

بِسْمِ اللَّهِ ٱلرَّحْمَنِ ٱلرَّحِيمِ

• General

<u>Regarding lesions that appear hyper-dense on CT-Scan, one is False:</u>

- a. Metallic clips
- b. Intra-venous contrast.
- c. Lipoma.
- d. Acute hemorrhage.
- e. Calcifications.

Answer: c

About MRI uses, which is the wrong match:

- a. MRI FLAIR: calcification
- b. MRV: cavernous sinus thrombosis
- c. MRI DWI: acute infarct
- d. MRI T1 contrasted: intra-axial tumor

Answer: a

All are relative contraindications of contrast except:

- a. Food allergy
- b. Penicillin allergy
- c. Asthma
- d. Previous contrast allergy
- e. Gluten sensitivity

Answer: d

Which is wrong:

- a. MRI as sensitive as CT for diagnosis of acute infarct
- b. DWI shows hyperintensity in acute infarction
- c. Haemorrhage appear heterogenous hyperintense in T2

Answer: a

Which is wrong about MRI:

- a. Has ionizing radiation but less than that of CT
- b. Contrast used in MRI is relatively safe
- c. takes more time to be done than CT

Answer: a

Most attenuation in:

- a. liver
- b. lung
- c. bone

Answer: c

Contrast CT for asthma patient, preparation by:

- a. oral prednisolone
- b. inhaler steroids
- c. IV hydrocortisone

Answer: a

Allergy to contrast material in all except:

- a. asthma
- b. atopy
- c. hypothyroid

Answer: c

About MRI with contrast, all are wrong except:

- a. contraindicated in renal failure grade III
- b. contraindicated in the first trimester if contrasted
- c. Not contraindicated in 2nd and 3rd trimester
- d. Contraindicated in children

Answer: b

True about the lung:

- a. High penetration and low attenuation
- b. High / High
- c. Low / Low
- d. Low / High
- e. No/No

Answer: a

<u>All of the following are true about US except:</u> a. does not give ionizing radiation b. better accuracy in obese c. can be used to visualize vessels

Answer: b

All are good conditions for Ultrasound except:

- a. Thin patient
- b. Children
- c. Recent endoscopy
- d. Full bladder

Answer: c

Which is wrong:

- Stir sequence is T1 minus fat signal

Best modality for calcification is:

- CT

Contraindication for MRI:

- Ferromagnetic substance inside the body

High penetration and low attenuation:

- Lung parenchyma

All are advantages of MRI over CT except:

- Used for detection of intraorbital metallic foreign body

Regarding MRI, one is wrong:

- Indicated to make sure about position of pacemaker
- Brain CT and MRI

<u>Concerning Radiological signs of diffuse brain edema in post-traumatic</u> <u>patients, one is False:</u>

- a. Small size ventricles.
- b. Pseudo-sub-arachnoid sign.
- c. Diffuse brain hypo-density.
- d. Effacement of basal cistern
- e. Loss of gray-white matter differentiation

Answer: b

Concerning subdural hematoma, one is false:

- a. Treated with Bur hole
- b. Appears isodense in chronic stage
- c. More common in old age

d. Of different ages in children raise the possibility of non-accedental injury

e. Crosses sutures

Answer: b

Wrong match:

- a. Semilunar hypodense and acute subdural haemorrhage
- b. Biconvex hyperdense and epidural haemorrhage

Answer: a

What is wrong:

- a. Extra-axial tumors have wide meningeal attachment
- b. Failure to enhance on T1 contrasted imaging rule out intra-axial tumor

Answer: b

All are seen on CT scan in diffuse edema except:

- a. Subarachnoid haemorrhage
- b. Loss of grey-white differentiation
- c. Small ventricles
- d. Effacement of sulci and basement cisterna
- e. Brain is diffusely hypodense on CT

Answer: a

The best for diagnosis of brain calcification:

- a. MRI
- b. CT

Answer: b

The best to diagnose cavernous sinus thrombosis:

- a. MRI
- b. MRV
- c. CT
- d. Doppler U/S

Answer: b

Wrong about acute extradural hematoma:

- a. biconvex hypodense
- b. usually traumatic
- c. midline shift
- d. brain pressure

Answer: a

<u>A hyperdensity can be seen normally in brain CT in all of the following except:</u>

- a. Pituitary
- b. Tentorium
- c. Carotid artery
- d. Falx cerebri
- e. Eye lens

Answer: a

Wrong about MRI sequences:

- white matter is hyperintense compared to cortex in FLAIR

True about cytotoxic edema:

- hyperintense in diffusion weighted sequences

Wrong about meningioma:

- mostly presents as an intra-axial lesion

Wrong about intracranial hemorrhage:

- intraventricular hemorrhage has a good prognosis

Which is true:

- acute ischemia appears hyperintense on DWI due to cytotoxic edema

Biconvex lesion:

- acute epidural hematoma

Wrong about tumor mass:

- cytotoxic edema

Wrong match:

- infarction with vasogenic edema



Wrong about abdominal imaging:

- a. Free gas can normally be seen 7 days after laparotomy
- b. Free gas in bile tract can indicate a fistula
- c. Most common cause of pathological pneumoperitoneum is spontaneous rupture of a peptic ulcer

d. Diameter of normal colon should be less than 5 cm

Answer: d

Wrong About contrasted GI imaging:

- a. Water contrast has better mucosal lining than barium contrast
- b. Water soluble low osmolality is the ideal contrast
- c. Barium is contraindicated in perforation

Answer: a

Which is false about Crohn's disease:

- a. skip lesions
- b. most common presentation in terminal ileum
- c. most common string sign in terminal ileum
- d. cause mesenteric adenopathy
- e. age of onset is 15-30

Answer: d

Which is false about sigmoid volvulus:

- a. coffee bean sign
- b. lateral border overlap liver shadow
- c. apex under right hemidiaphragm
- d. chronic volvulus is associated with shouldering-edges

Answer: d

Liver hemangioma false:

- a. hypointense signal on T2
- b. hyperechoic signal on U/S
- c. most common benign liver tumor
- d. mostly eccentric and subcapsular

Answer: a

Diverticulosis, which is wrong:

- a. Patients presenting with obstruction need surgery
- b. Fistula commonly to vagina and bladder
- c. 20% develop diverticulitis
- d. Usually with pain and abdominal tenderness

Answer: d

Barium contrast is absolutely contraindicated in:

- a. Tracheoesophageal fistula
- b. Perforated Duodenal ulcer
- c. Colon CA

Answer: b

A patient came with urea 10 XNL, all are initial workup except:

- a. US
- b. IVP
- c. Plain abdomen
- d. Hand radiography

Answer: d

Striated kidney in IVU in all Except:

- a. polycystic kidney
- b. medullary spongiosis
- c. renal vein thrombosis
- d. renal artery stenosis
- e. acute nephritis

Answer: d

The most specific test to detect gallstones is:

- a. ERCP
- b. OCG

c. US

Answer: c

Regarding Ba enema, one is wrong:

- a. Contraindicated in colon perforation
- b. Ba sulfate is injected per-rectum
- c. Contraindicated in intestinal obstruction

Answer: c

-all are true according to slides-

Regarding diaphragmatic hernia, one is wrong:

- a. Morgagni hernia is more common on the rt side
- b. Bochdalek hernia is more common on the rt side
- c. Sliding hernia is more common than rolling type
- d. Ba swallow can identify the hernia
- d. Plain X-ray can identify the hernia

Answer: b

All are causes of false positives except:

- a. Poor hydration
- b. Bladder outflow obstruction
- c. Poor renal function
- d. Huge collecting system
- e. Non -fasting state

Answer: e

All true regarding renal study except:

- a. DTPA extraction efficiency of 40 percent
- b. DMSA coefficient extraction is 10%
- c. DTPA represents filtration
- d. MAG3 represents secretion
- e. DMSA is used for calyceal system evaluation

Answer: a

Wrong about Ulcerative colitis:

- a. Strictures are common
- b. Slightly More common in males

- c. 95% in the rectosigmoid area
- d. radiation ileitis is a differential diagnosis
- e. has malignant potential in many years

Answer: a

Not true about barium enema:

- a. Safe to use in perforation
- b. Water insoluble material
- c. causes constipation and impaction
- d. cheap

Answer: a

What is wrong:

- Mucosal folds increase in number as we go towards ileum

In abdomen Ct, one is wrong:

Per pancreatic hypodense area is pancreatitis

In ulcerative colitis barium enema, all true except:

- Normal segment between two affected areas

Duodenal ulcer, all true except:

- Double contrast is superior to endoscopy in dx
- Chest x-ray

Wrong about CXR:

- a. Typically its PA view with full expiratory effort
- b. The distance between the machine and film is 150-200 cm
- c. Heart size is exaggerated on AP view

Answer: a

Wrong About silhouetting:

- a. If middle lobe pneumonia, rt heart border is erased.
- b. If middle lobe pneumonia, lower surface will be horizontal fissure
- c. If left upper pneumonia, left heart border will be silhouetted.

Answer: b

Wrong about chest imaging:

- a. CXR can view nodules <5mm
- b. Mediastinal window is better than lung window in viewing heart
- c. Spiral CT is the imaging modality of choice for PE

Answer: a

Wrong About airway disease:

- a. Pneumothorax causes ipsilateral flattening of the diaphragm
- b. Large pneumothorax can obliterate the costophrenic angle
- c. CT is better in detecting air bronchogram than CXR

d. CT can detect small amount of air in pleura

Answer: b

Wrong about air bronchogram:

- a. common in pulmonary edema
- b. common in pneumonia
- c. associated with a lesion
- d. normally visible in 10% of adults

Answer: d

About chest x-ray which is wrong:

- a. Right heart border is in contact with right middle lobe
- b. Upper most part of the right heart border is in contact with upper lobe
- c. aortic notch is in posterior mediastinum
- d. left heart border is in contact with left lower lobe

Answer: d

About chest x-ray which is wrong:

- a. PA and lateral views are the routine
- b. on lateral view, you see all right hemidiaphragm
- c. On lateral view, you can't see the anterior part of left hemidiaphragm

Answer: b

<u>Collapse of the right upper lobe of the lung causes all except:</u>

a. Rt hilum upward

- b. Rt horizontal fissure upward
- c. Rt bronchus to the contralateral side

Answer: c

Tension pneumothorax, wrong:

- a. pleural line on xray
- b. absent lung making ipsilateral
- c. horizontal hemidiaphragm ipsilateral
- d. mediastinum shift to the ipsilateral side

Answer: d

Wrong about CXR:

- a. In AP cardiac size is exaggerated
- b. easy to do in 5 years old child

Answer: b

Collapse of right upper lobe, which is wrong:

- a. Right hilum is higher
- b. Right hemidiaphragm is higher
- c. Shift of mediastinum to the left

Answer: c

Wrong about lobar pneumonia:

- a. Iower lobe obliterate diaphragm
- b. upper left lobe may obliterate left heart border
- c. middle right lobe obliterate right heart border
- d. inferior left lobe obliterates descending aorta
- e. right middle lobe pneumonia is bounded inferiorly by horizontal fissure

Answer: e

All are radiological signs that favors cancer of the bronchus except:

- a. Peripheral calcified nodule
- b. Lymphangitis carcinomatosis
- c. Hilar LN

Answer: a

All will cause diffuse nodular chest x-ray except:

- a. Sarcoidosis
- b. Wegener's

Answer: a

In chest X-ray, one is wrong:

- a. Right dome of diaphragm is higher than left
- b. Minor fissure appears in anterior Part of 4th space
- c. PA X-ray is better than AP
- d. Right hilum is higher than the left

Answer: d

In supine position X-ray which is wrong:

- a. Heart size is exaggerated
- b. Diaphragm will be higher
- c. Prominent upper zone vessels
- d. Pleural fluid will accumulate posteriorly and give a decreased density
- to the hemithorax

e. A pneumothorax will lie anteriorly and be difficult to detect

Answer: d

Wrong about hilum in chest X-ray:

a. The left hilum is higher than the right because left main bronchus arches over left pulmonary artery

- b. normally symmetrical
- c. caused by pulmonary arteries and veins
- d. prominent in pulmonary hypertension
- e. can be pulled upwards or downwards by collapse or fibrosis

Answer: a

<u>All cause bilateral small lung except:</u>

- a. consolidation
- b. bowel distension
- c. suboptimal inspiration
- d. obesity

Answer: a

All of the following cause a radiolucent hemithorax except:

- a. PE
- b. small lung
- c. mastectomy
- d. emphysema
- e. rotation of patient

Answer: e

<u>All the following are signs of collapse due to an opacification on the left</u> <u>upper lung border except:</u>

- a. disappearance of the heart border and the upper lobe on the left side
- b. collapse of the lung to the left side
- c. elevation of the left hemidiaphragm
- d. obliteration of aorta
- e. ill-defined opacity in the left upper and middle zones

Answer: d

Wrong about pleural effusion:

- visible pleural edge

Lowest attenuation and highest penetrance in chest X ray in:

- lung alveoli

Wrong about pleural effusion:

- usually affect the costophrenic angles and do not affect the hemidiaphragm

Wrong about chest x-ray:

- hila contain blood vessels and lymph nodes

Wrong about middle lobe collapse:

- Lung volume is unchanged

Pneumoperitoneum, which is wrong:

- Best modality is standing upright x-ray

• Mammography

Recent mammogram showed an oval well-defined mass that is unchanged since 2016. The most appropriate Bl-RADS classification is:

- a. Bl-RADS 2
- b. BI-RADS 3
- c. Bl-RADS 5
- d. BI-RADS 1
- e. BI-RADS 4

Answer: a

The most likely mammographic appearance of a biopsy proven fibroadenoma is:

- a. Oval well defined mass
- b. Cluster of pleomorphic microcalcifications
- C. Area of architectural distortion
- d. Microlobulated mass
- e. An ill-defined rounded mass

Answer: a

<u>A mammogram of a woman who had previous breast</u> <u>surgery and radiotherapy showed calcifications at operative</u> <u>site that were assigned Bl-RADS2. What was the morphology</u> <u>of these calcifications?</u>

- a. Popcorn calcifications
- b. Fine pleomorphic microcalcifications
- c. Egg shell calcifications
- d. Rod like calcifications
- e. Fine linear microcalcifications

Answer: c

<u>A women diagnosed with invasive ductal carcinoma, did mammogram after</u> <u>chemotherapy, revealed a round well-defined mass, what is the BIRADS:</u>

- a. 2
- b. 3
- c. 4
- d. 5
- e. 6

Answer: e

A 25 year old woman did a mammogram, which revealed a fatty breast, an oval well defined isodense mass, what is the ACR and BIRADS:

- a. ACR 1 BIRADS 3
- b. ACR 1 BIRADS 2
- c. ACR 2 BIRADS 2
- d. ACR 1 BIRADS 1
- e. ACR 4 BIRADS 2

Answer: a

If you found 10 mm mass on mammogram, which of the following is a feature of malignancy:

- a. Central lucency
- b. Peripheral part of fat density
- c. Clustered coarse calcifications
- d. Irregular posterior border that appears well-defined on magnification view
- e. Previous normal mammogram

Answer: c

Calcified ring on mammogram:

- a. a cyst
- b. fat necrosis
- c. fibroadenoma

Answer: a

<u>26y/o lady presented with suspected breast mass the best imaging:</u>

- a. Mammogram
- b. U/S

Answer: b

All are asymmetrical breast tissue on mammogram except:

- a. fibroma
- b. lipoma
- c. breast parenchyma

Answer: c

All good modalities for detection of breast lesions except:

- a. MRI
- b. US
- c. CT

Answer: c

All are against malignancy except:

- a. History of extramammary malignancy
- b. fat containing
- c. multiple
- d. Total lucency
- e. halo

Answer: a

Woman with history of trauma to breast, few weeks later she came to clinic, what you suspect on mammogram?

- Egg-shell appearance

<u>Well defined breast lesion, coarse calcification >> benign</u> <u>description. What is BIRAD score?</u>

- BIRADS 2

Malignant calcifications:

- Linear / branching

<u>In mammogram, needle shaped calcification that are thick and segmental</u> <u>pointing to the nipple, extensive, bilateral, indicates:</u>

- Plasma cell mastitis

Not a cause of round lesion on mammogram:

- carcinoma

<u>A feature with the most malignant potential in mammography:</u>

- notch and lobar edge

<u>A round, well-defined, radiolucent mass with enlarged axillary lymph nodes</u> with a fatty hila, BiRADS category:

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• Interventional radiology

Which one of the following is true?

a. Conventional venography is the modality of choice in imaging upper limb DVT

b. Digital subtraction angiography is used in interventional radiology for visualization of blood vessels, other radio-opaque structures such as bones are eliminated.

C. Hypo-vascular tumors benefit more from embolization due to low risk of bleeding

d. MRI has a major role in interventional radiology due to the lack of ionizing radiation

e. Percutaneous nephrostomy is contraindicated in cases of pyelonephritis

Answer: b

<u>The most sensitive sonographic/doppler sign to detect acute venous</u> <u>thrombosis is:</u>

- a. Presence of collaterals
- b. Non-compressibility
- C. Skin changes and cellulitis
- d. Small caliber of the vein
- e. Increased flow by doppler exam

Answer: b

All are indications for IVC filter except:

- a. all trauma patients prophylactically
- b. Contraindication for anticoagulant
- c. VTE while on anticoagulant
- d. Bleeding while on anticoagulant

Answer: a

Wrong about abdominal aneurysms:

- a. AP diameter of more than >3cm in abdominal aorta is considered an aneurysm
- b. Intimal flap is a sign of dissection
- c. Wall irregularity is a sign of dissection
- d. Most common site is infrarenal

Answer: c

All are required in U/S guided liver biopsy except:

- a. General anaesthesia
- b. IV lines
- c. Consent
- d. Coagulation studies
- e. Patient fasting

Answer: a

Which is false about angiogram:

- a. Femoral aneurysm is a relative contraindication to cath
- b. Left femoral artery is technically more accessible
- c. Most frequently used to reach aorta is femoral artery
- d. If pathology was on one side then access should be made through the other side

Answer: b

Wrong about femoral catheterization:

- a. Femoral artery is medial to femur
- b. Easily accessible
- c. Low complication

Answer: a

Endothelial repair which is wrong:

- a. decreased hospital stay
- b. Generalized Anesthesia in all patients

Answer: b

Wrong about angioplasty prognosis:

- a. Better in stenosis than occlusion
- b. Better in distal vessels
- c. Better in larger vessels

Answer: b

Wrong about IVC filter: a. May lead to thrombosis b. Position is supra renal

Answer: b

All are true regarding arterial occlusive diseases except:

- a. Thrombi have meniscal edge
- b. 90 % due to atherosclerosis
- c. Embolic mostly cardiac in origin
- d. Embolism stick at bifurcation
- e. thrombotic are less dangerous than embolic

Answer: a

Best site to place for puncture in angiography for visualizing brain <u>circulation</u>:

- a. Directly in carotid
- b. Axillary artery
- c. Femoral artery
- d. Brachial artery
- e. Radial artery

Answer: c

All are true about abdominal aortic aneurysm except:

- a. 90% are suprarenal
- b. 66% extend to common iliac
- c. can be visualized by ultrasound with 98% size accuracy
- d. >3 cm
- e. can rupture retroperitoneally, especially to the left

Answer: a

All are indications to do an arteriogram except:

- a. VTE
- b. blood vessel disease
- c. arterial supply of tumor
- d. define anatomy before surgery
- e. detect source of GI bleeding

Answer: a

US-guided biopsy is not chosen over CT guidance in:

- lung biopsy

Wrong about interventional radiology:

- agitated patient is suitable for a digital subtraction angiography

<u>A patient has reversible, large ischemia in the lateral wall of his heart on</u> perfusion study, with normal treadmill ECG, next step:

- perform catheterization

• MSK

<u>Regarding classical features of non-ossifying fibroma, one is false;</u> <u>Select one:</u>

- a. Split cortex sign
- b. Well defined
- C. Benign
- d. Cortical destruction
- e. Peripheral sclerosis

Answer: d

One of these lesions is intramedullary:

- a. chondromyyxoid fibroma
- b. enchondroma
- c. osteoid osteoma
- d. GCT

Answer: b

Wrong About seronegative arthritis imaging:

- a. Trolley track sign is due to ossification of the posterior interspinous ligament
- b. Sclerosis of the vertebral corner is an early sign

Answer: a

<u>All are radiological signs of malignant bone disease except:</u>

- a. Wide sclerotic rim
- b. Endosteal cortical reaction
- c. Soft tissue extension

d. Wide transition zone

e. Periosteal reaction

Answer: a

Inflammatory arthritis which is wrong:

- a. erosions
- b. weight bearing joints
- c. uniform joint space narrowing

Answer: b

Ewing sarcoma, which is wrong:

- a. Lesion is permeative destructive
- b. Periosteal reaction
- c. Endocortical reaction
- d. Easily differentiated from acute osteomyelitis by X-ray
- e. diaphyseal

Answer: d

True about gout:

- a. punched out erosions
- b. early joint narrowing

Answer: a

Acute osteomyelitis all true except:

- a. expands bone
- b. rarefaction
- c. reactive bone thickening

Answer: c

Super scan not in:

- a. pulmonary osteodystrophy
- b. Osteomalacia
- c. Hyperparathyroidism

Answer: a

All will cause opacities on skull x-ray except:

- a. Histiocytosis
- b. Irradiation
- c. Multiple myeloma
- d. Mets
- e. Spherocytosis

Answer: c

Not in seronegative osteoarthritis:

- a. Distal pattern
- b. non Erosive
- c. uniform joint space loss
- d. osteopenia
- e. proliferation

Answer: b

Not found in ankylosing spondylitis:

- a. Bamboo spine
- b. Shiny corner sign
- c. Rugger Jersey
- d. Dagger sign
- e. trolley track sign

Answer: c

Not found in hyperparathyroidism:

- a. bamboo spine
- b. subperiosteal bone resorption
- c. salt-pepper skull appearance
- d. Rugger Jersey
- e. calcification in soft tissue

Answer: a

Wrong about septic arthritis:

- symmetrical bilateral

Wrong about osteosarcoma:

- diaphyseal

Wrong about non ossifying fibroma:

- majority need surgery

Not a sign on inflammatory arthritis:

- periarticular osteosclerosis AND affects weight-bearing joints

Tumor of epiphysis:

- Giant cell tumor

Three phase bone scan not used in: (no answers)

• Nuclear medicine

A male patient with non Hodgkin lymphoma in the mediastinum (6 cm), underwent chemotherapy, after that he did a PET scan that showed a 3 cm mass with no uptake, what's the next step of management:

- a. Give more chemotherapy
- b. Biopsy
- c. Follow up normally with no therapy
- d. Repeat PET scan within 1 week

Answer: c

All are indications for myocardial scintigraphy except:

- a. A patient with typical chest pain and a negative stress ECG
- b. A patient with symptomatic CAD and diabetes
- c. A patient showed 80% stenosis of LAD on cath angiography
- d. Done to patient with CAD before surgery

Answer: c

<u>A man with high T3, T4, low TSH, did uptake that showed <4% uptake, what's the next step of management:</u>

a. Treat with radioactive iodine

b. Treat hyperthyroid symptoms and then follow up in the next 2-3 months

c. Give anti-thyroid meds and then after 2-3 months start him on thyroxine for life

Answer: b

Increased iodine uptake:

- a. Graves
- b. Diffuse thyroiditis
- c. Recent contrast

Answer: a

Wrong about 99mTc:

- a. A half-life of 6 hours
- b. Cheap
- c. m: maximum
- d. energy 140 kev

Answer: c

Wrong about radionuclear:

- a. Less than 10 rad usually no effect or asymptomatic effect
- b. radionuclear use 0.46 rad
- c. any small radiation can cause malignancies

Answer: c -According to slides, no true answer-

Coronary flow reserve following exercise:

- a. 0.5
- b. 4
- c. 5
- d. 2.5
- e. 1.5

Answer: d

Cardiac perfusion scan which is wrong:

- a. Higher sensitivity than ECG stress test
- b. Decrease basal septum perfusion indicates infarction

Answer: b

Bone scan wrong indication:

a. Lung

- b. Brain
- c. Breast
- d. Multiple myeloma
- e. Colorectal cancer

Answer: d

All are true about Tc Except:

- a. multiple valent states and good chemistry
- b. Half life of 6 hours
- c. Adsorbed by aluminum
- d. Decay by isomeric transition
- e. originates from Mo

Answer: c

Myocardial perfusion studies:

- Coronary flow reserve

Not a trace in myocardial perfusion scan:

- Tn99 HMPAO

True about PET scan:

- important for oncologic practice

Most commonly used PET tracer:

- 18F-FDG

