BDK

PROVISIONAL ANSWER KEY (CBRT)

Name of the post	**Radiologist, Employees State Insurance Scheme , Class-1 |**
Advertisement No.	**2/2022-23**
Preliminary Test held on	**11-09-2022**
Question No.	**01-200**
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THE LINK FOR ONLINE OBJECTION SYSTEM WILL START FROM 14-09-2022; 04:00 PM ONWARDS

Instructions / સૂચના

Candidate must ensure compliance to the instructions mentioned below, else objections shall not be considered: -

(1) All the suggestion should be submitted through **ONLINE OBJECTION SUBMISSION SYSTEM** only. Physical submission of suggestions will not be considered.

(2) Question wise suggestion to be submitted in the prescribed format (proforma) published on the website / online objection submission system.

(3) All suggestions are to be submitted with reference to the Master Question Paper with provisional answer key (Master Question Paper), published herewith on the website / online objection submission system. Objections should be sent referring to the Question, Question No. & options of the Master Question Paper.

(4) Suggestions regarding question nos. and options other than provisional answer key (Master Question Paper) shall not be considered.

(5) Objections and answers suggested by the candidate should be in compliance with the responses given by him in his answer sheet. Objections shall not be considered, in case, if responses given in the answer sheet /response sheet and submitted suggestions are differed.

(6) Objection for each question should be made on separate sheet. Objection for more than one question in single sheet shall not be considered.

ઉમેદવારે નીચેની સૂચનાઓનું પાલન કરવાની તકેદારી રાખવી, અન્યથા વાંધા-સૂચન અંગે કરેલ રજૂઆતો ધ્યાને લેવાશે નહીં

(1) ઉમેદવારે વાંધા-સૂચનો ફક્ત **ઓનલાઈન ઓબ્જેક્શન સબમીશન** સીસ્ટમ દ્વારા જ સબમીટ કરવાના રહેશે. રૂબરૂ અથવા ટપાલ દ્વારા આયોગની કચેરીએ મોકલવા આવેલ વાંધા-સૂચનો ધ્યાને લેવામા આવશે નહીં જેની ખાસ નોંધ લેવી.

(2) ઉમેદવારે વાંધા-સૂચનો રજૂ કરવા વેબસાઈટ / ઓનલાઈન ઓબ્જેક્શન સબમીશન સીસ્ટમ પર પ્રસિધ્ધ થયેલ નિયત નમૂનાનો જ ઉપયોગ કરવો.

(3) ઉમેદવારે પોતાને પરીક્ષામાં મળેલ પ્રશ્નપપુસ્તિકામાં છપાયેલ પ્રશ્નક્રમાક મુજબ વાંધા-સૂચનો રજૂ ન કરતા તમામ વાંધા-સૂચનો વેબસાઈટ પર પ્રસિધ્ધ થયેલ પ્રોવિઝનલ આન્સર કી (માસ્ટર પ્રશ્નપત્ર)ના પ્રશ્ન ક્રમાંક મુજબ અને તે સંદર્ભમાં રજૂ કરવા.

(4) માસ્ટર પ્રશ્નપત્રમાં નિર્દિષ્ટ પ્રશ્ન અને વિકલ્પ સિવાયના વાંધા-સૂચનો ધ્યાને લેવામાં આવશે નહીં.

(5) ઉમેદવારે પ્રશ્નના વિકલ્પ પર વાંધો રજૂ કરેલ છે અને વિકલ્પ રૂપે જે જવાબ સૂચવેલ છે એ જવાબ ઉમેદવારે પોતાની ઉત્તરવહીમાં આપેલ હોવો જોઈએ. ઉમેદવારે સૂચવેલ જવાબ અને ઉત્તરવહીનો જવાબ ભિન્ન હશે તો ઉમેદવારે રજૂ કરેલ વાંધા-સૂચનો ધ્યાનમા લેવાશે નહીં.

(6) એક પ્રશ્ન માટે એક જ વાંધા-સૂચન પત્રક વાપરવું. એક જ વાંધા-સૂચનો પત્રકમાં એકથી વધારે પ્રશ્નોની રજૂઆત કરેલ હશે તો તે અંગેના વાંધા-સૂચનો ધ્યાને લેવાશે નહીં.

Website link for online objection submission system : http://gpsc.safevaults.in/login/

001. A 61-year-old stroke patient is scheduled to undergo cerebral perfusion scanning. Which of the following would not be useful?

(A) 82RbCl (Rubidium chloride) (B) 15O-H2O

(C) 13N-NH3 (D) 18F-FDG

002. A 40-year-old woman is referred from a PHC for evaluation of nodular thyroid enlargement. As a part of evaluation, she is planned for a radio uptake scan. Which of the following isotopes is not used in this test?

(A) Iodine 123 (B) Iodine 124

(C) TC99 m (D) Iodine 127

003. Which of the following findings are you unlikely to see in a patient with achondroplasia?

(A) Bullet shaped vertebra (B) Tomb stone appearance of acetabulum

(C) Chevron sign in epiphysis (D) Trident hand

004. Which of the following is the best way to detect minimum pneumoperitoneum on Xray in patient with abdominal trauma?

(A) Supine chest X ray.

(B) Erect x ray abdomen.

(C) Right lateral decubitus chest x ray with horizontal beam.

(D) Left lateral decubitus chest x ray with horizontal beam.

005. Contrast media used in the diagnosis of oesophageal atresia is,

(A) Gastrograffin (B) Conray 420

(C) Dianosil (D) Urograffin

006. A 40-year-old has a routine chest radiograph as a part of pre-immigration work up. This demonstrates a mass on the left with loss of the upper left heart border. The descending aorta can, however, be seen despite the mass. Which of the following is the most likely location of the mass?

(A) Apico-posterior segment (B) Lingula

(C) anterior segment of the upper lobe (D) Posterior basal segment of the lower lobe

007. In an investigation for lung malignancy, all the following may produce a false positive result on a PET-CT except:

(A) Pulmonary hamartoma (B) Intralobar sequestration

(C) Tuberculosis (D) Pneumonia

008. A 25-year-old man has a routine chest radiograph prior to a work permit application. It demonstrates a well-defined, rounded mediastinal mass. Which of the following features on CT would make a diagnosis of bronchogenic cyst less likely?

(A) Soft-tissue density (B) Thick wall

(C) Precarinal location (D) Communication with tracheal lumen

009. A 45-year-old female patient with history of rheumatic fever as a child presents with progressive shortness of breath and paroxysmal nocturnal dyspnoea. Clinical examination reveals a pansystolic murmur associated with a mid-diastolic murmur with presystolic accentuation best heard over the cardiac apex. Cardiothoracic and vascular plain film do not reveal evidence of heart failure, but several features of left atrial enlargement are noted. Which of the following is not one of those?

(A) Double atrial shadow on the right (B) Straightening of the right heart border

(C) Elevation of the left main bronchus (D) Splaying of the carina

010. A 60-year-old woman presents to her GP with renal colic and hypercalcaemia. She has the following findings on plain film: subperiosteal bone resorption of the proximal phalanges of the hands, chondrocalcinosis of the articular cartilage at the knee joints, and a well-defined lytic lesion in the body of the mandible. The most likely unifying diagnosis is:

(A) Parathyroid adenoma
(B) Parathyroid carcinoma
(C) Renal osteodystrophy
(D) Osteomalacia

011. A 24-year-old man injured his left knee whilst skiing. He presents with pain and swelling over the lateral aspect of the knee joint. AP plain radiographs demonstrate an avulsion fracture of the lateral aspect of the proximal tibia below the articular surface. A joint effusion is also seen. The most likely associated ligamentous injury is to which of the following structures?

(A) Posterior cruciate ligament
(B) Anterior cruciate ligament
(C) Medial collateral ligament
(D) Lateral collateral ligament

012. A 24-year-old man suffers a short oblique fracture of his distal tibia from a direct blow during a football game. He is treated with an intramedullary nail with a good reduction being achieved. Fourteen days later the foot becomes very tender, red and swollen but all haematological and biochemical parameters remain normal. Plain radiographs show spotty osteoporosis and subchondral erosions. Which of the following is the most likely diagnosis?

(A) Disuse osteoporosis
(B) Charcot joints
(C) Infection
(D) Regional sympathetic dystrophy

013. A 56-year-old woman who has had chronic wrist pain since a fall several months previously is referred for an MR arthrogram of her wrist with a suspected triangular fibrocartilage complex (TFCC) tear. Which of the following would be the best sequence for visualising a TFCC tear?

(A) T1 axial
(B) T2 coronal
(C) Gradient echo sagittal
(D) T2 sagittal

014. An 84-year-old diabetic female is investigated for recurrent E. coli urinary tract infections and microscopic haematuria. An intravenous urogram is performed, which shows numerous small filling defects in the ureter and small mural plaque-like defects within the bladder. Which one of the following is the most likely diagnosis?

(A) Malakoplakia
(B) Leukoplakia
(C) Emphysematous cystitis
(D) Emphysematous pyelonephritis

015. A 32-year-old male presents with right flank pain and an intravenous urogram is requested with the provisional diagnosis of ureteric calculi. The renal outline is smooth and wavy, with a decreased overall size. The fornices are widened with club-shaped calyces. After further questioning he reveals a recent overuse of analgesia. Which one of the following diagnoses is most likely?

(A) Acute cortical necrosis
(B) Acute tubular necrosis
(C) Papillary necrosis
(D) Acute interstitial nephritis

016. A 38-year-old female undergoes investigation for weight loss and abdominal fullness. CT shows large bilateral adnexal masses, ascites and several small omental soft-tissue nodules. MRI demonstrates bilateral sharply marginated ovarian tumours with preservation of the ovarian contours. The tumours consist mainly of hypointense solid material interspersed with foci of high-signal cysts. On post-contrast T1-weighted imaging the solid components are hyperintense. What is the most likely diagnosis?

(A) Cystadenocarcinoma
(B) Dysgerminoma
(C) Krukenberg's tumour
(D) Burkitt's lymphoma

017. An abdominal plain film of a four-year-old child taken for unexplained abdominal pain shows bilateral adrenal calcification as an incidental finding. Which of the following is the most common cause of adrenal calcification in children?

(A) Wolman's disease
(B) Tuberculosis
(C) Adrenal haemorrhage
(D) Adrenal carcinoma

018. A 71-year-old woman with no significant past medical history has an abdominal ultrasound as part of an investigation for right upper quadrant pain, anaemia and weight loss. Multiple, poorly defined, markedly echogenic lesions are seen throughout the liver. Biopsy reveals these to be metastases. Which one of the following is most likely to be the primary tumour?

(A) Adenocarcinoma of the colon
(B) Melanoma
(C) Invasive ductal carcinoma of the breast
(D) Gastric cancer

019. A 39-year-old woman has an ultrasound scan for right upper quadrant pain and jaundice which reveals biliary ductal dilatation to the level of the common hepatic duct adjacent to a stone in the gallbladder neck. The gallbladder is thick-walled and tender. MRCP confirms these findings and excludes common duct stones. Which one of the following is the most likely diagnosis?

(A) Primary sclerosing cholangitis
(B) Mirizzi syndrome
(C) Caroli's disease
(D) Fascioliasis

020. A 35-year-old male with known ulcerative colitis presents to Emergency Medicine Department with severe abdominal pain, pyrexia and diarrhoea. There is no peritonism. Toxic megacolon is suspected clinically. Which one of the following is the most appropriate as first line imaging?

(A) CT
(B) Plain abdominal film
(C) Double contrast barium enema
(D) Single contrast water-soluble enema

021. A 31-year-old male is investigated as an outpatient for diarrhoea. A small bowel meal study reveals jejunal dilatation with thickened valvulae conniventes. In the ileum an increased number of mucosal folds are seen. Which of the following diagnoses is most likely?

(A) Lymphoma
(B) Crohn's disease
(C) Coeliac disease
(D) Whipple disease

022. A 50-year-old male is admitted with epigastric pain, diarrhoea and vomiting. Ascites is present clinically. Serum albumin is low and the patient is anaemic. Colonoscopy is normal but the patient is intolerant of upper gastro-intestinal endoscopy. Barium meal reveals a normal antrum but elsewhere there are diffusely thickened and enlarged gastric folds despite good gastric distension. Which one of the following is the most likely diagnosis?

(A) Gastric lymphoma
(B) Menetrier's disease
(C) Gastric adenocarcinoma
(D) Acute gastritis

023. While performing a PET CT scan, uptake in which of the following areas is likely to be a false positive?

(A) Urinary bladder
(B) Testis
(C) Pancreas
(D) Lymph nodes

024. Which of the following is true regarding PET scans?

(A) It uses gamma emitting radioisotope
(B) It is used for 2D image reproduction
(C) Lead collimator are used
(D) It can be used for hybrid imaging

025. You are reporting an MRI knee on a patient with moderately severe osteoarthritis (OA), as diagnosed on plain film radiography. The patient describes significant knee pain. Which of the following statements best describes the relationship between symptoms, plain film findings, and MRI findings?

(A) The MRI findings correlate well with the severity of findings on plain film radiography.

(B) MRI findings correlate well with the patient's symptoms.

(C) Plain film findings correlate well with the patient's symptoms, unlike MRI.

(D) Plain film and MRI both correlate well with the severity of the patient's symptoms.

026. A 35-year-old man sprains his right ankle and attends the Emergency Medicine department. An x-ray of the right ankle is performed. This does not show any evidence of a fracture, but the lateral view does demonstrate a well-defined radiolucent lesion with a faint sclerotic margin in the mid calcaneus. There is some central calcification within the lesion. What is the most likely diagnosis?

(A) Simple bone cyst.

(B) Normal variant.

(C) Enchondroma.

(D) Intraosseus lipoma.

027. A 25-year-old man presents with a painful knee. A plain film reveals a lucent area with a wide zone of transition in the distal femoral metaphysis. MRI reveals fluid–fluid levels. What is the most likely diagnosis?

(A) Aneurysmal bone cyst.

(B) GCT.

(C) Osteosarcoma.

(D) Chondroblastoma.

028. A patient who is HIV positive presents with knee and ankle pain and swelling. Clinical examination is otherwise unremarkable. Initial radiographs reveal only a joint effusion. The complaint resolves after 4 weeks. What is the most likely diagnosis?

(A) Septic arthritis.

(B) Psoriatic arthritis.

(C) HIV-associated arthritis.

(D) Acute symmetric polyarthritis.

029. A 30-year-old female runner presents with a history of pain in the legs on running. Plain radiographs are unremarkable. An isotope bone scan reveals subtle, longitudinal, linear uptake on the delayed bone scan images, with normal angiogram and blood pool images. What is the diagnosis?

(A) Stress fracture.

(B) Shin splints.

(C) Osteoid osteoma.

(D) Osteomyelitis.

030. A 17-year-old female is admitted with multiple penetrating injuries to her arms after shielding her face from a nearby bomb blast while walking in the city centre. For which type of penetrating foreign body is ultrasound most superior for detection?

(A) Gravel.

(B) Wood.

(C) Plastic.

(D) Windshield glass.

031. A 76-year-old man presents with hip and pelvic pain. He has a past history of renal cell carcinoma treated by radiofrequency ablation, and has been treated on multiple occasions with heparin for thromboembolic disease. Plain films are non-contributory but a 99mTc bone scan reveals increased thoracic kyphosis and increased uptake in the body and bilateral alae of the sacrum in an H configuration. What is the most likely diagnosis?

(A) Brown tumour.

(B) Multiple myeloma.

(C) Metastasis from renal cell carcinoma.

(D) Insufficiency fractures.

032. A radiologist is reporting a 99mTc bone scan and describes it as a 'superscan'. He can say this because of reduced uptake in the:

(A) brain
(B) skeleton
(C) kidneys
(D) bowel

033. A patient presents with recent onset neurological symptoms suspicious of an acute presentation of multiple sclerosis (MS). Which of the following anatomical sites of plaque involvement is least consistent with this?

(A) Corpus callosum.
(B) Spine involvement in the absence of brain involvement.
(C) Cerebral cortex.
(D) Symmetrical involvement of cerebral white matter.

034. A patient is referred to your neuro-interventional team for embolization of a meningioma prior to surgical resection. The lesion is based on the tentorium. What is the likely feeding vessel (parent vessel is named in brackets)?

(A) Anterior meningeal artery (vertebral).
(B) Middle meningeal artery (external carotid artery (ECA)).
(C) Posterior meningeal artery (variable).
(D) Bernasconi–Casanari artery (Internal carotid artery (ICA).

035. Which one of the following orbital pathologies typically arises from the intraconal compartment?

(A) Cavernous haemangioma.
(B) Adenocystic carcinoma.
(C) Rhabdomyosarcoma.
(D) Dermoid.

036. A 7-year-old boy presents with rapid onset right proptosis. CT shows an extraconal mass in the right orbit with irregular margins. There is evidence of intraconal and intracranial extension. On MRI, the lesion is of decreased signal on T1WI, increased signal on T2WI, and shows relatively uniform enhancement. What is the most likely diagnosis?

(A) Retinoblastoma.
(B) Non-Hodgkin lymphoma.
(C) Capillary haemangioma.
(D) Rhabdomyosarcoma.

037. A 45-year-old man presents with a 4-month history of worsening lower back pain radiating into the right lower extremity with weakness. An MRI scan of lumbar spine shows a 3-cm well-defined ovoid lesion eccentrically placed at the conus medullaris, the location of which is felt to be intradural and extramedullary. It is hypointense on T1WI and hyperintense on T2WI. There are flow voids and haemorrhage within the lesion. It enhances avidly post injection of contrast. Which of the following lesions fits best with the imaging findings?

(A) Meningioma.
(B) Schwannoma.
(C) Neurofibroma.
(D) Paraganglioma.

038. A 30-year-old male patient attends Emergency Medicine Department 30 minutes after a head injury. He has consumed alcohol. You are contacted by the A&E doctor, who requests a CT brain. At this time, which of the following is a correct indication for immediate scanning?

(A) Two episodes of vomiting.
(B) GCS 13.
(C) Loss of consciousness.
(D) Amnesia for 20 minutes before accident.

039. A 34-year-old man undergoes MRI of brain after admission for head trauma. Which of the following sequences is most sensitive for subarachnoid haemorrhage?

(A) T1WI.
(B) T1WI with fat saturation.
(C) T2WI.
(D) FLAIR.

040. A 27-year-old man suffers a head injury. A CT brain is performed. Which of the following features favours a subdural haematoma (SDH) over an extradural haematoma (EDH)?

(A) The haematoma measures 50 HU.
(B) The presence of a temporal skull fracture.
(C) The haematoma crosses the midline over the falx.
(D) The haematoma crosses sutures.

041. A 34-year-old female presents with neurological symptoms suggestive of MS and is referred for an MRI of brain by the neurology team. Which of the following sequences is most useful for determining if there are plaques of differing ages (i.e., dissemination in time)?

(A) FLAIR.
(B) T2WI.
(C) Pre-and post-contrast T1WI.
(D) Proton density.

042. A 16-year-old female is referred for MRI after presenting with an increasing number of cutaneous neurofibromata. As a child she had been noted to have a cafe-au-lait spot on her back. What MRI finding would confirm the diagnosis of NF-1?

(A) Multiple hyperintense white matter foci on T2WI.
(B) Bilateral vestibular schwannomas.
(C) Meningioma.
(D) Optic nerve glioma.

043. A 16-year-old male with a history of epilepsy is investigated via MRI. Axial T2WI demonstrates a cystic space within the left frontal lobe isointense to CSF. This is causing local mass effect and there is adjacent enlargement of the left lateral ventricle. What is the most likely diagnosis?

(A) Porencephalic cyst.
(B) Arachnoid cyst.
(C) Schizencephaly.
(D) Hydranencephaly.

044. A 62-year-old man is referred for MRI of brain after presenting with cognitive decline, gait apraxia, and urinary incontinence. There is a preceding history of chronic headache. Ventriculomegaly is noted on initial CT. Which of the following conventional MRI findings distinguishes aqueductal stenosis from normal pressure hydrocephalus?

(A) Periventricular T2WI hyperintensity.
(B) Normal sulci.
(C) Aqueductal flow void.
(D) Funnel-shaped aqueduct.

045. A 32-year-old female is referred to neurology complaining of visual disturbance and headache. She is 4 months postpartum. On examination a bitemporal hemianopia is noted. Hormonal testing reveals hypoadrenalism and hypothyroidism. A dedicated MRI of her pituitary gland is requested. Which of the following features is suggestive of autoimmune hypophysitis over pituitary adenoma?

(A) Asymmetric pituitary enlargement.
(B) Heterogenous gadolinium enhancement.
(C) Loss of the posterior pituitary bright spot.
(D) Sphenoid sinus mucosal thickening

046. A 32-year-old man presents with schizophrenic-like psychosis and parkinsonian-type movement disorder. There is a family history of neuropsychiatric disturbance. An initial CT is requested which demonstrates heavy, bilateral, symmetric calcifications within the globus pallidus, thalami, putamen, and cerebellum. There is no enhancement post contrast. Which of the following suggests a diagnosis of Fahr disease over pseudohypoparathyroidism?

(A) Involvement of the globus pallidus. (B) Normal calcium-phosphorus metabolism

(C) Involvement of the putamen. (D) Involvement of the cerebellum.

047. A 54-year-old female is admitted following a seizure. CT of the brain demonstrates a rounded, 2-cm hyperdense lesion within the right temporal lobe, which exhibits calcification. No enhancement is seen post contrast. On follow-up MRI of brain, the lesion is of mixed intensity on T1WI. The lesion has a hypointense rim on T2WI. Prominent susceptibility effect is noted on T2* GE imaging. DWI is normal and no enhancement is demonstrated on T1WI post gadolinium. Based on the imaging findings, what is the most likely diagnosis?

(A) AVM. (B) Haemorrhagic neoplasm.

(C) Cavernous malformation (cavernoma). (D) Amyloid angiopathy.

048. A 52-year-old woman presents with gradually increasing gait disturbance and lower limb sensory symptoms. An MRI of her spine is performed, and this shows an anteriorly placed intradural, but extramedullary spinal mass. It is fairly markedly low signal on T1WI and T2WI, and shows only miminal patchy enhancement post administration of intravenous gadolinium. What is the most likely diagnosis?

(A) Neurofibroma. (B) Schwannoma.

(C) Meningioma. (D) Metastasis.

049. A 2-year-old girl is investigated for slow motor development via MRI. Which of the following radiological features would suggest a diagnosis of Dandy– Walker malformation, as opposed to Dandy–Walker variant?

(A) Cerebellar dysgenesis. (B) Enlargement of the posterior fossa.

(C) Agenesis of the corpus callosum. (D) Holoprosencephaly.

050. A 4-month-old child presents with abdominal distension and signs of obstruction. A plain film of abdomen shows mild small bowel distension with some displacement of loops in the lower abdomen and pelvis by a homogenous density. A subsequent ultrasound of the abdomen and pelvis shows a 7-cm cystic lesion in the lower abdomen. It is anechoic but has a definable wall that has an inner echogenic line and an outer hypoechoic layer. What is the most likely diagnosis?

(A) Mesenteric cyst. (B) Omental cyst.

(C) Ovarian cyst. (D) Duplication cyst.

051. A 3-month-old child presents to the paediatric outpatient clinic with a history of recurrent respiratory distress. The child had an uneventful delivery but has had recurrent problems since birth. The child had a CXR taken prior to discharge home, aged 2 days, which showed a density in the left upper lobe, felt by the paediatrician to represent the thymus. Whilst the infant has never required admission, the mother is concerned due to recurrent coughing and dyspnoea. A CXR obtained at the clinic shows a large hyperlucent area in the left upper lobe. What is the most likely diagnosis?

(A) Congenital lobar emphysema. (B) Congenital cystic adenomatoid malformation.

(C) Pulmonary sequestration. (D) Persistent PIE.

052. A premature baby girl is noted to have a skull deformity consistent with scaphocephaly. Fusion of which vault suture or sutures gives rise to this craniosynostosis?

(A) Coronal suture. (B) Sagittal suture.

(C) Lambdoid suture. (D) Metopic suture.

053. A 6-week-old male child presents with non-bilious vomiting after feeds, which has more recently become projectile in nature. You clinically suspect hypertrophic pyloric stenosis. Which of the following ultrasound findings would be inconsistent with this diagnosis?

(A) A pyloric muscle thickness of 4 mm.

(B) The presence of retrograde gastric contractions.

(C) A pyloric thickness (serosa to serosa) of 10 mm.

(D) A pyloric channel length of 12 mm.

054. A 10-year-old boy of Japanese origin presents with episodes of right transient hemiparesis and declining intellect. MRI brain is performed. Which of the following are the most likely radiological findings?

(A) Multiple flow voids within the basal ganglia bilaterally.

(B) Irregular beading of the left extracranial internal carotid artery.

(C) Hypoplasia of the left internal carotid artery.

(D) Distal left middle cerebral artery aneurysm.

055. An 18-month-old boy is referred for CT after presenting with a right-sided white eye reflex (leucocoria). Which radiological feature is most in keeping with a diagnosis of retinoblastoma, as opposed to non-neoplastic causes of leucocoria (pseudoretinoblastoma)?

(A) Contrast enhancement. (B) Calcification.

(C) Microophthalmia. (D) Mass extension into the vitreous.

056. An 8-year-old boy presents with a painful scalp swelling over the right frontal region for the last 6 weeks. An initial skull radiograph demonstrates a punched out oval osteolytic lesion with an apparent double contour or bevelled edge. The lesion does not have a sclerotic margin and no periosteal reaction is seen. Which of the following is the most likely diagnosis?

(A) Epidermoid cyst. (B) Neuroblastoma metastasis.

(C) Langerhans cell histiocytosis (LCH). (D) Haemangioma.

057. A 12-year-old boy undergoes a plain film of his left knee after minor trauma playing rugby. The film reveals a lucent, cortically based lesion with a sclerotic rim in the metadiaphysis of the proximal tibia. There is no periosteal reaction or soft-tissue component, and the boy denies pain prior to the injury. As the reporting radiologist you advise:

(A) plain films of the extremities to look for similar lesions

(B) MRI of the left lower leg and CT chest

(C) Isotope bone scan

(D) none of the above.

058. A 15-year-old boy presents with severe abdominal pain. He has a known history of a 'polyposis' syndrome. A plain AXR shows small bowel obstruction. A subsequent CT scan of abdomen indicates that this is due to a small bowel intussusception. Which 'polyposis' syndrome does he most probably have?

(A) Cronkhite–Canada syndrome. (B) Familial adenomatous polyposis syndrome.

(C) Cowden disease. (D) Peutz–Jehger's syndrome.

059. A 56-year-old asymptomatic woman undergoes routine screening mammography. Which of the following forms of calcification raises greatest suspicion of ductal carcinoma in situ (DCIS)?

(A) Eggshell.
(B) Sedimented.
(C) Tubular.
(D) Dot-dash.

060. A 67-year-old male patient presents with an 8-week history of left loin pain. A renal CT is obtained, and this shows a 6-cm enhancing left renal lesion that has a fibrotic central scar. What is the most likely diagnosis?

(A) Renal leiomyoma.
(B) Renal oncocytoma.
(C) Renal metanephric adenoma.
(D) Renal haemangioma (giant).

061. A 65-year-old man is referred to the urology outpatient clinic with a painless right testicular lump. On ultrasound, there is a 3-cm heterogeneous mass within the right testicle that has concentric rings of alternating hypo- and hyper echogenicity, giving the mass a 'whorled' appearance. A subsequent MRI shows this mass to have alternating low and high signal intensity layers onT2w sequences. What is the most likely diagnosis?

(A) Melanoma metastases
(B) Orchitis
(C) Testicular abscess
(D) Testicular epidermoid cyst

062. A 50-year-old male with thyroid swelling undergoes ultrasound of the thyroid that shows a solitary hypoechoic nodule with punctate calcification and increased vascularity. An ultrasound guided fine needle aspiration is carried out and is reported as benign. What would you do next?

(A) Repeat fine needle aspiration.
(B) Follow-up ultrasound in 6 months.
(C) No further follow-up.
(D) Staging CT.

063. A 35-year-old female presents with a history of menorrhagia. MRI of pelvis demonstrates a fibroid uterus for which treatment with high-intensity focused ultrasound (HIFU) is proposed. What is the principal mechanism of action of HIFU?

(A) Coagulation necrosis.
(B) Apoptosis.
(C) Cavitation.
(D) Microstreaming.

064. A 46-year-old female with pressure symptoms related to uterine fibroids is referred for fibroid embolization. Which of the following complications is the patient at increased risk of?

(A) Uterine sepsis.
(B) Fibroid passage.
(C) Fibroid regrowth.
(D) Ovarian dysfunction.

065. An 18-year-old mountain bike enthusiast is suspected of sustaining a renal injury after attempting a front wheel touch-up manoeuvre. A laceration to the right kidney is noted on CT, which demonstrates contrast enhancement during the pyelographic phase of the examination. What is the significance of this finding?

(A) Pre-existing angiomyolipoma.
(B) Active haemorrhage.
(C) Devascularization.
(D) Urine leak.

066. A 28-year-old male with a history of von Hippel Lindau disease and a 3-cm renal cell carcinoma undergoes cryo-ablation. Which of the following is suggestive of incomplete treatment/ recurrence?

(A) Hypodense ablation zone larger than the original tumour.
(B) Lack of enhancement in the ablation zone.
(C) Ablation zone unchanged in size over time.
(D) Peripheral ring enhancement.

067. A 30-year-old female patient with a history of infertility is referred for an HSG. She has a history of pelvic inflammatory disease. HSG reveals multiple small outpouchings from the uterine cavity. What is the diagnosis?

(A) Salpingitis isthmica nodosa.
(B) Asherman syndrome.
(C) Adenomyosis.
(D) Endometritis.

068. Which of the following is correct regarding carcinoid of the GI tract?

(A) A minority are asyptomatic when discovered.

(B) The appendix is the most common site of occurrence, representing 33% of all carcinoids.

(C) Over 50% are multiple.

(D) The size of the tumour at diagnosis is related to the risk of metastatic spread.

069. A lesion is noted in the liver on CT and ultrasound. It is inferior, anterior, and to the left of the right hepatic vein, but to the right of the middle hepatic vein. It is inferior of the confluence of the right and left portal veins. According to the Couinaud system, what segment of the liver is the lesion in?

(A) Segment 4b.
(B) Segment 5.
(C) Segment 6.
(D) Segment 7.

070. A patient is undergoing a barium meal. What is the best position to place the patient in to see an enface view of the lesser curve?

(A) Left lateral.
(B) Left anterior oblique (LAO).
(C) Supine.
(D) Right anterior oblique (RAO).

071. A 30-year-old man undergoes CT of the abdomen following a high-velocity collision during an RTA. The scan reveals peripancreatic fat stranding and a superficial laceration in the tail of the pancreas, which extends to less than 50% of the pancreatic thickness. What is the next most appropriate step?

(A) Laparotomy.
(B) ERCP.
(C) Supportive therapy.
(D) Ultrasound to assess the pancreatic duct.

072. A 41-year-old female with a background of arthralgia, chronic abdominal pain, and diarrhoea is investigated via a small bowel series. Findings include a prolonged transit time, and dilated loops of small bowel with normal appearing valvulae and pseudodiverticula. What is the most likely diagnosis?

(A) GI scleroderma.
(B) Behcet's disease.
(C) Whipple disease.
(D) Small bowel lymphoma.

073. A 55-year-old man with a previous history of liver transplantation presents with a 1-week history of abdominal pain and distension. An abdominal x ray shows some distended small bowel loops centrally within the abdomen. You are asked to perform a CT scan of abdomen for further evaluation. This shows a cluster of non-encapsulated dilated small bowel loops adjacent to the anterior abdominal wall on the right side. There are adjacent crowded mesenteric vessels. What is the most likely diagnosis?

(A) Small bowel adhesions.
(B) Left paraduodenal hernia.
(C) Right paraduodenal hernia.
(D) Transmesenteric hernia.

074. Regarding the use of glucagon in barium enema examinations, which of the following statements is correct?

(A) 0.1mg of glucagon is an appropriate dose.

(B) Diabetes is a contraindication to the use of glucagon.

(C) Insulinoma is a contraindication to the use of glucagon.

(D) Glucagon can be safely used in patients with phaeochromocytoma.

075. A 54-year-old man has a CT scan of renal tracts for suspected right renal colic. The right renal tract is normal, but an incidental 6-cm well-defined cyst is noted within the spleen. There is no past medical history of note. What is the most likely aetiology of the splenic cyst?

(A) Previous trauma.

(B) Echinococcal infection.

(C) Congenital cyst.

(D) Liquefied infarct.

076. A 70-year-old woman presents with a history of high dysphagia. Barium swallow reveals a barium-filled sac extending postero-inferior from the C5/6 level to the left of the upper oesophagus. What is the most likely diagnosis?

(A) Pulsion diverticulum.

(B) Traction diverticulum.

(C) Zenker diverticulum.

(D) Early intramural diverticulosis.

077. A 75-year-old man is undergoing a CT colonography examination for investigation of a change in bowel habit. He has difficulty retaining the CO2 for adequate bowel distension. Which of the following segments of colon is likely to be better distended on the prone scan?

(A) Caecum.

(B) Transverse colon.

(C) Rectosigmoid.

(D) Ascending colon.

078. A 20-year-old male with a recent history of medulloblastoma now presents with vague abdominal pain, PR bleeding, and weight loss. Innumerable colonic polyps are demonstrated on colonoscopy. What is the most likely unifying diagnosis?

(A) Familial adenomatous polyposis.

(B) Turcot syndrome.

(C) Gardner syndrome.

(D) Lynch syndrome.

079. A 56-year-old male patient is referred for an ultrasound of abdomen prior to undergoing an anterior resection for a proximal rectal carcinoma. The ultrasound reveals a 2cm lesion in the right lobe of the liver, which is hyperechoic centrally with a hypoechoic rim. Which one of the following cannot be considered in the differential for this lesion?

(A) Metastases.

(B) Haemangioma.

(C) Sarcoid.

(D) Candidiasis.

080. A 20-year-old man presents with a swelling in his thigh. He recalls innocuous trauma at this site a few weeks earlier. Plain films suggest a soft tissue mass with peripheral calcification at the level of the mid femur with a radiolucent zone separating the lesion from cortex. MRI shows a heterogeneous, well defined soft tissue mass, isointense to muscle on T1W and hyperintense on T2W, with curvilinear ‘ peripheral areas of low signal intensity. Which of the following is the likeliest diagnosis?

(A) Myositis ossificans

(B) Parosteal sarcoma

(C) Tumoural calcinosis

(D) Rhabdomyosarcoma

081. A man with lower back pain has a plain lumbar radiograph. The LS vertebral body has slipped forward on S1 by 60% of the body diameter. What grade spondylolisthesis does this represent?

(A) I
(B) II
(C) III
(D) IV

082. A 10-year-old girl presents with precocious puberty and cafe au lait spots. McCune-Albright syndrome is suspected. Which of the following features would you not expect to see?

(A) A ground glass lesion in the medullary cavity of the femur
(B) Champagne glass appearance of the pelvis
(C) Endosteal scalloping of the femur with intervening normal cortex
(D) Cortical expansion of the ribs

083. A 45-year-old woman has hand radiographs for multiple joint pains. The radiographs show fusion of the distal interphalangeal joints. Which of the following is the least likely diagnosis?

(A) Erosive osteoarthritis
(B) Reiter's syndrome
(C) Rheumatoid arthritis
(D) Psoriatic arthropathy

084. A pelvic radiograph reveals sacroiliitis. This is most prominent on the lower and middle thirds of the joints, particularly on the iliac side. The changes are bilateral and symmetrical. These appearances are most commonly seen in which of the following conditions?

(A) Reiter's syndrome
(B) Rheumatoid arthritis
(C) Ankylosing spondylitis
(D) Osteoarthritis

085. A patient presents with joint pain and plain radiographs are taken. Which of the following features would favour the diagnosis of osteoarthritis over rheumatoid arthritis?

(A) Marginal erosions
(B) 'High-riding' shoulder
(C) Periarticular osteoporosis
(D) Superolateral migration of the femoral head

086. A 36-year-old woman with known polycystic kidney disease presents with a history of sudden onset headache and has signs of meningism. A CT brain reveals subarachnoid haemorrhage with haematoma within the septum pellucidum. What is the most likely site for an intracerebral aneurysm?

(A) Anterior communicating artery
(B) Posterior communicating artery
(C) A2 segment of an anterior cerebral artery
(D) Tip of the basilar artery

087. A 40-year-old man undergoes investigation for seizures. Brain CT with and without contrast shows a large, round, sharply marginated, hypodense mass involving the cortex and subcortical white matter of the left frontal lobe. The mass contains large nodular clumps of calcification. There is surrounding oedema and ill-defined enhancement. MRI demonstrates a heterogeneous mass which is predominantly isointense to grey matter on T1 and hyperintense on T2. There is moderate enhancement. What is the most likely diagnosis?

(A) Astrocytoma
(B) Ganglioglioma
(C) Ependymoma
(D) Oligodendroglioma

088. A 13-year-old boy is investigated for chronic headache and visual disturbance. CT shows a well-defined mass in the left middle cranial fossa. It is isodense to CSF. There are no calcifications, no surrounding oedema and no contrast enhancement. There is erosion of the underlying calvarium. You suspect this is an arachnoid cyst but your consultant suggests the possibility of an epidermoid cyst. What MR imaging sequence would best differentiate the two?

(A) Diffusion-weighted MR imaging
(B) Gadolinium-enhanced T1-weighted imaging
(C) Proton density imaging
(D) MR spectroscopy

089. A 48-year-old woman presents with symptoms of hyperparathyroidism. Radionuclide and ultrasound imaging suggest the cause is a solitary parathyroid adenoma. The surgeon requests further localisation with MRI prior to surgery. Which imaging sequence and plane would you choose as the most sensitive for detection of the adenoma?

(A) T1-weighted in the axial plane
(B) T2-weighted in the coronal plane
(C) FLAIR in the coronal plane
(D) T2 fat-suppressed in the axial plane

090. A 38-year-old gentleman presents with a dull ache in his jaw. There is minor swelling over the left mandible. Plain radiographs demonstrate an expansile, multilocular, radiolucent lesion with internal septations involving the left body of the mandible. It is associated with an impacted tooth. CT shows infiltration of the adjacent soft tissues. There are no discernible foci of calcification. What is the most likely diagnosis?

(A) Odontogenic myxoma
(B) Dentigerous cyst
(C) Odontogenic keratocyst
(D) Ameloblastoma

091. A 33-year-old male with no significant past medical history presents with headache, drowsiness and confusion. CT shows a hypodense lesion with a smooth regular wall centred over the left lentiform nucleus. There is surrounding oedema and mass effect with effacement of the ipsilateral Sylvian fissure. On T2-weighted MR imaging, the lesion is hyperintense and is surrounded by a hypointense rim and hyperintense oedema. There is peripheral enhancement post-contrast injection, and diffusion-weighted imaging demonstrates restricted diffusion within the lesion. What is the most likely diagnosis?

(A) Glioblastoma multiforme
(B) Pyogenic abscess
(C) Toxoplasmosis
(D) Lymphoma

092. A three-year-old girl undergoes further investigation for refractory seizures. Contrast-enhanced T1-weighted imaging shows diffuse pial enhancement of variable thickness over the parieto-occipital region of the right cerebral hemisphere. There is atrophy of the underlying cerebrum and the right choroid plexus is enlarged. Several hypointense foci are seen within the gyri and adjacent white matter. There is also bilateral well-defined orbital choroidal enhancement. T2-weighted imaging demonstrates prominent superficial cortical veins. What is the most likely diagnosis?

(A) Klippel–Trenaunay syndrome
(B) Sturge–Weber syndrome
(C) Wyburn–Mason syndrome
(D) Neurofibromatosis

093. A 60-year-old man presents with back pain and progressive paraparesis. T1-weighted MR imaging shows loss of T9–T10 disc space with hypointense signal involving multiple contiguous vertebral bodies. Skip involvement of T3 and L1 vertebral bodies is evident. T2-weighted imaging shows a large paraspinal and prevertebral mass. An anterior epidural collection is seen compressing the cord. On post-contrast T1-weighted imaging the vertebral bodies show inhomogeneous enhancement and the paraspinal mass shows peripheral enhancement with central necrosis. What is the most likely cause?

(A) Pyogenic infection
(B) Lymphoma
(C) Sarcoidosis
(D) Tuberculosis

094. A four-month-old male undergoes investigation for microcephaly and hearing loss. Unenhanced CT brain shows several periventricular subependymal cysts and multiple coarse periventricular and parenchymal white matter calcifications. There is diffuse hypoplasia of the cerebellum. What is the most likely diagnosis?

(A) Tuberous sclerosis
(B) Sturge–Weber syndrome
(C) Cytomegalovirus infection
(D) Venous sinus thrombosis

095. A 23-year-old woman undergoes investigation for dyspareunia. Pelvic ultrasound was unremarkable. MRI demonstrates a 1 cm thin-walled ovoid cystic lesion at the anterolateral aspect of the upper vagina. It is homogeneously hypointense on T1 and shows marked hyperintensity on T2. What is the most likely diagnosis?

(A) Bartholin cyst
(B) Nabothian cyst
(C) Cervical fibroid
(D) Gartner duct cyst

096. A 45-year-old male is diagnosed with renal cell carcinoma and is being worked up for curative nephrectomy. Which one of the following imaging modalities would you advise as being the most accurate at ruling out malignant renal vein invasion?

(A) Doppler ultrasound
(B) B-mode ultrasound
(C) CT
(D) MRI

097. A 19-year-old female presents with vague lower abdominal pain. Ultrasound shows a right 5 cm thin-walled unilocular ovarian cyst. Follow-up ultrasound six weeks later shows cyst regression. What is the most likely diagnosis?

(A) Corpus luteum cyst
(B) Endometrioma
(C) Serous cystadenoma
(D) Follicular cyst

098. An 18-year-old woman who is 32 weeks pregnant is referred for an obstetric ultrasound for ongoing abdominal pain. She is shown to have a small placenta relative to gestational age. Which one of the following would be a possible cause?

(A) Molar pregnancy
(B) Maternal diabetes
(C) Umbilical vein obstruction
(D) Pre-eclampsia

099. A 37-year-old male undergoes an intravenous urogram and the right ureter is deviated medially in the lumbar region. Which one of the following could explain this finding?

(A) Psoas muscle hypertrophy
(B) Para-aortic lymphadenopathy
(C) Retrocaval ureter
(D) Urinoma

100. A 71-year-old female with scleroderma undergoes a barium swallow examination. Which one of the following findings concerning the oesophagus would not be consistent with this diagnosis?

(A) Oesophageal dilatation
(B) Superficial ulcers
(C) Hypoperistalsis in the upper third of the oesophagus
(D) Stricture 5 cm above the gastro-oesophageal junction

101. All of the following cause hyper-vascular metastases except:

(A) Carcinoid
(B) Renal cell carcinoma
(C) Melanoma
(D) Lymphoma

102. Wheel within wheel appearance is commonly seen in sonography of which hepatic infection?
(A) Candidiasis
(B) Schistosomiasis
(C) Amebic liver abscess
(D) Pneumocystis jirovecii

103. Turtle back appearance is commonly seen in computed tomography of which infection:
(A) Fasciola hepatica
(B) Schistosomiasis
(C) Pyogenic liver abscess
(D) Tuberculosis

104. All the following are imaging features of sub ependymal giant cell astrocytoma except
(A) Presence of calcification
(B) Prominent vascular flow voids
(C) Strong heterogenous enhancement
(D) Absence of calcification

105. On MR spectroscopy prominent lipid lactate peak is seen in CNS tuberculosis at
(A) Short TE
(B) Intermediate TE
(C) Long TE
(D) None of the above

106. Computed tomography Adrenal protocol include all the following except
(A) Unenhanced CT
(B) 65-75sec delay following contrast injection
(C) 210 sec delay following contrast injection
(D) 15 mins delay after contrast injection

107. Atoll sign on CT is seen in
(A) Organizing pneumonia
(B) Angio invasive aspergillosis
(C) Legionella pneumonia
(D) Both (A) and (B)

108. Average of normal broncho-alveolar ratio is
(A) 0.8-1.0
(B) 1.0-1.2
(C) 0.65-0.70
(D) 2.0-2.5

109. Which of the following is the most common feature of nonspecific interstitial pneumonia
(A) Ground glass opacity with relative sub pleural sparing
(B) Honeycombing
(C) Upper zone predominance of ground glass opacity
(D) Traction bronchiectasis

110. All the following are features of LAM except
(A) Relatively uniform sized lung cysts
(B) Associated with tuberous sclerosis
(C) Relative sparing of costophrenic angles
(D) Diffuse lung involvement

111. Resistance index in Doppler ultrasonography is
(A) Maximum velocity excursion / Mean velocity
(B) Systolic velocity / Diastolic velocity
(C) Systolic velocity - Diastolic velocity / Diastolic velocity
(D) Mean velocity / Diastolic velocity

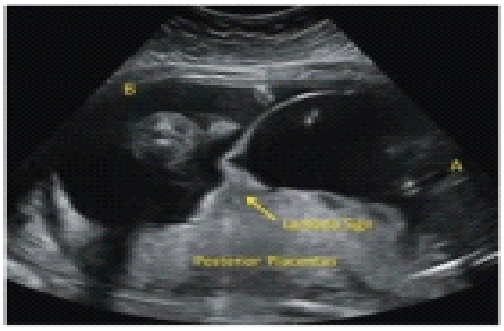
112. Whirlpool sign is seen on sonography in cases of

(A) Adnexal torsion
(B) Ectopic pregnancy
(C) Mucocele of appendix
(D) Caecal volvulus

113. Sonographic findings definitive for failed intro uterine pregnancy include

(A) CRL more than equal to 7 mm with no cardiac activity
(B) Amnion seen adjacent to yolk sac with no visible embryo
(C) MSD between 16 and 24 mm with no embryo
(D) Large sub chorionic hematoma

114.



The above sign is a useful sonographic indicator of

(A) Monochorionicity
(B) Mono-amniotic twin gestation
(C) Dichorionic twin gestation
(D) Placenta previa

115. Patient with blunt abdominal trauma on imaging shows left renal parenchymal laceration extending through the renal cortex and reaching up to the collecting system. The AAST grading for renal injury for this patient is

(A) Grade II
(B) Grade III
(C) Grade IV
(D) Grade V

116. Most common location in increasing order of frequency of hypertensive intracranial haemorrhage

1. Lobar haemorrhage 2. Pons and cerebellum 3. Thalamus 4. Putamen.

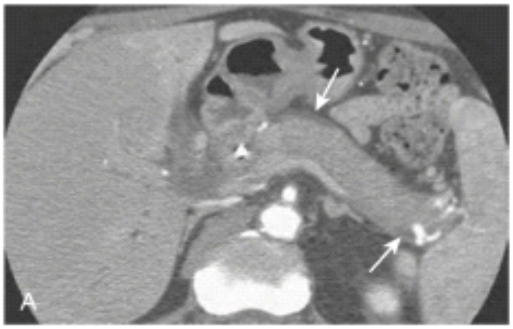
(A) 3 < 4 < 1 < 2
(B) 1 < 2 < 3 < 4
(C) 4 < 3 < 2 < 1
(D) 2 < 1 < 4 < 3

117. All the following are extra axial intracranial lesions except

(A) Arachnoid cyst
(B) Pineal cyst
(C) Meningioma
(D) Oligodendroglioma

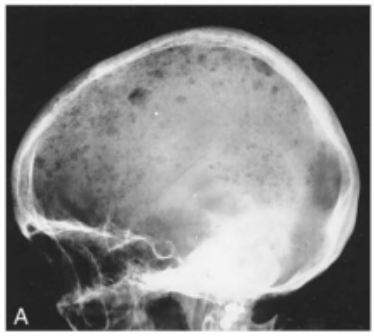
118. Soda straw fourth ventricle, beaked tectum and large massa intermedia are imaging features of

(A) Chiari 1
(B) Chiari 2
(C) Chiari 1.5
(D) Chiari 0

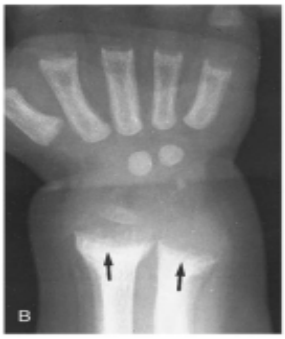
119. 

Peripancreatic hypo-dense rim(arrows) is suggestive of

(A) Chronic calcific pancreatitis
(B) Autoimmune pancreatitis
(C) Groove pancreatitis
(D) None of the above

120. Raindrop skull is seen in 

(A) Renal osteodystrophy
(B) Hyperparathyroidism
(C) Multiple myeloma
(D) Thalassemia

121. 

The X ray is suggestive of

(A) Rickets
(B) Scurvy
(C) Hypervitaminosis
(D) Heavy metal poisoning

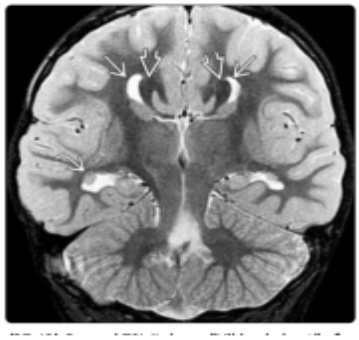
122. All the following are primary effects of trauma except

(A) Tonsillar herniation
(B) Diffuse axonal injury
(C) Subdural hematoma
(D) Pneumocephalus

123. Fogging effect on T2 weighted images is seen in

(A) Hyper-acute stroke
(B) Subacute stroke
(C) Acute stroke
(D) Chronic stroke

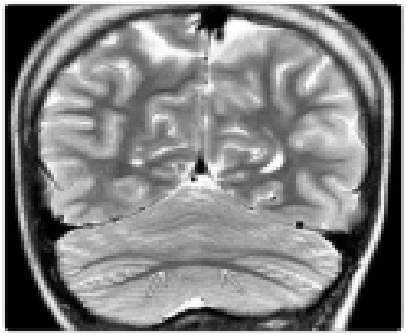
124.



Coronal T2 weighted MR image shows

(A) Corpus callosal hypogenesis
(B) Complete corpus callosal agenesis
(C) Post callosotomy
(D) Mega corpus callosum

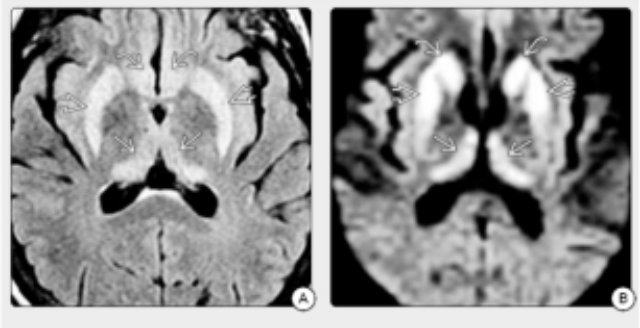
125.



Coronal T2 weighted MR image shows

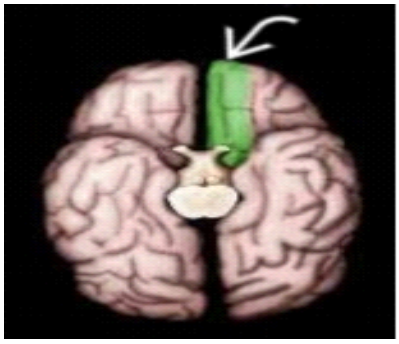
(A) Joubert syndrome
(B) Rhombencephalosynapsis
(C) Cerebellar disruption
(D) Cerebellar hyperplasia

126.



A 40-year-old male presented with dementia, disorientation and personality change with rapid progression of symptoms, resulting in death 6 months from diagnosis with the above given imaging features. The most probable diagnosis is

(A) Lewy body dementia
(B) Frontotemporal lobar degeneration
(C) Creutzfeldt Jakob disease
(D) Multiple sclerosis

127. 

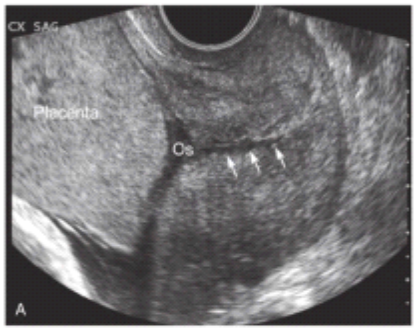
The marked area is supplied by

(A) MCA
(B) ACA
(C) Anterior communicating artery
(D) Posterior communicating artery

128. In cases of acute cerebral ischemia infarction, ischemic penumbra is characterized by

(A) Reduced cerebral blood volume and reduced cerebral blood flow
(B) Increased cerebral blood volume and increased cerebral blood flow
(C) Transiently increased cerebral blood volume and reduced cerebral blood flow
(D) Reduced cerebral blood volume and increased cerebral blood flow

129. A gravid patient at 32 weeks gestation came with complaints of painless bleed per vaginum with sonography showing the following features.



(A) Placenta percreta
(B) Placenta previa
(C) Placental abruption
(D) Placenta accreta

130. All the following are imaging features of idiopathic intracranial hypertension except

(A) Partial empty sella
(B) Flattening of posterior globe
(C) Intra optic disc protrusion
(D) Diffuse thickened enhancing dura

131. A 32-year-old builder is brought to the Emergency Department following a fall from scaffolding. He is believed to have fallen a considerable height and witnesses report that he landed on his feet. On primary survey, he is tachycardia, hypotensive and extremely tender on palpation of the pelvis and left hip. During resuscitation, a radiographic trauma series is obtained. What is the most likely pattern of pelvic injury?

(A) Bilateral fractures of the superior and inferior pubic rami
(B) Bilateral fractures of the superior and inferior pubic rami with a fracture through the left sacral ala
(C) Disruption of the sacroiliac joints and pubic symphysis
(D) Vertical fracture through the left ilium with fractures through the left superior and inferior pubic rami

132. A 70-year-old man recently underwent a laparoscopic prostatectomy. He now presents to the Emergency Department complaining of shortness of breath, pleuritic chest pain and haemoptysis. D-dimer levels were measured and found to be significantly elevated. A CXR is performed as part of the initial set of investigations. Which one of the following is the most likely CXR finding?

(A) A normal chest radiograph
(B) Linear atelectasis
(C) Localised peripheral oligemia
(D) Peripheral airspace opacification

133. A 16-year-old man has been sent for a CXR by his GP. He has had a chronic cough for 3 months and the GP is concerned that there may be an underlying pneumonia. Having reviewed the film and decided that this is not the case, you note the presence of a unilateral hypertransradiant hemithorax. Which of the following causes would not be in your differential diagnosis?

(A) MacLeod's syndrome
(B) Poland's syndrome
(C) Poliomyelitis
(D) Pulmonary agenesis and hypoplasia

134. A 27-year-old, previously fit and well man presents to his GP with a short history of pyrexia, cough and haemoptysis. He has never previously been admitted to hospital. Sputum culture has grown Streptococcus pneumoniae. What is the most likely chest radiograph finding?

(A) Bronchopneumonia
(B) Cavitation
(C) Empyema
(D) Lobar consolidation

135. A 15-year-old girl has a follow-up CXR and ultrasound scan of her liver. She is known to have had meconium ileus at birth and has subsequently suffered with recurrent chest infections, poor weight gain, loose malodorous stools and multiple gallstones. Which of the following findings is most likely to be present on the CXR?

(A) Bronchiectasis with a predominant lower lobe distribution
(B) Ground glass opacity
(C) In-dwelling venous catheter
(D) Pleural effusion

136. A previously fit and well 50-year-old man presents with progressive dyspnoea for one year. On CXR, there are bilateral, peripheral reticular opacities seen at the lung bases. On HRCT chest, there is a subpleural basal reticular pattern with areas of honeycomb change seen. Which one of the following is the most likely diagnosis?

(A) Acute interstitial pneumonia (AIP)
(B) Cryptogenic organising pneumonia (COP)
(C) Desquamative interstitial pneumonia (DIP)
(D) Usual interstitial pneumonia (UIP)

137. A 26-year-old man presents to the Emergency Department with acute epigastric pain and vomiting. The serum amylase is found to be markedly elevated, and the patient is treated for acute pancreatitis. A contrast enhanced CT of the abdomen is subsequently performed and demonstrates calcification throughout the pancreas. Bilateral renal calculi are also noted. What is the most likely underlying diagnosis?

(A) Hereditary pancreatitis
(B) Hyperparathyroidism
(C) Hypoparathyroidism
(D) Mucinous cystadenocarcinoma

138. A 29-year-old man presents with a 6-month history of dysphagia, associated with retrosternal pain. A barium swallow demonstrates a markedly dilated oesophagus containing food debris. There is a smooth narrowing of the distal oesophagus with barium intermittently spurting into the stomach. What is the most likely diagnosis?

(A) Oesophageal achalasia
(B) Oesophageal leiomyoma
(C) Paraesophageal hiatus hernia.
(D) Peptic oesophageal stricture

139. A 52-year-old man undergoes a thoracoabdominal oesophagectomy for squamous cell carcinoma of the mid oesophagus. The patient has an uncomplicated postoperative recovery and is discharged home. Four weeks later, a chest radiograph is performed. Which one finding would be unexpected on this chest radiograph?

(A) Absence of right 5th rib posteriorly
(B) Retrocardiac air: fluid level
(C) Right paramediastinal soft tissue density mass
(D) Moderate left hydropneumothorax

140. A 47-year-old woman with obstructive jaundice undergoes an MRCP examination. This demonstrates a smooth stricture in the mid-common duct with associated moderate intrahepatic biliary dilatation. The stricture is caused by extrinsic compression from a round filling defect within the cystic duct. What is the diagnosis?

(A) Acute bacterial cholangitis
(B) Gallbladder carcinoma
(C) Mirizzi syndrome
(D) Post inflammatory biliary stricture

141. A 27-year-old man is referred to the hepatology outpatient clinic with a 3-week history of malaise, lethargy and mild upper abdominal pain. Liver function tests performed by his GP are significantly abnormal. The results of hepatitis serology performed in the clinic are consistent with an acute hepatitis B infection. An abdominal ultrasound is performed. What is the most likely finding on ultrasound?

(A) Decreased reflectivity of the liver parenchyma
(B) Increased reflectivity of the liver parenchyma
(C) Nodular liver surface
(D) Normal ultrasound appearances

142. A 35-year-old man has a history of excess alcohol intake and is referred for an abdominal ultrasound by his GP. This demonstrates a 3-cm area of increased reflectivity within liver segment 4a. The lesion does not have any mass effect on adjacent vessels and has a geographic margin. A diagnosis of focal fat deposition is suspected and an MRI of the liver is performed. Which MRI artefact can be utilised to confirm this diagnosis?

(A) Aliasing
(B) Chemical shift
(C) Magic angle
(D) Susceptibility

143. A 12-year-old child is suspected to have a diagnosis of neurofibromatosis. Which one of the following radiological findings would favour a diagnosis of neurofibromatosis type 1 over neurofibromatosis type 2?

(A) Bilateral acoustic neuromas
(B) Leptomeningeal angiomas
(C) Multiple meningiomas
(D) Sphenoid wing hypoplasia

144. A 30-year-old man has a CT head to investigate headaches. This shows a low attenuation mass in the left temporoparietal region which has similar density to CSF and shows no enhancement following contrast administration. Which one of the following radiological findings would support a diagnosis of epidermoid cyst rather than arachnoid cyst?

(A) High signal on diffusion-weighted MRI (B) High signal on FLAIR MRI

(C) Low signal on diffusion-weighted MRI (D) Thinning of the overlying bone

145. A young patient undergoes CT of the paranasal sinuses. The main finding is an enhancing nasal mass with widening of the left pterygopalatine fissure. What is the most likely diagnosis?

(A) Adenoid cystic carcinoma (B) Angiofibroma

(C) Angiosarcoma (D) Inverting papilloma

146. A 22-month-old child with developmental delay presents with seizures. The MRI findings include hydrocephalus with a markedly dilated fourth ventricle and hypoplasia of the cerebellar vermis. Which one of the following is the most likely diagnosis?

(A) Chiari II malformation (B) Dandy-Walker malformation

(C) Encephalocele (D) Holoprosencephaly

147. A 9-year-old girl is referred for a neck ultrasound to investigate a superficial swelling at the angle of her left mandible. The scan reveals a well-defined, anechoic lesion anterior to the left sternocleidomastoid muscle with posterior acoustic enhancement. What is the most likely diagnosis?

(A) Pseudoaneurysm of the left common carotid artery

(B) Ranula

(C) Second branchial cleft cyst

(D) Third branchial cleft cyst

148. A 21-year-old man has facial and mandibular radiographs following minor trauma. These show no evidence of fracture, however there are multiple dense bony lesions arising from the paranasal sinuses and the angle and ramus of the mandible. These lesions are entirely asymptomatic. Which one of the following conditions may be associated with these findings?

(A) Gardner's syndrome (B) Gorlin-Goltz syndrome

(C) Juvenile polyposis (D) Klippel-Feil syndrome

149. A GP requests your advice regarding an 18-month-old girl whose mother has noticed that her left pupil appears white. The GP has performed ophthalmoscopy and is suspicious that there is a retinal mass. Which one of the following is the investigation of choice?

(A) CT orbits (B) MRI orbits

(C) Orbital radiographs (D) Repeat ophthalmoscopy by ophthalmologist

150. A 67-year-old woman with known osteoarthritis presents with lower back pain radiating down her left leg. She has an MRI of the lumbar spine which shows a lesion at the L4—5 facet joint with compression of the thecal sac at this level. The lesion is of intermediate signal on T2W images and is displacing the ligamentum flavum. What is the most likely diagnosis?

(A) Astrocytoma (B) Disc protrusion

(C) Ependymoma (D) Synovial cyst

151. A 22-year-old woman presents with visual loss and headaches. On examination, she has bilateral visual field defects and decreased visual acuity. CT reveals foci of calcification at both optic nerve heads. What is the most likely diagnosis?

(A) Choroidal haemangioma
(B) Drusen
(C) Leukaemia
(D) Optic neuritis

152. A 72-year-old man presents with increasing leg weakness and incontinence. There is a past medical history of previous TB of the spine. An MRI of the lumbar spine shows a tapered appearance of the lower end of the subarachnoid space and the thecal sac appears empty but thick-walled. Which one of the following is the most likely diagnosis?

(A) Arachnoiditis
(B) Discitis
(C) Dural arteriovenous malformation
(D) Epidural abscess

153. A neonate is diagnosed with congenital tracheoesophageal (TE) fistula. A plain film demonstrates a gasless abdomen. Which type of TE fistula is associated with this finding?

(A) Type B
(B) Type C
(C) Type D
(D) Type E

154. A 60-year-old female has a plain abdominal film which shows a grossly distended segment of bowel. Which one of the following features makes a diagnosis of caecal volvulus more likely than sigmoid volvulus?

(A) Pelvic overlap sign
(B) Apex lying above the level of T10
(C) Liver overlap sign
(D) Presence of haustral markings

155. A 40-year-old man is admitted to the surgical ward with acute abdominal pain and subsequently a CT abdomen and pelvis is requested. The findings include a 3 cm oval mass with central fat density adjacent to the sigmoid colon and with associated fat stranding. Which one of the following is the most likely diagnosis?

(A) Diverticulitis
(B) Epiploic appendagitis
(C) Mesenteric lymphadenitis
(D) Meckel's diverticulitis

156. A seven-year-old boy on chemotherapy for acute leukaemia develops severe right iliac fossa pain and diarrhoea. CT shows ascending colon and caecal wall thickening, with inflammation extending to involve the appendix and terminal ileum and fat stranding in the adjacent mesentery. The most likely diagnosis is:

(A) Typhlitis
(B) Crohn's disease
(C) Acute appendicitis
(D) Necrotising enterocolitis

157. An 83-year-old woman is investigated for weight loss, and undergoes contrast enhanced CT scan of the chest, abdomen and pelvis. Multiple hyper vascular metastases are found in the liver. Which one of the following is most likely to be the primary tumour?

(A) Adenocarcinoma of the stomach
(B) Invasive ductal carcinoma of the breast
(C) Carcinoid tumour
(D) Adenocarcinoma of the sigmoid

158. A 56-year-old woman is diagnosed with pancreatic adenocarcinoma. Which one of the following features on the pancreatic MR contraindicates curative surgery?

(A) Splenic vein invasion
(B) Tumour size of 2 cm
(C) Portal vein invasion
(D) Hepatic artery invasion

159. A 67-year-old man is referred for a barium swallow from the surgical outpatient department with a history of dysphagia to solids. A mid-oesophageal stricture is demonstrated. Which one of the following causes is unlikely to be in the differential?

(A) Barrett's oesophagus
(B) Squamous cell carcinoma of the oesophagus
(C) Schatzki ring
(D) Caustic substance ingestion

160. A 27-year-old male has recurrent admissions for intermittent low-grade small bowel obstruction of unknown cause. Which one of the following investigations would be most appropriate?

(A) Contrast-enhanced CT abdomen and pelvis
(B) Barium meal
(C) Small bowel enteroclysis
(D) Serial abdominal plain films

161. A 61-year-old man undergoes CT abdomen and pelvis for characterisation of a well-defined hyperechoic area seen on ultrasound in the perihilar region of the liver. On CT the area is of decreased attenuation but has no obvious mass effect. There is no abnormal enhancement with intravenous contrast administration. Which one of the following diagnoses is most likely?

(A) Focal nodular hyperplasia
(B) Focal fatty infiltration
(C) Hepatic cyst
(D) Liver haemangioma

162. A 34-year-old female is investigated for intermittent abdominal pain and malabsorption. Small bowel meal shows dilatation of the proximal small bowel loops but a normal mucosal fold pattern. Which one of the following is the most likely underlying diagnosis?

(A) Coeliac disease
(B) Amyloid
(C) Whipple disease
(D) Giardiasis

163. A six-week-old child has an ultrasound scan of the abdomen performed for non-bilious projectile vomiting. Which one of the following features would support a diagnosis of infantile pylorospasm over a diagnosis of hypertrophic pyloric stenosis?

(A) Pyloric muscle wall thickness of 2 mm
(B) Pyloric canal length of 19 mm
(C) Target sign
(D) Antral nipple sign

164. A 58-year-old male with unexplained elevated alkaline phosphatase has an MRCP and the 'double-duct' sign is observed. Which one of the following diagnoses is most likely to cause this finding?

(A) Acute pancreatitis
(B) Annular pancreas
(C) Pancreas divisum
(D) Periampullary tumour

165. A 19-year-old man, the unrestrained driver in a high-energy road traffic accident, has been brought by ambulance to the Emergency Department. A lateral cervical spine radiograph shows an anterior wedge fracture of C5 with a retropulsed bony fragment. What was the likely predominant force acting on the cervical spine at the time of injury?

(A) Compression
(B) Distraction
(C) Extension
(D) Flexion

166. A 39-year-old woman has an ultrasound scan for right upper quadrant pain and jaundice which reveals biliary ductal dilatation to the level of the common hepatic duct adjacent to a stone in the gallbladder neck. The gallbladder is thick-walled and tender. MRCP confirms these findings and excludes common duct stones. Which one of the following is the most likely diagnosis?

(A) Primary sclerosing cholangitis
(B) Mirizzi syndrome
(C) Caroli's disease
(D) Fascioliasis

167. A 35-year-old woman presents with chest infection and pyrexia and the plain film reveals dense lobar consolidation with bulging fissures. The likely micro-organism is:

(A) Legionella pneumophila
(B) Pneumocystis carinii
(C) Staphylococcus
(D) Klebsiella

168. In an investigation for lung malignancy, all the following may produce a false positive result on a PET-CT except:

(A) Pulmonary hamartoma
(B) Intralobar sequestration
(C) Tuberculosis
(D) Pneumonia

169. A 70-year-old man, previously working in a ship-building yard, presents with progressive breathlessness. Chest radiograph demonstrates bilateral calcified pleural plaque disease with volume loss. Lung function shows a restrictive pattern. HRCT reveals pulmonary fibrosis. The most likely site of these changes would be:

(A) Perihilar
(B) Apical
(C) Peribronchial
(D) Subpleural

170. A 51-year-old man with long standing history of an erosive arthropathy of the acromioclavicular joints and bilateral arthropathy in his hands subsequently develops progressive shortness of breath. The most likely abnormality on his chest radiograph would be:

(A) Cavitating nodules
(B) Peripheral basal reticulonodular shadowing
(C) Cardiomegaly
(D) Pleural effusion

171. A 22-year-old is diagnosed with tuberculosis. Which of the following features will make a diagnosis of primary tuberculosis more likely?

(A) Mediastinal enlargement
(B) Septal thickening
(C) Upper zone cavitation
(D) Miliary nodules

172. A 26-year-old man suffers a blunt injury to his chest in a road traffic accident. The most common abnormality seen on CT because of blunt thoracic injury is:

(A) Pneumothorax
(B) Pulmonary laceration
(C) Haemothorax
(D) Pulmonary contusion

173. The staging chest CT of a 40-year-old man with a known primary malignancy demonstrates cavitating pulmonary metastases. The least likely type of primary lesion would be:

(A) Squamous cell carcinoma
(B) Malignant melanoma
(C) Renal cell cancer
(D) Sarcomas

174. A 40-year-old man with a known malignancy presents with pericardial metastases and pericardial effusion. The metastatic deposits are high signal on T1-weighted imaging. Which is the likely primary diagnosis?

(A) Lymphoma
(B) Lung cancer
(C) Melanoma
(D) Fibrosarcoma

175. A 25-year-old man has a routine chest radiograph prior to a work permit application. It demonstrates a well-defined, rounded mediastinal mass. Which of the following features on CT would make a diagnosis of bronchogenic cyst less likely?

(A) Soft-tissue density
(B) Thick wall
(C) Precarinal location
(D) Communication with tracheal lumen

176. A 34-year-old IV drug abuser presents with fever, rigors, and back pain. Blood cultures reveal staphylococcal septicaemia. CT demonstrates a mycotic aneurysm. Which of the following is the most likely CT feature?

(A) Fusiform shape
(B) Perianeurysmal soft-tissue mass
(C) Pseudoaneurysm
(D) Periaortic gas collection

177. A 35-year-old female presents with generalised malaise and cough, occasionally bringing up grape-skin-like material. Blood screen reveals eosinophilia. The patient has a history of travel to several countries worldwide. Which of the following plain film features is unlikely?

(A) Homogenous ovoid opacity
(B) Cyst with a fluid level
(C) Bilateral opacities
(D) Calcification

178. A 22-year-old female patient with a known phakomatosis presents with anaemia and hypotension. CT angiogram reveals evidence of active bleeding in some of the multiple areas of low attenuation (approximately –20) seen scattered throughout both her kidneys. Which of the following features may be seen on chest CT?

(A) Multiple pulmonary AVMs
(B) Multiple bilateral small cysts
(C) Mediastinal mass
(D) Thin-walled upper zone bullae

179. The HRCT of a 35-year-old patient with shortness of breath and reticulonodular disease pattern on plain chest radiograph reveals cavitating nodules with interstitial septal thickening. Which of the following diagnoses is the least likely?

(A) Lymphangioleiomyomatosis
(B) Langerhans' cell histiocytosis
(C) Wegener's granulomatosis
(D) Sarcoidosis

180. A patient with a known collagen vascular disease has pulmonary fibrosis. HRCT reveals bilateral lower lobe bronchiectasis. Which collagen vascular disease is most likely?

(A) Sjogren syndrome
(B) Progressive systemic sclerosis
(C) SLE
(D) Rheumatoid arthritis

181. A 22-year-old man is brought to the Emergency Department with a 2-day history of increasingly severe upper abdominal pain and vomiting. He has not opened his bowels for 24 hours but has passed flatus. The patient is usually fit and well but admits to consuming 100 units of alcohol per week. Initial laboratory investigations show an elevated white cell count and a significantly raised serum amylase. An abdominal radiograph is performed and demonstrates a single segment of dilated small bowel in the central abdomen. What name is given to this radiographic finding?

(A) Arrowhead sign
(B) Bird of prey sign
(C) Football sign
(D) Sentinel loop sign

182. A 17-year-old girl presents with pain in the distal forearm which has worsened over the last six to eight weeks. Plain films show an eccentric lytic radiolucency in the distal radius with a soap-bubble appearance. The most likely pathology is:

(A) Enchondroma
(B) Aneurysmal bone cyst
(C) Simple bone cyst
(D) Fibrous dysplasia

183. A 20-year-old man presents with an increasingly painful right thigh which is worse at night. Plain films of the area show a lucent area measuring approximately 8–9 mm in the distal femur surrounded by extensive sclerosis. The most likely diagnosis is:

(A) Osteoblastoma
(B) Giant cell tumour
(C) Brodie's abscess
(D) Osteoid osteoma

184. A 32-year-old footballer sustains an avulsion injury to the anterior superior iliac spine during training. Which of the following muscles is likely to be affected?

(A) Sartorius
(B) Gracilis
(C) Iliopsoas
(D) Rectus femoris

185. In a 26-year-old woman with sickle cell disease, which one of the following would not be considered a typical musculoskeletal manifestation of the disease?

(A) Osteopenia and trabecular thinning
(B) 'Bone within bone' appearance
(C) Avascular necrosis of the femoral head
(D) Posterior vertebral scalloping

186. A routine pre-operative chest X-ray in a 62-year-old woman shows bilateral erosion of the distal clavicles. Which one of the following conditions might be responsible?

(A) Hypoparathyroidism
(B) Rheumatoid arthritis
(C) Langerhans' cell histiocytosis
(D) Ankylosing spondylitis

187. A 74-year-old woman with back pain presents to her GP. Initial plain radiographs of her spine show multiple sclerotic metastatic lesions. The most likely primary tumour would be:

(A) Renal cell carcinoma
(B) Melanoma
(C) Bronchial carcinoid
(D) Bladder

188. A 75-year-old woman presents with increasing pain in her left hip. She had a total hip replacement eight years ago on this side which has been asymptomatic ever since. Plain radiographs demonstrate a lucent line at the bone cement interface of the femoral component. The likely cause for this is:

(A) Infection
(B) Metastasis
(C) Loosening
(D) Myeloma

189. A 27-year-old man who attends Emergency Medicine Department following an alleged assault is shown to have a left-sided longitudinal temporal bone fracture. Which of the following is a correct association?

(A) Facial nerve palsy in 50% of cases
(B) Incudostapedial joint dislocation
(C) Sensorineural hearing loss
(D) Ophthalmoplegia

190. A dental radiograph of a 47-year-old woman shows loss of the lamina dura of the majority of the teeth. Which of the following would be a possible cause?

(A) Osteopetrosis
(B) Hypoparathyroidism
(C) Scleroderma
(D) Sickle cell anaemia

191. An 18-year-old man undergoes a Tc MDP bone scan to investigate pain in the right hip. A 'hot' lesion is seen in the right proximal femur. No other lesions are seen. Which of the following lesions would appear as 'hot' on a Tc MDP bone scan?

(A) Osteopoikilosis
(B) Fibrous cortical defect
(C) Acute fracture within 12 hours of injury
(D) Fibrous dysplasia

192. A 27-year-old man falls onto his right hand during a game of rugby. He attends the Emergency Medicine department, and a plain film of the right hand shows a comminuted fracture through the base of the thumb metacarpal with an intra-articular component. This is the description of which of the following fractures?

(A) Rolando's fracture
(B) Bennett's fracture
(C) Gamekeeper's thumb
(D) Boxer's fracture

193. A young woman with Turner syndrome is found to be hypertensive. On examination, her femoral pulses are delayed, relative to the carotid pulses. In addition, there is mid to late systolic murmur. Which one of the following is the most likely radiological finding?

(A) an 8-sign due to modelling deformities of the major thoracic vessels

(B) an enlarged external mammary artery on the lateral plain chest radiograph

(C) Elevated left ventricular apex

(D) Rib notching affecting all ribs

194. A 50-year-old man undergoes routine preoperative CXR. The reporting radiologist notes that the heart is shifted to the left, the right heart border is indistinct and there is steep inferior slope of the anterior ribs .Which one of the following syndromes may be associated with these findings?

(A) Churg strauss syndrome

(B) Eisenmengers syndrome

(C) Marfans syndrome

(D) Swyer james syndrome

195. A young man is involved in a road traffic accident and complains of pleuritic chest pain and shortness of breath. An initial supine CXR performed in the emergency department demonstrates several left sided posterior rib fractures. There is also suspicion that a pneumothorax is present. Once stabilised the patient attends the radiology department for an erect PA Chest radiograph. Which one of the following signs not seen on the initial supine film will now predominate?

(A) A deep left costophrenic recess laterally

(B) Left apical transradiancy and pleural line

(C) Undue clarity of the left mediastinal border

(D) Unilateral left lung transradiancy

196. A 48-year-old man presents with a painless swelling in the right scrotum. He has a past medical history of bilateral undescended testes and subsequent orchidopexy. On examination, there is a firm right testicular lump but no inguinal lymphadenopathy. On ultrasound, a well-defined, homogeneous hyporeflective mass was found within the right testicle. The right epididymis and contralateral testicle appeared normal. What is the most likely diagnosis?

(A) Leukaemic testicular infiltrate

(B) Testicular epidermoid cyst

(C) Testicular metastasis

(D) Testicular seminoma

197. A previously fit and well 30-year-old woman undergoes a CT pulmonary angiogram for suspected pulmonary embolism. The CTPA excludes a pulmonary embolism, but an incidental mediastinal mass is noted. This solitary mediastinal mass is seen inferior to the carina with displacement of the carina anteriorly and the oesophagus displaced posteriorly. The contents of the lesion are of uniform attenuation 0 HU. Prior to this admission the patient had not reported any symptoms of note. Which is the most likely diagnosis?

(A) Bronchogenic cyst

(B) Mediastinal pancreatic pseudocyst

(C) Neurenteric cyst

(D) Neurogenic tumor

198. An athletic 19-year-old medical student presents to the Emergency Department after sustaining an injury to his right hip during training. The radiograph reveals a fracture of the anterior superior iliac spine. What is the most likely diagnosis?

(A) Avulsion of the adductor muscles

(B) Avulsion of the hamstring muscles

(C) Avulsion of iliopsoas

(D) Avulsion of sartorius

199. **The radiograph of an 8-year-old boy with dietary Vitamin D deficiency reveals cupping and fraying of the distal tibial metaphysis. Which radiological finding is a recognised feature of this condition?**

(A) Cortical sclerosis involving the margin of the epiphysis

(B) Expansion of the costochondritis

(C) Exuberant periosteal reaction

(D) Increased density of the end of the metaphysis

200. **A 60-year-old woman is assessed by the Emergency Department following a fall onto her right wrist. The initial radiograph shows an extra-articular fracture of the right distal radius, with volar subluxation of the distal fragment. Which eponymous fracture type best matches this description?**

(A) Barton's fracture

(B) Colles' fracture

(C) Hutchinson's fracture

(D) Smith's fracture