

The following are forms of electromagnetic radiation EXCEPT:

- a) Gamma rays ✓
- b) X-rays ✓
- c) ~~Ultrasound~~ ✓
- d) Radio waves ✓
- e) Visible light ✓

radiography
RI
oppler

Prabhat

2016 paper

The most reliable observation to indicate that a chest radiograph is a RA rather than an AP projection is

- a) Minimal magnification of the cardiac shadow
- b) Degree of slant of the clavicles *Distortion*
- c) ~~Better demonstration of the thoracic spine~~ *Penetration*
- d) ~~Scapulae away from the lung fields~~ ✓ *and*
- e) Absence of the gastric air bubble



An area of radiographic film exposed to visible light before development appears

- a) ~~Black~~
- b) ~~White~~
- c) ~~Grey~~
- d) None of the above
- e) All the above

Black before development
White after development



The left atrial chamber of the heart enlarges

- a) ~~Anteriorly and laterally to the right~~
- b) ~~Posteriorly and laterally to the left~~
- c) ~~Laterally to the left~~
- d) ~~Laterally to the right~~
- e) ~~Posteriorly and laterally to the right~~

Black after development
White before

LA → Apex laterally to the left
RA → post, lat. right
RV → lat. right

LA → posteriorly
RA → anteriorly

LA → superiorly
RA → inferiorly

LA → laterally to the left
RA → laterally to the right

LA → posteriorly and laterally to the right

Contrast medium

- a) ~~Allows x-rays to traverse through structures more easily~~ *enhances demonstration of those structures*
- b) ~~Impedes the transmission of x-rays through tissue~~ ✓ *and*
- c) ~~Changes the frequency of X-ray photons~~ ✓
- d) ~~Causes anaphylactic reactions in 50% of patients~~ ✓
- e) ~~Should never be diluted~~ ✓

6. Bronchopneumonia

- x a) Involves the lower zones rather than selectively
- Shows as dense discrete opacities
- ~~Commonly involves the entire lung fields~~
- ~~Does not occur in adults~~
- ~~Takes weeks to resolve~~

Extracardiac
 • Aortic aorta
 • Pulmonary aorta

7. Which of the following imaging modalities best demonstrates VSD?

- ~~a) 2D Echo~~
- ~~b) CT scan~~
- ~~c) MRI~~
- ~~d) Plain chest x-ray~~
- ~~e) Angiography~~

Angiography
 • Shows aortic arch
 • Key to finding
 • Cardiac anatomy
 • Mediastinal vessels
 • Contrast

- elevated cardiac apex due to RVH
 - enlarged RA
 - prominent pulmonary
 - enlarged pulmonary
 - pruning of the
 peripheral pulmonary
 vessels

Plain film appearance of pulmonary venous hypertension include

- ~~Hazy lower zones with indistinctification of vessels~~
- ~~Upper zone vessels become prominent~~
- ~~Loss of definition of heart and mediastinal contours~~
- ~~All of the above~~

- Prominent upper lobe
 - bat's wing appearance
 - PA effacement
 - Kerley B lines

Peripheral pruning of vessels

- RV enlargement
- Filling of retrosternal space
- Enlarged central pulmonary arteries
- Peripheral pruning

The following are radiological features of left atrial enlargement except

- ~~a) Double right heart border~~
- ~~b) Splaying of carina~~
- ~~c) Increased convexity and prominence of the right heart border~~
- ~~d) Enlargement of the left atrial appendage~~
- ~~e) Straightening of the left heart border~~



Tetralogy of Fallot is commonly associated with

- ~~a) Aberrant right subclavian artery~~
- ~~b) Right sided aortic arch~~
- ~~c) Aortopulmonary window~~
- ~~d) Coarctation of aorta~~
- ~~e) Ebstein's anomaly~~

- RV enlargement
 - double density
 - pulmonary stenosis
 - RV hypertrophy
 - overriding aorta

congenital Vascular anomaly with RT ventricular duct
 tract (infundibulum) to pulm
 valve
 - hypoplasia of pulm valve, annu
 & pulm arteries
 - RT vent hypertrophy
 - anomalous origin of
 coronary a. from
 RT coronary a.

etiology of Fallot

4 elements of TOF plus

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aortopulmonary window (PDA)

Tetralogy of Fallot

Which of the following is true regarding normal cardiothoracic ratio on a chest radiograph?

- a) On an AP view of an adult it is usually less than 55% ~~X~~ *50-55% appears longer on AP.*
- b) On a PA view of an adult it is usually more than 55% ~~X~~ *50-55%*
- c) On the AP of an infant, it is usually more than 55% ~~X~~ *60%*
- d) On an AP of an infant it is usually less than 55% ~~X~~ *60%*
- e) On a PA view of an adult it is 60% ~~X~~ *< 50%*

AP infant < 60%
PA adult < 50%

12. An athletic 19 year old medical student presents to the emergency department after sustaining injury to the right hip. A radiograph reveals a fracture of the anterior superior iliac spine. What is the most likely diagnosis?

- a) Avulsion of rectus femoris
- b) Avulsion of sartorius *and tensor fascia lata*
- c) Avulsion of the hamstring muscles ~~X~~
- d) Avulsion of the iliopsoas ~~X~~
- e) Avulsion of the adductor muscles

13. Fracture of the scaphoid *AP oblique*

- a) Can be excluded if PA and lateral radiograph of the wrist are normal. ~~X~~
- b) Is the least common fracture of the carpal bones ~~X~~ *most common*
- c) Most frequently involves the distal scaphoid tubercle *middle*
- d) Most frequently occurs at the waist of the scaphoid ~~X~~ *base*
- e) May result in avascular necrosis of the distal fragment. *proximal*

proximal proximal - No direct blood supply

14. Which one of the following features is characteristic of Monteggia fracture-dislocation?

- a) Fracture of the ulnar styloid process ~~X~~ *or 1/2 ulna*
- b) Diastasis of the distal radioulnar joint ~~X~~ *4th*
- c) Posterior dislocation of the elbow ~~X~~
- d) Anterior dislocation of the head of radius ~~X~~ *an*
- e) History of fall on the outstretched hand ~~X~~ *with extension pronated arm*

proximal 1/3 ulna and anterior dislocation of head of radius at the elbow
Galazzi - # distal 1/3 radius & subluxation of head of ulna at the wrist joint

15. Which one of the following is not a recognised cause of 'sunburst' periosteal reaction:

- a) Fibrosarcoma of bone ~~X~~
- b) Prostatic bone metastasis ~~X~~
- c) Angioma of bone ~~X~~
- d) Ewing's sarcoma ~~X~~
- e) Central osteosarcoma ~~X~~

Lesions growing rapidly but slowly preventing periosteum from laying bone on time - but tiny fibres that connect periosteum to bone (Sharpey's fibres) become stretched out + perpendicular to bone when the

Primary malignant tumours - often periosteal rxn - soft tissue mass. A soft tissue mass is uncommon for

401
7M

16. Multiple myeloma

- a) Typically presents between 40-50 years of age ~~X~~ *60 x*
- b) is a recognized cause of generalized osteopenia *osteoporosis*
- c) Typically destroys the pedicles of the vertebrae ~~X~~ *vertebrae*
- d) is more common in females than males ~~X~~ *M > F*
- e) Causes multiple well defined osteosclerotic lesions ~~X~~ *osteolytic lesions are signs of Benign tumors*

17. In metastatic bone disease

- a) Solitary bone primary neoplasm is more common than malignant metastases in patients over 50 years of age ~~X~~ *Young*
- b) The appendicular skeleton is most often affected ~~X~~ *axial skeleton + proximal bone*
- c) Mode of spread is via the lymphatic system ~~X~~ *except skull in adults. These are regions of hemopoiesis*
- d) A skeletal radionuclide scan is the investigation of choice in the assessment of extent of bony involvement *✓✓*
- e) Bone sclerosis is due to the production of tumorous bone in most cases ~~X~~ *benign*
↳ Sclerotic sign of Benign not Malignant disease

18. The following is the true arrangement of the proximal row of small bones of the right antero-posterior view of the wrist

- a) Hamate, pisiform, triquetrum, scaphoid *distal to proximal*
- b) Pisiform, triquetrum, lunate, scaphoid *✓*
- c) Pisiform, lunate, capitate, hamate ~~X~~
- d) Pisiform, lunate, capitate, triquetrum ~~X~~
- e) Triquetrum, pisiform, scaphoid, lunate ~~X~~

not the same as S L T P

19. Ascending urethrography involves the imaging of

not used in females

- a) Female urethra ~~X~~
- b) Male urethra *✓*
- c) Ureters *Not used in females*
- d) Kidneys *Proximal*
- e) Vesico-vaginal fistula *Triquetrum, Lunate, Scaphoid*

20. Concerning radiological evaluation of the breast

- a) Mammography is the examination of choice in patients > 35 years ~~X~~ *28-35 years*
- b) Ductography is contraindicated in nipple discharge ~~X~~ *not used*
- c) Breast ultrasound is the examination of choice in patients < 35 years ~~X~~
- d) Microcalcification is best demonstrated on ultrasound ~~X~~
- e) Macrocalcification is associated with malignancy ~~X~~

distal radiograph

B → Kerley B lines
 C → Cardiomegaly
 D → Dilated prominent upper lobe vessels
 E → ~~blurred~~

Which one of the following is not a finding of congestive heart failure

- a) Dilated hepatic veins on ultrasound ✓
- b) Pleural effusion ✓
- c) Kerley B lines ✓ *put in exam*
- d) Small "tear drop" heart appearance on a chest radiograph ✓
- e) Pulmonary venous congestion ✓ *upper lobe vessels*

- A - dilated aorta
- B - Kerley B lines
- C - Cardiomegaly
- D - Dilated prominent upper lobe vessels
- E - ~~blurred~~

22. Which one of the following is not true concerning ischaemic heart disease

- a) Normal chest radiograph ✓ *variable*
- b) On scintigraphy studies thallium is taken up by non-viable myocardium ✓ *viable*
- c) Males are more affected than females ✓
- d) It tends to run in families ✓
- e) In most cases is due to atheroma and its complications ✓

23. A 28 year old male has history of fresh blood vomitus. The imaging modality of choice

- a) Small bowel enema *Not avail*
- b) Tc 99 bone scan *→ X*
- c) Barium meal and follow through *→ Next dx ans*
- d) Barium swallow *→ thick upper GI bleed*
- e) Urgent CT scan chest *→ dysphagia*

24. The current primary screening modality for breast cancer is

- a) Ultrasonography
- b) Ductography
- c) Magnetic resonance imaging
- d) Computed tomography
- e) Mammography *ans*

25. Which one of the following is not a feature of rickets at plain radiography

- a) Splaying of the metaphysis ✓ *indistinct outline*
- b) Reduced bone density ✓ *coarse trabeculation*
- c) Widened growth plate ✓ *epiphyseal plates widened*
- d) Bony spur ✓ *osteomyelitis*
- e) Cupping and splaying ✓

26. Sialography

- a) Imaging of the paranasal air sinuses ✓
- b) Imaging of the adrenal glands ✓
- c) Imaging of the salivary glands ✓ *water soluble*
- d) Evaluation of primary dentition ✓
- e) Imaging of the pancreatic duct ✓

33. Which one of the following is not an indication for barium swallow

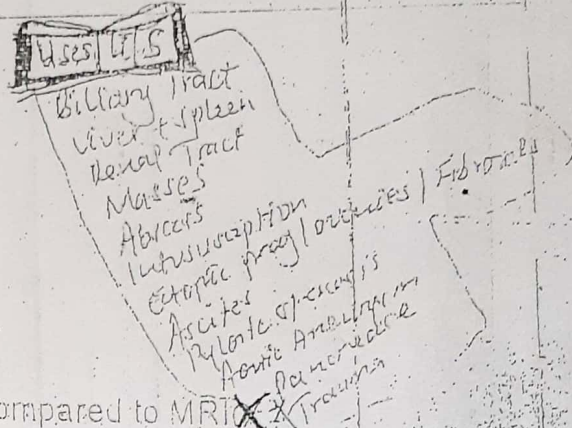
- Dyspepsia ✓ ^{-meal}
- Dysphagia ✓ ^{meal}
- Hematemesis ✓
- Assessment of left atrial enlargement ✓
- Pain on swallowing ✓ ✓ **TEF**

Swallow
Dysphagia
Reflux (GERD)
Varices

Meal
Dysphagia
Reflux
Weight loss
Abdominal pain
Blood in stool

34. Ultrasound examination is not applicable in

- Suspected masses ✓
- Suspected large bowel obstruction ✓
- Suspected peritoneal fluid collections ✓
- Jaundiced patient ✓ **choleliths**
- Suspected intussusception ✓



35. Regarding the use of CT scan in GIT imaging

- It gives less radiation dose to the patient compared to MRI ✓
- It has excellent soft tissue contrast ✓
- It is highly useful in acute abdomen ✓ ^{causes of acute abdomen}
- Its penetration through bowel gas is poor compromising diagnostic capability ✓
- It is more sensitive than ultrasound in detecting biliary calculi ✓

36. An 82 year old woman who was previously well has had several falls within the past 2-3 months. She has become increasingly confused with no neurological signs on physical examination. Acute or chronic bilateral subdural hematomas are shown on CT. The following are the CT findings.

- a) High attenuation in both sylvian fissures, the basal cistern and the lateral ventricle
- b) High attenuation overlying the right frontoparietal cortex and extending into the interhemispheric space with midline shift to the left
- ~~Mixed attenuation areas overlying both hemispheres with normal ventricles and no midline shift~~ **ans.**
- d) High attenuation lentiform collection overlying the left temporal region with effacement of the left lateral ventricle
- Superficial areas of low density in the right fronto-temporal region containing small foci of high attenuation.

Marked Abbas deformity

37. A 12 year old girl presents with a 3 week history of back pain, malaise and low grade fever. A lateral lumbar spine radiograph shows features suspicious of discitis. Which of the following would support tuberculous rather than pyogenic infection?

- a) Bony bridging of affected vertebrae X
- b) Destruction of the adjacent end plates both
- c) Large paravertebral abscess pyogenic
- d) Marked bony sclerosis pyogenic
- e) Preserved vertebral body heights X

38. A 27 year old woman is involved in an RTA and sustains severe head injury. Her CT head shows acute blood within the extradural, subdural and subarachnoid spaces. Which of the following statements is true regarding extradural hematomas?

- a) They are crescentic in shape X
- b) They are commonest in the temporoparietal region
- c) They are rarely associated with a skull fracture X
- d) They are usually due to laceration of the middle cerebral artery X
- e) They commonly cross the cranial suture X

39. A 20 year old man falls from a height and sustains head injury. On examination he is found to have otorrhoea. A fracture base of skull is suspected. Which of the following radiographic views would be useful?

- a) Occipital mental view (OMV) maxillary other sinuses
- b) Submental vertical view (SMV) - base of skull
- c) Townes view - Posterior fossa + foramen magnum
- d) Lateral view
- e) Coned view of the pituitary fossa

40. A 10 year old girl presents with headache, neck stiffness and a positive Kernig's sign. Which of the following would be the best imaging modality for this patient?

- a) Non-contrast enhanced CT
- b) Cranial ultrasound X
- c) Contrast enhanced CT
- d) AP and lateral views of the skull X
- e) T1W MR X