

- yellow-tan
- central softening
- hyperemic border

7 to 10 days:

- maximally yellow-tan
- progressive softening
- red-tan margins

10 to 14 days:

- pale red-gray borders

2 weeks to 2 months:

- replacement with firm gray-white scar

ATHEROSCLEROTIC CARDIOVASCULAR DISEASE

Yellow, flat spots and streaks:
Is indicative of fatty streaks

White to white-yellow plaques protruding into arterial lumen, may coalesce with neighboring plaques (sectioning reveals firm, white luminal surface with soft, white-yellow central region) is indicative of Atheroma

Atheromas with calcification, ulceration, hemorrhage
indicates complicated atheroma

Dilation of vessel, often containing thrombus indicates aneurysm

Small spherical dilation
Indicates berry aneurysm

Large spherical dilation indicates saccular aneurysm

Spindle-shaped dilation
indicates
fusiform aneurysm

Hematoma extending between
layers of artery indicates
arterial dissection

Pericardial Cavity Specific Findings

Effusions that is Clear or straw-colored (serous) with no adhesions
Indicates Congestive heart failure, hypoproteinemia or serous pericarditis

Pale red (serosanguineous)
Effusions with no adhesions
indicates blunt trauma

Frank blood (hemopericardium)
Effusions with no adhesions
Indicates cardiac rupture

Chylous (white with lipid droplets):
Effusions with no adhesions
indicates lymphatic obstruction
(Usually secondary to neoplasm)

Cholesterol (fluid with crystals, lipid droplets)
Effusions with no adhesions
indicates Myxedema or sometimes is just idiopathic

Effusions with adhesions (pericarditis)
Can be

Fibrinous

• rubbery fibrin ("bread and butter") adhesions attaching visceral

Fibrous

• dense adhesions following organization of fibrinous adhesions

Purulent

• reddened, granular serosal pericardial surfaces, creamy yellow fluid;

Adhesions without fluid indicates
Healed pericarditis may which yield dense fibrous adhesions with or without calcification or obliteration of pericardial space

Specific Finding of Lung Tumors

Gray, yellow, white masses, predominantly central (90% in segmental or larger bronchi), with or without cavitation:
Indicates squamous cell carcinoma

Gray or white peripheral masses, rarely with cavitation, though areas of necrosis may be present
Indicates adenocarcinoma

Single nodules or multiple diffuse or coalescing nodules with gelatinous or solid, gray-white regions resembling pneumonia:
Indicates bronchioloalveolar carcinoma

Soft, gray or tan, frequently necrotic masses, 50% central, 50% peripheral indicates large cell carcinoma

Grey to white, somewhat fleshy masses, generally arising centrally indicates neuroendocrine carcinoma, small cell type

Polypoid masses projecting into bronchial lumen:
Indicates neuroendocrine carcinoma, carcinoid type

Specific finding in NON Tumor Lungs

Heavy lungs that do not collapse with diffuse, firm, red, boggy parenchyma: indicates diffuse alveolar damage, exudative stage (numerous causes)

Heavy lungs that do not collapse with diffuse, firm, gray parenchyma with dilated, remodelled air spaces: indicates diffuse alveolar damage, organising stage

Slightly elevated, granular, firm gray-red to yellow, poorly demarcated areas (up to 4 cm) patchily distributed around airways; may be multilobar; often basilar: Indicates bronchopneumonia

Consolidation in large areas of lobe or even in entire lobe: indicates lobar pneumonia

Stages of lobar pneumonia:

Stage of congestion:

• lungs heavy and boggy

Red hepatization:

• lungs red, firm, airless

Gray hepatization:

• lungs gray-brown, dry, firm

Resolution:

• patchy return to normal-appearing lung parenchyma

Organization:

• areas of firm, gray-tan lung

Gray-white to yellow-white friable necrosis: indicates tuberculosis or fungal infection (e.g., coccidioidomycosis, blastomycosis, and histoplasmosis)

1- to 1.5-cm gray-white, subpleural caseous lesion typically in superior portion of lower lobe with associated gray-white caseous lesion in hilar lymph nodes indicates primary pulmonary tuberculosis

Small foci of caseous necrosis typically in apex of one or both lungs with similar lesions in regional lymph nodes: Indicates early secondary (reactivation) tuberculosis

Cavities lined by yellow-grey caseous material indicates progressive secondary tuberculosis (cavitary fibrocaseous tuberculosis)

Fibrocalcific scars, cavities in lung apices: indicates healed secondary tuberculosis

Patchy, firm parenchyma indicates interstitial lung diseases of various causes, sometimes with helpful diagnostic gross features (but these diseases usually require histologic diagnosis)

Black scars, 2-10 cm in diameter may be complicated coal workers' pneumoconiosis (progressive massive fibrosis)

Hard scars with central softening and cavitation, fibrotic lesions in hilar lymph nodes and pleura may be silicosis

Solid firm areas alternating with normal lung, subpleural cysts; worse in lower lobes may be usual interstitial pneumonia

Cysts of varying sizes surrounded by firm, gray-tan parenchyma resembling honeycombs indicates honeycomb lung due to end-stage interstitial fibrosis

Heavy, red-brown consolidation and blood in airways:
Indicates pulmonary hemorrhage syndromes

Dilation of air spaces:
indicates emphysema

Types of Emphysema

Centriacinar emphysema:
upper lobe involvement worse than lower lobe involvement

Panacinar emphysema:
lower lobe involvement worse than upper lobe involvement

Paraseptal (distal acinar) emphysema:
-subpleural, along lobular septa

Air space enlargements 1 cm or greater in diameter indicates bullae

Mucus secretions filling normal-sized airways indicates chronic bronchitis or asthma

Specific Finding in the Esophagus

Red, velvety mucosa at gastroesophageal junction:
Indicates Barrett esophagus

Loss of sharp demarcation at gastroesophageal junction:
Indicates reflux esophagitis

Gray-white to dark pseudomembranes:
Indicates candidiasis

Hyperemia, small ulcers:
Indicates viral (herpes simplex; cytomegalovirus) infection

Specific finding in Gallbadder

Black calculi, usually <1.5 cm in diameter:
Indicates pigment stones

Round or faceted, pale yellow calculi with granular surfaces; transection
reveals crystalline radiations:
Indicates cholesterol stones

Infiltrating or exophytic tumor:
Indicates adenocarcinoma

Specific Findings of the Stomach

Gastric Ulcer
Depressed lesion in mucosa
Large ulcer likely due to H. Pylori infection.

MALT lymphoma of stomach
The wall thickness is extremely increased
Diffuse lesions corresponds to enlarged ruggae

Black Pigments on the stomach
Black pigments in erosions and ulcerations is hematin which is oxidised Hb in formalin fixation

Specific Findings in Liver

Nodularity of capsular surface:
Indicates cirrhosis

Firmer than usual parenchyma but without nodularity:
Indicates fibrosis

Yellow-tan, greasy parenchyma:
Indicates fatty change

Yellow-tan parenchyma when fresh, green after fixation:
Indicates cholestasis

Firm nodules 3 cm or less in diameter
Indicates a variety of possible things
Such as
- micronodular cirrhosis due to alcoholic liver disease
- primary and secondary biliary cirrhosis
- glycogenosis type IV
- Indian childhood cirrhosis
- galactosemia and congestive (cardiac) cirrhosis

Yellowish small fiable fatty change
Emphasized lobular architecture indicates
Steatohepatitis

Firm nodules greater than 3 cm in diameter
also indicates a variety of different things

- macronodular cirrhosis due to alcoholic liver disease • viral hepatitis
- drug-induced injury
- hepatotoxins
- various hereditary diseases including

Multiple diffuse cysts
Indicates polycystic liver disease

Swollen, red-purple liver with tense capsule:
indicates hepatic vein obstruction (Budd-Chiari syndrome)

Well-demarcated, poorly encapsulated nodules, yellow or slightly lighter
than adjacent parenchyma, often with central, gray, stellate scar
Indicates focal nodular hyperplasia

Diffuse spherical nodules without parenchymal fibrosis:
Indicates nodular regenerative hyperplasia

Pale, yellow-tan or bile-stained nodules, generally subcapsular:
Indicates adenoma

Masses with central necrosis and umbilication:
Indicates metastatic neoplasms, generally carcinomas

Possible findings in Kidney
(Sireen Jabar notes)

Polycystic kidney disease adult type (AD bilateral)
Large kidneys. Capsule adhered to kidney surface. Surface and parenchyma destroyed and covered by multiple cysts. Cysts variable in diameter from 2 - 4cm. Some cysts filled with fluid. Some have ruptured. The cysts compress the parenchyme

Horseshoe kidney
Congenital defect
Two kidneys are fused at lower poles. pelvices and ureters separate.
Increased risk of UTI, Cancer and stones

Shock Kidney
Cortex is pale and medulla is dark
Medulla is more sensitive to hypoxia leading to corticomedullary shunt.

Chronic Pyelonephritis
Thin parenchyme
All kidney is scared, Inflamattion caused diffuse scarring in medulla which reached the pelivses and calyces leading to necrosis of papillae

Acute pyelonephritis
Surface is generally smooth but has diffuse raised abscesses showing mild granulation, these correspond to puss accumulation in abscesses
In cut surface there is striated cortex = Pus within tubules

Renal infarct
Triangular shaped white anemic infarction

End stage kidney infarction (due to stenosis of renal artery)
Atrophy of Kidney
Thin parenchyma
mild granular surface

Specific Finding in the Prostate

Soft, spongy gland enlargement,
small or coalescing abscesses:
Indicates acute prostatitis

Gland enlargement due to nodules of variable
color and consistency,
white to yellow or yellow-pink, and soft to firm
depending on amount of
fibrous tissue:
Indicates nodular hyperplasia

Single nodule or multifocal areas of gritty, firm
yellow or gray-white
tissue arising in peripheral zone, often difficult to
distinguish from
surrounding normal prostate:
Indicates adenocarcinoma

Specific Findings in the Uterus

Hyperemia, erosions of cervix
Indicates cervicitis

Small, soft, sessile, mucoid polyps:
Indicates endocervical and endometrial polyps

Fungating, ulcerating, infiltrating tumors of cervix:
Indicates predominately squamous cell carcinoma

Endometrial hemorrhage, nonmenstrual blood in uterine cavity
Can indicate
endometrial hemorrhage due to systemic shock (uterine apoplexy)
disseminated intravascular coagulation
coagulopathies

Red-blue to yellow-brown nodules implanted on serosal surfaces:
Indicates endometriosis; may cause severe scarring

Enlargement and irregular thickening of uterine wall:
Indicates adenomyosis

Sharply circumscribed, round, firm, gray-white masses that may be intramural, subserosal, or submucosal:
Indicates leiomyomas

Specific Findings in the Ovaries

Cysts, usually multiple, with gray, glistening lining and containing clear serous fluid: Indicates follicular cysts

Cysts lined by bright yellow luteal tissue:
Indicates luteal cysts

Large ovaries with numerous subcortical cysts (0.5 to 1.5 cm in diameter):
Indicates polycystic ovaries

Cystic masses with variable solid components
Can indicate a variety of different things such as
serous cystadenoma
serous cystadenocarcinoma
mucinous cystadenoma
mucinous cystadenocarcinoma

Specific Findings in the Brain

Softer than usual brain with flattened gyri, narrowed sulci, and compressed ventricles Indicates edema

Variable amount of cortical atrophy most pronounced in frontal, temporal, and parietal lobes and hydrocephalus ex vacuo: Indicates Alzheimer disease

Atrophy of substantia nigra with uneven pigment loss: Indicates Parkinson disease

Infarcts in the brain can be Hemorrhagic or NONhemorrhagic

NONHEMORRHAGIC INFARCTS

12-24 hours:

- soft
- pale

24-48 hours:

- swollen
- darker with indistinct junction between gray and white matter

2-10 days:

- area yellows
- boundaries become definite, generally triangular or wedge-shaped;
- progressive breakdown of tissue into gelatinous center and friable periphery

10 days to 3 weeks:

- liquefied tissue reverting to cavity lined by dark gray tissue

>3 weeks:

- formation of irregular cavity containing clear, pale yellow fluid

HEMORRHAGIC INFARCTS

Immediate:

• confluent, wedge-shaped, either diffusely red or red at the periphery with pale center interspersed with petechial hemorrhages

Evolution:

• similar to nonhemorrhagic infarcts except that there is resorption of hemorrhage and hemosiderin formation, which yield yellow-brown discoloration of cystic fluid and peripheral walls

Linear areas of cortical necrosis:
Indicates laminar and pseudolamellar necrosis due to global transient ischemia

Wedge-shaped infarcts, sickle-shaped band of necrosis over cerebral convexity just lateral to the interhemispheric fissure:
Indicates border zone (watershed) infarcts

Small (<15 mm) spaces in lenticular nucleus, thalamus, internal capsule, deep white matter, caudate nucleus, and pons:
Indicates lacunar infarcts

Cloudy or purulent cerebrospinal fluid, exudates on leptomeninges, engorged meningeal blood vessels:
Indicates acute meningitis

Discrete liquefactive lesions with surrounding fibrous response and edema, most commonly in frontal lobe, parietal lobe, and cerebellum:
Indicates brain abscess

Poorly defined, infiltrative gray masses, variable color and consistency, variable tissue necrosis, cystic degeneration, and hemorrhage:
Indicates diffuse astrocytoma and glioblastoma multiforme

Well-circumscribed, soft, gray to gray-pink gelatinous tumor that may have areas of hemorrhage, foci of calcification, and cysts
Indicates oligodendroglioma

Solid or papillary masses, variable color and consistency, most often arising near ventricles
Indicates ependymomas

Well-defined masses often at junction of gray and white matter
Indicates metastatic neoplasms

Somewhat defined, often multiple gray-white masses with central necrosis
may be lymphoma