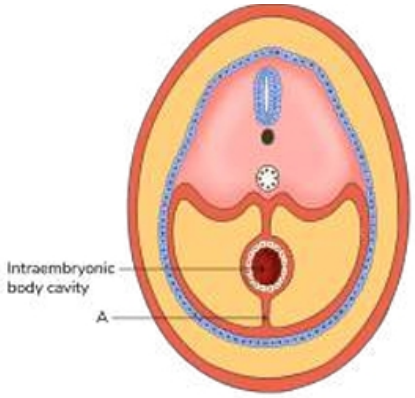
NEET PG 2022 PYQs Question Paper with Solutions

Time Allowed :3 hours	**Maximum Marks :**200	**Total Questions :**200

1 The structure marked A in the image below gives rise to which of the following structures?



(1) Gastrosplenic ligament

(2) Lienorenal ligament

(3) Falciform ligament

(4) Gastrophrenic ligament

Correct Answer: (3) Falciform ligament

Solution:

The structure marked “A” in the embryological cross-section represents the ventral mesentery, which contributes to the formation of the falciform ligament. This ligament extends from the liver to the anterior abdominal wall and is derived from the ventral mesogastrium.

Quick Tip

Ventral mesentery gives rise to the falciform ligament; dorsal mesentery forms others like gastrosplenic and lienorenal.

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2 A patient underwent surgery for varicose veins. He now complains of sensory loss over the medial aspect of the leg and foot. Which of the following nerves is most likely

to be injured?

(1) Sural nerve

(2) Superficial peroneal nerve

(3) Deep peroneal nerve

(4) Saphenous nerve

Correct Answer: (4) Saphenous nerve

Solution:

The saphenous nerve is a branch of the femoral nerve and supplies sensory innervation to the medial side of the leg and foot. It runs alongside the great saphenous vein and can be injured during varicose vein surgeries, especially stripping or cannulation.

Quick Tip

Saphenous nerve = sensory to medial leg and foot; often injured in varicose vein surgeries.

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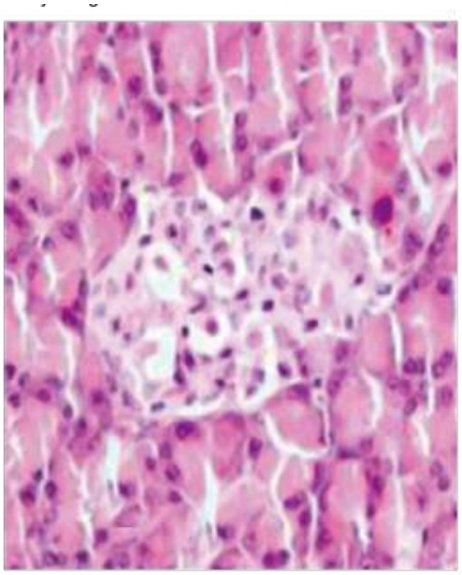
3 Identify the given structure (histology image shown):



(1) Lymph node

(2) Glomerulus

(3) Spleen

(4) Pancreatic islet cells

Correct Answer: (4) Pancreatic islet cells

Solution:

The histological section shows lightly stained clusters of cells surrounded by more intensely stained exocrine pancreatic tissue. These pale-staining regions are characteristic of the islets of Langerhans (pancreatic islet cells), which are responsible for endocrine functions such as insulin and glucagon secretion.

Quick Tip

Pale circular clusters in the pancreas = Islets of Langerhans (endocrine pancreas).

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4 Identify the mask in the image used for patients with COVID-19 infection.

(1) Venturi mask

(2) Hudson mask

(3) Nebuliser

(4) Non-rebreathing mask

Correct Answer: (4) Non-rebreathing mask

Solution:

The image shows a non-rebreathing mask with a reservoir bag, one-way valves, and a snug fit for high FiO_2 oxygen delivery. It is used in patients needing high oxygen support, such as

severe COVID-19 cases with respiratory distress.

Quick Tip

Non-rebreathing mask = high-flow oxygen with reservoir bag, ideal in COVID emergencies.

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5 A patient from a Mediterranean country visits Africa, where he develops malaria. He is treated with primaquine and later develops hemolytic anemia. Deficiency of an enzyme involved in which of the following pathways could be the cause?

(1) Glycolysis

(2) Gluconeogenesis

(3) Hexose monophosphate (HMP) pathway

(4) Luebering-Rapoport pathway

Correct Answer: (3) Hexose monophosphate (HMP) pathway

Solution:

Hemolytic anemia following treatment with oxidant drugs like primaquine is typical in patients with glucose-6-phosphate dehydrogenase (G6PD) deficiency. This enzyme functions in the HMP pathway, generating NADPH, which protects red blood cells from oxidative damage.

Quick Tip

Think G6PD deficiency when hemolysis follows oxidant drugs—linked to HMP pathway.

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6 A patient presents to you with multiple anogenital warts. The biopsy of these lesions showed squamous atypia. Which of the following human papillomavirus types are considered high-risk?

(1) HPV 2

(2) HPV 18

(3) HPV 6

(4) HPV 11

Correct Answer: (2) HPV 18

Solution:

HPV types 16 and 18 are considered high-risk due to their association with cervical and anogenital cancers. The presence of squamous atypia on biopsy further suggests a high-risk HPV strain. Types 6 and 11 are low-risk and typically cause benign warts.

Quick Tip

HPV 16 18 = high-risk (linked to dysplasia/carcinoma); HPV 6 & 11 = low-risk.

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7 A 5-year-old child presents with reduced hearing for the past 2–3 months. The otoscopy finding is shown. What is the most likely diagnosis?

(1) Myringitis bullosa

(2) Serous otitis media

(3) Acute otitis media

(4) Pneumo Tympanum

Correct Answer: (2) Serous otitis media

Solution:

The image shows a retracted tympanic membrane with visible fluid level or air bubbles, consistent with serous (otitis media with effusion). This condition leads to conductive hearing loss in children and commonly follows upper respiratory tract infections.

Quick Tip

Serous otitis = fluid without acute infection signs; chronic hearing loss clue.

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8 Identify the structure given in the image.

(1) Malleus

(2) Incus

(3) Stapes

(4) Vomer

Correct Answer: (2) Incus

Solution:

The image shows the anatomical structure of the incus, one of the three auditory ossicles in the middle ear. It is located between the malleus and stapes and resembles an anvil.

Quick Tip

Incus = Anvil-shaped bone in the middle ear, second in the ossicular chain.

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9 A 56-year-old man presents with fatigue, pallor, and abdominal pain. He reports memory loss and works at a battery recycling plant. Exam shows foot drop and elevated blood lead levels. Which enzyme is affected?

(1) Aminolevulinic acid (ALA) dehydratase

(2) Uroporphyrinogen III

(3) Uroporphyrinogen I

(4) Pyruvate dehydrogenase

Correct Answer: (1) Aminolevulinic acid (ALA) dehydratase

Solution:

Lead poisoning inhibits ALA dehydratase and ferrochelatase, key enzymes in heme synthesis. This causes anemia, abdominal pain, and neurological symptoms like foot drop.

Quick Tip

Lead poisoning = ALA dehydratase + ferrochelatase inhibition $\rightarrow$ anemia & neurotoxicity.

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10 A patient came with complaints of hair loss. His wife mentions that she has noticed some behavioral changes. The doctor notices a loss of eyebrows on the lateral side. He then concludes by examining the nails. What is the type of poisoning in this case?

(1) Thallium

(2) Arsenic

(3) Mercury

(4) Lead

Correct Answer: (1) Thallium

Solution:

The symptoms described — hair loss, behavioral changes, and lateral eyebrow loss — point

towards **thallium poisoning**.

Thallium affects the skin, nervous system, and appendages. Notably: - **Alopecia (hair loss)** including lateral eyebrow loss is a hallmark.

- **Behavioral changes** result from CNS involvement.

- **Nail changes** (Mees' lines) help in clinical diagnosis.

These signs distinguish it from arsenic or mercury, which may show neuropathies but not this classical triad.

Quick Tip

Think of thallium when there's alopecia with lateral eyebrow loss and neuropsychiatric symptoms.

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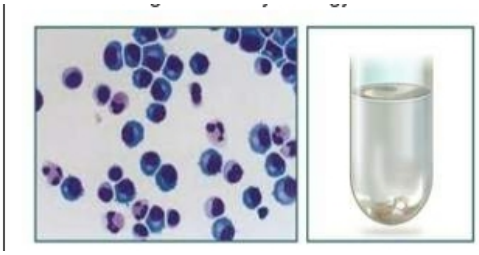
11 The cerebrospinal fluid (CSF) specimen of a patient is shown below along with the microscopy. The report shows mononuclear cytosis, elevated proteins, and low sugars. Which of the following is the likely etiology?



(1) Tuberculous meningitis

(2) Aseptic meningitis

(3) Bacterial meningitis

(4) Chemical meningitis

Correct Answer: (1) Tuberculous meningitis

Solution:

The CSF findings: - **Mononuclear cytosis** (lymphocytic predominance)

- **Elevated protein levels**

- **Low sugar levels**

are classical for **tuberculous meningitis** (TBM).

In TBM, mycobacterial infection elicits a chronic granulomatous response in the CNS. This

leads to: - High protein due to inflammation

- Low glucose due to consumption

- Lymphocytic infiltration (mononuclear cells on microscopy)

Viral (aseptic) meningitis would show lymphocytes but with normal sugar. Bacterial meningitis generally shows neutrophilic predominance and more drastic glucose reduction.

Quick Tip

TB meningitis shows lymphocytes, high protein, and low sugar. Bacterial usually has neutrophils; viral has normal sugar.

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12 A female patient presents to you with a unilateral headache. It is associated with nausea, photophobia, and phonophobia. What is the drug of choice for acute management?

(1) Flunarizine

(2) Sumatriptan

(3) Propranolol

(4) Topiramate

Correct Answer: (2) Sumatriptan

Solution:

The presentation describes a **migraine attack** — a unilateral headache accompanied by nausea, photophobia, and phonophobia.

- **Sumatriptan**, a 5-$HT_{1B/1D}$ receptor agonist, is the first-line treatment for **acute migraine attacks**. - It causes cranial vasoconstriction and inhibits neuropeptide release.

Other options: - **Flunarizine** and **Propranolol** are used for prophylaxis. - **Topiramate** is also for migraine prevention, not acute relief.

Quick Tip

Remember: Triptans like Sumatriptan are used for immediate relief in migraine; beta-blockers and anticonvulsants are used for prophylaxis.

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13 A patient presents to you with fever, night sweats, ptosis, and bilateral facial nerve palsy. Investigations showed leukocytosis and bilateral hilar lymphadenopathy. Which of the following is the most likely diagnosis?

(1) Sarcoidosis

(2) Tuberculosis

(3) Lymphoma

(4) Hypersensitive pneumonitis

Correct Answer: (1) Sarcoidosis

Solution:

The combination of: - **Bilateral facial nerve palsy** (unique to sarcoidosis), - **Bilateral hilar lymphadenopathy**, - **Systemic symptoms** (fever, night sweats), suggests **sarcoidosis** — a granulomatous disease often affecting the lungs and nervous system. - Tuberculosis can have similar signs but rarely causes bilateral facial palsy. - Lymphoma causes lymphadenopathy but not typically with cranial nerve palsy. - Hypersensitivity pneumonitis doesn't involve cranial nerves or lymphadenopathy to this extent.

Quick Tip

Bilateral facial palsy with bilateral hilar lymphadenopathy is a classic pointer toward neurosarcoidosis.

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14 A 25-year-old patient is undergoing tooth extraction for dental caries. Which of the following does not require prophylaxis against infective endocarditis?

(1) Prior history of endocarditis

(2) Atrial septal defect

(3) Unrepaired cyanotic heart disease

(4) Prosthetic heart valves

Correct Answer: (2) Atrial septal defect

Solution:

Prophylaxis for infective endocarditis is **not required** in all congenital heart diseases. According to current guidelines, it is recommended only for: - Patients with **prosthetic heart valves** - Prior history of **infective endocarditis** - Certain **congenital heart

diseases**, such as **unrepaired cyanotic CHD**

Atrial septal defect (ASD) is usually well tolerated and **does not require prophylaxis**.

Quick Tip

IE prophylaxis is only for high-risk cardiac conditions; simple ASD doesn't qualify.

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15 A patient presents to the emergency department with a history of ingestion of ten tablets of paracetamol. He has developed oliguria and liver function tests show deranged values. Which of the following can be used in the management of this condition?

(1) N-acetylcysteine

(2) Dopamine

(3) Ursodeoxycholic acid

(4) Furosemide

Correct Answer: (1) N-acetylcysteine

Solution:

The clinical presentation is consistent with **paracetamol (acetaminophen) overdose**, which leads to hepatotoxicity.

- **N-acetylcysteine (NAC)** is the antidote of choice. - It replenishes glutathione, binds the toxic metabolite NAPQI, and prevents further liver damage. - It is effective when given within 8–10 hours but can also benefit late presenters.

The other options: - **Dopamine** is used in shock states, not for detox. - **Ursodeoxycholic acid** is used for cholestatic liver disease. - **Furosemide** is a diuretic, not relevant for hepatotoxicity management.

Quick Tip

N-acetylcysteine is the specific antidote for paracetamol poisoning — always suspect it in cases of hepatotoxicity with overdose history.

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16 A patient presents to you with an irregularly irregular pulse of 120/minutes and a pulse deficit of 20. Which of the following would be the jugular venous pressure (JVP) finding?

(1) Absent p wave

(2) Absent a wave

(3) Cannon a wave

(4) Raised JVP with normal waveform

Correct Answer: (2) Absent a wave

Solution:

An **irregularly irregular pulse** with **pulse deficit** suggests **atrial fibrillation**. In AF: - The atria do not contract effectively — there is no coordinated atrial systole. - This leads to an **absence of 'a wave'** in the jugular venous pulse (which is normally due to atrial contraction).

Other options: - **Absent p wave** is an ECG finding, not JVP. - **Cannon a waves** occur in AV dissociation. - **Raised JVP with normal waveform** doesn't correlate with AF.

Quick Tip

In atrial fibrillation, JVP shows absent 'a waves' due to ineffective atrial contraction.

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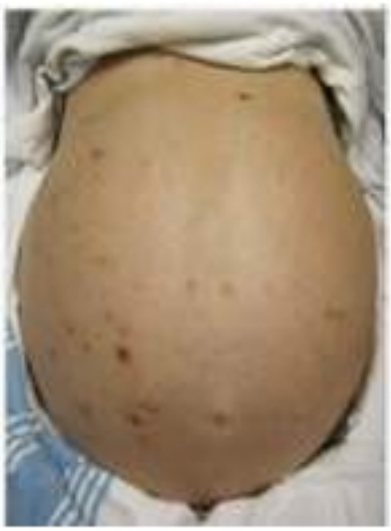
17 A patient with a history of chronic liver disease presents with abdominal distension, jaundice, and pruritis. Ascitic fluid analysis revealed a neutrophil count ¿650 per cubic mm. What is the most likely diagnosis?



(1) Spontaneous bacterial peritonitis

(2) Malignant ascites

(3) Tubercular ascites

(4) Intestinal obstruction

Correct Answer: (1) Spontaneous bacterial peritonitis

Solution:

Spontaneous bacterial peritonitis (SBP) is a common complication of **chronic liver disease with ascites**.

- A neutrophil count **gt;250/mm³** in ascitic fluid is diagnostic. - The patient's count is **gt;650/mm³**, confirming SBP.

Malignant and tubercular ascites typically present with **lymphocytic predominance**, not neutrophilic. Intestinal obstruction does not produce neutrophilic ascitic fluid.

Quick Tip

In cirrhotic patients, ascitic neutrophil count gt;250/mm³ strongly suggests SBP — even without positive culture.

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18 Laboratory investigations of a patient being evaluated for jaundice show elevated bilirubin and alkaline phosphatase levels. Levels of the remaining liver enzymes are normal. What is the likely diagnosis?

(1) Obstructive jaundice

(2) Hemolytic jaundice

(3) Hepatic jaundice

(4) Prehepatic jaundice

Correct Answer: (1) Obstructive jaundice

Solution:

Obstructive jaundice is characterized by: - **Elevated bilirubin (mainly conjugated)** - **High alkaline phosphatase (ALP)** - **Normal AST/ALT** or mildly elevated

Hemolytic jaundice increases **unconjugated bilirubin**, not ALP. Hepatic jaundice shows elevated **transaminases**.

Quick Tip

Think of obstructive jaundice when ALP is high and liver enzymes are relatively normal.

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19 An 11-year-old child with a history of streptococcal pharyngitis presents with fever and arthralgia. There is no past history of rheumatic heart disease or carditis. How often is 600,000 IU of benzathine penicillin recommended for prophylaxis of rheumatic heart disease?

(1) Immediately

(2) Thrice weekly lifelong

(3) Once in three weeks for 5 years or till the age of 18, whichever is longer

(4) Once in three weeks for 10 years or till the age of 25, whichever is longer

Correct Answer: (3) Once in three weeks for 5 years or till the age of 18, whichever is longer

Solution:

In a patient with **no history of carditis**, **secondary prophylaxis** with **benzathine penicillin** is advised: - **Every 3 weeks** - **Duration: 5 years or till 18 years of age**, whichever is longer

Longer durations are advised if carditis or valvular disease is present.

Quick Tip

In RHD prophylaxis, the duration depends on carditis history — no carditis: 5 years or age 18; with carditis: longer.

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20 Which of the following is not seen in MEN 2B syndrome?

(1) Megacolon

(2) Parathyroid adenoma

(3) Mucosal neuroma

(4) Marfanoid habitus

Correct Answer: (2) Parathyroid adenoma

Solution:

MEN 2B syndrome includes: - **Medullary thyroid carcinoma** - **Pheochromocytoma** - **Mucosal neuromas** - **Marfanoid habitus**

Parathyroid adenoma is seen in **MEN 1 and MEN 2A**, not in MEN 2B.

Quick Tip

MEN 2B = Medullary carcinoma + Pheochromocytoma + Mucosal neuroma + Marfanoid habitus (No parathyroid involvement).

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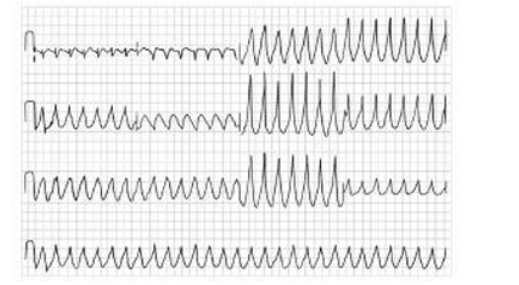
21 A patient with coronary artery disease presents to you with chest pain and palpitations. The ECG is shown below. Which of the following can be used in the management?



(1) Oral metoprolol

(2) Oral amiodarone

(3) Intravenous amiodarone

(4) Intravenous metoprolol

Correct Answer: (3) Intravenous amiodarone

Solution:

The ECG shows a wide-complex tachycardia (likely **ventricular tachycardia**), which in the setting of chest pain and palpitations in a known CAD patient, is an emergency. Management of **stable VT** includes: - **IV amiodarone** as first-line drug. - Oral agents are not used acutely. - Beta blockers like metoprolol are not preferred for wide-complex tachycardia.

Quick Tip

In stable ventricular tachycardia, IV amiodarone is the drug of choice.

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22 Microfilariae with sheathed tail and two nuclei at the tail is suggestive of?

(1) Wuchereria bancrofti

(2) Brugia malayi

(3) Loa loa

(4) Onchocerca volvulus

Correct Answer: (2) Brugia malayi

Solution:

Brugia malayi can be differentiated from other microfilariae by: - Presence of a **sheathed body** - **Two distinct nuclei** at the tail end.

In contrast: - **Wuchereria bancrofti**: sheathed but tail nuclei are absent. - **Loa loa**: continuous tail nuclei. - **Onchocerca volvulus**: unsheathed.

Quick Tip

Brugia malayi: Sheathed + 2 distinct tail nuclei. W. bancrofti: Sheathed, no tail nuclei.

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23 A pregnant lady with 34 weeks of amenorrhea has the following findings: LDH- 700 IU/L, platelets – 75,000/mm^3, serum bilirubin -1.5 mg/dL, SGOT-200 U/L, SGPT-150

U/L, and BP - 140/96 mm Hg. Her coagulation profile and renal function tests are normal. What is the diagnosis?

(1) HELLP syndrome

(2) Acute fatty liver of pregnancy

(3) Viral hepatitis

(4) Intrahepatic cholestasis

Correct Answer: (1) HELLP syndrome

Solution:

The patient has classic signs of **HELLP syndrome**: - **H**emolysis (elevated LDH) - **E**levated **L**iver enzymes (SGOT, SGPT) - **L**ow **P**latelets

BP elevation suggests preeclampsia. - **Acute fatty liver of pregnancy** shows hypoglycemia, renal dysfunction. - **Viral hepatitis** shows very high transaminases. - **Cholestasis** presents with itching and raised bile acids.

Quick Tip

HELLP = Hemolysis, Elevated Liver enzymes, Low Platelets — seen in preeclampsia spectrum.

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24 A woman at 26 weeks of gestation presents for routine evaluation. On examination, fundal height corresponds to 24 weeks. Ultrasonography revealed decreased amniotic fluid. Which of the following conditions would have led to this presentation?

(1) Renal agenesis

(2) Tracheoesophageal fistula

(3) Cardiac abnormalities

(4) Ureteral stricture

Correct Answer: (1) Renal agenesis

Solution:

Oligohydramnios (low amniotic fluid) in the second trimester is often due to **renal agenesis**, where the fetus is unable to produce urine — a major component of amniotic fluid.

Other options: - **TEF** (Tracheoesophageal fistula) and **cardiac abnormalities** do not significantly affect amniotic fluid volume. - **Ureteral stricture** may affect postnatal renal flow, not fetal urine production.

Quick Tip

In oligohydramnios, always consider fetal renal anomalies like bilateral renal agenesis as primary causes.

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25 A type 1 diabetic mother is on magnesium sulfate infusion post–cesarean section for preeclampsia. She develops delirium and is drowsy. She has a respiratory rate of 10/min, random blood glucose level of 240 mg/dL, oliguria, and bilaterally absent knee reflex. What is the cause of her condition?

(1) Magnesium sulfate toxicity

(2) Diabetic ketoacidosis

(3) Eclampsia

(4) Diabetes insipidus

Correct Answer: (1) Magnesium sulfate toxicity

Solution:

The triad of: - **Drowsiness** - **Depressed respiratory rate (10/min)** - **Absent deep tendon reflexes** is classic for **magnesium sulfate toxicity**.

High Mg^{2+} levels depress the CNS and reflexes. Diabetic ketoacidosis would present with Kussmaul breathing and acidotic signs, not loss of reflexes. Eclampsia causes seizures, not hyporeflexia.

Quick Tip

Always monitor reflexes and respiration when administering $MgSO_4$; early signs of toxicity include hyporeflexia.

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26 Identify the type of hymen shown in the image.

(1) Imperforate hymen

(2) Semilunar hymen

(3) Septate hymen

(4) Annular hymen

Correct Answer: (3) Septate hymen

Solution:

The image shows a **hymen with a midline vertical band** dividing the vaginal orifice into two small openings — characteristic of a **septate hymen**.

Other types: - **Imperforate hymen**: no visible opening. - **Semilunar hymen**: crescent-shaped opening. - **Annular hymen**: round central opening.

Quick Tip

Septate hymen has two vaginal openings separated by a tissue band — often mistaken for imperforate or annular variants.

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27 While discharging a patient who underwent a vesicovaginal fistula repair, which of the following would you recommend?

(1) Sexual abstinence for 3 months and avoid pregnancy for a year

(2) Sexual abstinence for 3 weeks and avoid pregnancy for 6 months

(3) Sexual abstinence for 6 weeks and avoid pregnancy for a year

(4) Sexual abstinence for 6 months and avoid pregnancy for 6 years

Correct Answer: (1) Sexual abstinence for 3 months and avoid pregnancy for a year

Solution:

Following **vesicovaginal fistula (VVF) repair**, the vaginal and bladder tissues need time to heal. - **Sexual abstinence for 3 months** allows complete healing and prevents disruption of the repair. - **Avoiding pregnancy for 1 year** ensures stability of repair and reduces pressure on pelvic organs.

Quick Tip

After VVF repair: 3 months abstinence + 1 year pregnancy avoidance is standard to ensure successful healing.

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28 Which of the following is an absolute contraindication for the insertion of the device shown in the image below?

(1) Menstruation

(2) Trophoblastic disease

(3) Immediately after delivery

(4) Ruptured condom during intercourse

Correct Answer: (2) Trophoblastic disease

Solution:

The image shows a **copper-T intrauterine device (IUD)**. An **absolute contraindication** to IUD insertion includes: - **Trophoblastic disease (e.g., molar pregnancy)**, due to high vascularity and risk of perforation and infection.

Other options: - Menstruation is not a contraindication — sometimes used for insertion. - Post-delivery insertion is possible in specific settings. - Ruptured condom is an indication for emergency contraception, not a contraindication.

Quick Tip

Always rule out trophoblastic disease before IUD insertion — it's a red flag contraindication.

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29 A 20-year-old woman is evaluated for primary infertility. Hysterosalpingography was done and reveals the finding shown in the image. What is the anomaly seen in the image?

(1) Septate uterus

(2) Uterine didelphys

(3) Bicornuate uterus

(4) Unicornuate uterus

Correct Answer: (1) Septate uterus

Solution:

The HSG shows: - A **single uterine fundus** - **Divided endometrial cavity**, suggestive of a **septate uterus**. This results from failure of resorption of the uterine septum.

Other anomalies: - **Bicornuate uterus** has two horns with some fundal indentation. - **Uterine didelphys** has two separate uteri and cervices. - **Unicornuate uterus** has a single horn.

Quick Tip

A single fundus with a divided cavity on HSG = Septate uterus; confirm via MRI or 3D USG.

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30 A pregnant woman with no other comorbid conditions develops preeclampsia. She enquires about the cause of her condition. The doctor explains that it is due to the failure of the invasion of:

(1) Spiral artery by villous trophoblasts

(2) Radial artery by cytotrophoblasts

(3) Spiral artery by extravillous trophoblasts

(4) Arcuate artery by extravillous trophoblasts

Correct Answer: (3) Spiral artery by extravillous trophoblasts

Solution:

Preeclampsia results from **incomplete remodeling of spiral arteries**. Normally, **extravillous trophoblasts** invade and transform these arteries into low-resistance vessels. Failure of this invasion leads to: - **High resistance placental circulation** - **Placental ischemia** - **Release of antiangiogenic factors $\rightarrow$ maternal endothelial dysfunction**

Quick Tip

Failure of spiral artery remodeling by extravillous trophoblasts is the key pathology in preeclampsia.

31 A woman with an obstetric score of G2P1 comes to the clinic at 14 weeks of gestation for her antenatal checkup. A uterine artery doppler was suggested by the doctor. What would it detect?

(1) Early onset preeclampsia

(2) Late-onset preeclampsia

(3) Fetal growth restriction

(4) Placenta accreta

Correct Answer: (1) Early onset preeclampsia

Solution:

Uterine artery Doppler at 11–14 weeks is used to detect high resistance flow (notching or increased PI), which is predictive of **early-onset preeclampsia**.

It can also suggest risks of FGR, but the primary screening target is **early PE**.

Quick Tip

Uterine artery Doppler in the first trimester helps predict early onset preeclampsia.

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32 While conducting a delivery, you perform the maneuver shown below. Following this, there is incomplete separation of the placenta and massive hemorrhage. What is your next step in management?

(1) Start oxytocin infusion and wait for spontaneous delivery of placenta

(2) Uterine massage

(3) Arrange for blood and use Crede's method for placental delivery

(4) Manual removal of placenta

Correct Answer: (4) Manual removal of placenta

Solution:

When there is **incomplete placental separation** and **massive bleeding**, the immediate next step is **manual removal of placenta** under anesthesia.

Other methods like oxytocin, Crede's, or uterine massage are ineffective in this situation.

Delay can increase hemorrhage and maternal risk.

Quick Tip

In retained placenta with hemorrhage, manual removal is the definitive and immediate step.

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33 A female patient collapses soon after delivery. There is profuse bleeding and features of disseminated intravascular coagulation. Which of the following is the most likely etiology?

(1) Amniotic fluid embolism

(2) Uterine prolapse

(3) Peripartum cardiomyopathy

(4) Rupture of the uterus

Correct Answer: (1) Amniotic fluid embolism

Solution:

Amniotic fluid embolism (AFE) is a catastrophic obstetric emergency typically occurring during labor, delivery, or immediately postpartum. - It leads to sudden **cardiopulmonary collapse**, **severe hypotension**, and **DIC**. - The classic triad includes **respiratory distress**, **coagulopathy**, and **shock**.

Other causes like **uterine rupture** or **cardiomyopathy** can cause collapse but not DIC to this extent.

Quick Tip

Think of AFE in sudden postpartum collapse with bleeding and signs of DIC.

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34 You are examining a multigravida in the second stage of labor for the past two hours. On examination, contractions are adequate, the cervix is dilated with the head at station 0 with molding 2+ and caput 2+. The sagittal suture is in the right occipitotransverse position. The fetal heart rate is 140 beats/minute. Which of the following is carried out for the management of this patient?

(1) Midpelvic forceps

(2) Vacuum-assisted delivery

(3) Wait for an hour for spontaneous labor

(4) Lower segment cesarean section

Correct Answer: (4) Lower segment cesarean section

Solution:

The findings indicate **arrest of descent** in the **second stage** of labor: - **Station 0** with **molding and caput** suggests **cephalopelvic disproportion (CPD)**. - Fetal position is not optimal (occipitotransverse), and labor has been prolonged. - Vaginal delivery is not safe.

Thus, **LSCS** is the safest and most appropriate intervention.

Quick Tip

In second stage arrest with molding, caput, and malposition — go for cesarean section.

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35 A primigravida presents to the labor room at 40 weeks of gestation with lower abdominal pain. She has been in labor for 3 hours. Which of the following will determine if she is in active labor?

(1) Fetal head 5/5 palpable on abdominal examination

(2) Two contractions lasting for 10 seconds in 10 minutes

(3) More than 5 cm cervical dilatation with complete effacement

(4) Rupture of membranes

Correct Answer: (3) More than 5 cm cervical dilatation with complete effacement

Solution:

Active labor is defined as: - **Cervical dilatation 6 cm** (some guidelines use 5 cm) -

With regular contractions - **Complete or progressing effacement**

Other options: - Fetal head palpability doesn't confirm labor stage. - Contractions alone don't confirm active labor. - Rupture of membranes can happen before or during labor.

Quick Tip

Active labor is defined by 5–6 cm cervical dilatation with strong contractions and effacement.

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36 Identify the blue-colored area shown in the image below.

(1) Obstetric outlet

(2) Anatomical outlet

(3) Pelvic inlet

(4) Midpelvis

Correct Answer: (4) Midpelvis

Solution:

The image highlights the **midpelvis**, also known as the midplane of the pelvis. It lies between: - **Pelvic inlet** (superior) and - **Pelvic outlet** (inferior).

It is bounded anteriorly by the **lower margin of the pubic symphysis** and posteriorly by the **junction of the 2nd and 3rd sacral vertebrae**.

Quick Tip

Midpelvis is the region between the inlet and outlet, critical for evaluating labor progress.

---

37 What will be the level of the uterus on the second day post-delivery?

(1) One finger breadth below umbilicus

(2) Two finger breadths below umbilicus

(3) Three finger breadths below umbilicus

(4) Four finger breadths below umbilicus

Correct Answer: (1) One finger breadth below umbilicus

Solution:

On the **second postpartum day**, the uterus continues to involute. - It is typically found **1 finger breadth (about 1 cm)** below the umbilicus. - It continues to regress by about 1 cm/day postpartum.

Quick Tip

Uterine fundal height decreases by 1 finger breadth per day postpartum.

---

38 A primigravida woman at 12 weeks of gestation comes to the antenatal clinic for nutritional advice. Which of the following will you recommend?

(1) Additional 300 kcal in 2nd trimester

(2) Additional 300 kcal in 1st trimester

(3) Additional 400 kcal in 3rd trimester

(4) Additional 300 kcal throughout the pregnancy

Correct Answer: (2) Additional 300 kcal in 1st trimester

Solution:

During pregnancy, energy needs increase: - **First trimester**: +300 kcal - **Second trimester**: +340 kcal - **Third trimester**: +450–500 kcal

However, Indian guidelines often suggest **300 kcal/day additional energy starting from the

1st trimester** for simplicity and safety.

Quick Tip

Start increasing calorie intake from the first trimester itself by about 300 kcal/day.

---

39 A 40-year-old G2P1 woman with 18 weeks of amenorrhea comes with a dilated cervix. The cervical length is 15 mm. In spite of explaining the risks, she insisted on cerclage. Which of the following is a contraindication for cervical cerclage?

(1) Ruptured membranes

(2) Prolapse of membranes into the vagina

(3) Fetal fibronectin positive

(4) Advanced maternal age

Correct Answer: (1) Ruptured membranes

Solution:

Cervical cerclage is contraindicated in cases of: - **Active labor** - **Chorioamnionitis** - **Vaginal bleeding** - **Ruptured membranes**

Rupture of membranes increases infection risk and limits cerclage success. Other options may increase risk but are not absolute contraindications.

Quick Tip

Cervical cerclage should not be done after rupture of membranes — risk of infection and failure is high.

---

40 A primigravida presents to the emergency room in the early stage of labor with adequate uterine contractions. On per vaginal examination, a gynecoid pelvis is felt, the membranes are ruptured, and the vertex is felt in the right occipito-posterior position. How will you manage this patient?

(1) Vacuum-assisted delivery

(2) Cesarean section

(3) Normal vaginal delivery

(4) Forceps delivery

Correct Answer: (3) Normal vaginal delivery

Solution:

Right occipito-posterior (ROP) is a common malposition, but: - Many cases rotate spontaneously to occipito-anterior during labor. - With a **gynecoid pelvis**, **adequate contractions**, and **no distress**, **expectant management** is justified.

Thus, allow for **normal vaginal delivery**.

Quick Tip

ROP with good labor progress and gynecoid pelvis can often be delivered vaginally without intervention.

---

41 A pregnant patient, with a history of classical cesarean section in view of fetal growth retardation in the previous pregnancy, presents to you. She is currently at 35 weeks of gestation with breech presentation. What is the next step in management?

(1) Cesarean section at 37 weeks

(2) Advice USG and visit after 2 weeks

(3) Internal podalic version followed by vaginal delivery

(4) External cephalic version at 36 weeks

Correct Answer: (1) Cesarean section at 37 weeks

Solution:

A previous **classical cesarean section** is a contraindication to labor due to the risk of **uterine rupture**. - Breech presentation further complicates the case. - Thus, **elective cesarean delivery at 37 weeks** is the safest approach.

External cephalic version (ECV) is contraindicated in women with a classical scar.

Quick Tip

In women with a classical cesarean scar, ECV and labor are avoided — schedule cesarean at 37 weeks.

---

42 A primigravida at 22 weeks of gestation presents to you with profuse vaginal bleeding. Her BP and glucose levels are normal. Placental implantation at which of the following sites can cause this?

(1) Internal OS

(2) Fallopian tube

(3) Ovarian

(4) Abdominal

Correct Answer: (1) Internal OS

Solution:

Placenta previa refers to placental implantation over or near the **internal cervical os**, leading to painless **bleeding in the second or third trimester**.

Other options describe ectopic pregnancy sites and do not explain second-trimester vaginal bleeding.

Quick Tip

Profuse painless bleeding in the second trimester? Think placenta previa at internal os.

---

43 A female patient presents to you with six weeks of amenorrhea, abdominal pain and vaginal bleeding. -hCG is 1400 mIU/mL, ultrasound shows trilaminar endometrium and normal adnexa. What is the next best step in management?

(1) Repeat beta-hCG after 48 hours

(2) Repeat ultrasound after 3 days

(3) Measurement of progesterone

(4) Laparoscopy

Correct Answer: (1) Repeat beta-hCG after 48 hours

Solution:

In early pregnancy with **inconclusive ultrasound** and **-hCG lt;1500**, the next step is **repeat -hCG after 48 hours**. - Normal intrauterine pregnancy should double -hCG in 48 hrs. - If values plateau or drop, suspect ectopic or failing pregnancy.

Quick Tip

For early pregnancy with unclear USG, repeat -hCG after 48 hrs to assess viability or ectopic risk.

---

44 A 24-year-old lactating female with an 18-month-old child has irregular, heavy bleeding and seeks contraceptive advice. Which is the contraceptive of choice?

(1) Progestasert

(2) Copper – T 380A

(3) Mala

(4) Norethisterone enanthate – depot injection

Correct Answer: (3) Mala

Solution:

Mala (combined oral contraceptive pills) regulate menstrual cycles and reduce menorrhagia.

- In a **non-breastfeeding woman** 18 months postpartum, COCPs are suitable. - They reduce endometrial proliferation and bleeding.

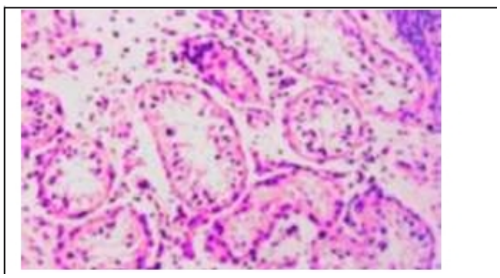
Other methods: - **Progestasert** and **Copper-T** may increase bleeding. - **Depot progestins** can cause irregular bleeding.

Quick Tip

In non-lactating females with heavy bleeding, COCs like Mala help regulate menses and offer contraception.

---

45 A 25-year-old male patient is evaluated for primary infertility. Semen analysis shows azoospermia. A testicular biopsy is done and the image is shown below. The shown finding is consistent with



(1) Sertoli cell only syndrome

(2) Testicular atrophy

(3) Benign testicular neoplasm

(4) Orchitis

Correct Answer: (1) Sertoli cell only syndrome

Solution:

The histology shows seminiferous tubules lined exclusively with **Sertoli cells**, lacking germ cells — typical of **Sertoli Cell Only Syndrome**. - It's a common cause of **non-obstructive azoospermia**. - Testosterone levels are usually normal due to intact Leydig cells.

Other options: - **Testicular atrophy** shows fibrosis. - **Orchitis** has inflammation. - **Neoplasm** would show disorganized cellular proliferation.

Quick Tip

Sertoli Cell Only Syndrome = empty tubules with only Sertoli cells; common in primary infertility.

---

46 A 20-year-old woman presented at 7 weeks of gestation, unwilling to continue the pregnancy. What are the drugs used for medical termination of pregnancy in this patient?

(1) Misoprostol and Medroxyprogesterone

(2) Misoprostol and Mifepristone

(3) Mifepristone and Methotrexate

(4) Mifepristone and Medroxyprogesterone

Correct Answer: (2) Misoprostol and Mifepristone

Solution:

For **medical abortion** up to 9 weeks of gestation: - First, **Mifepristone** (anti-progestin) is given to detach the gestational sac. - Followed by **Misoprostol** (a prostaglandin) to induce uterine contractions and expel contents.

Other combinations (e.g., methotrexate) are less commonly used today.

Quick Tip

Medical abortion = Mifepristone (anti-progesterone) + Misoprostol (uterotonic)

---

47 Testosterone helps in the development of various organs in the fetus. Which of the following stimulates its production?

(1) LH from maternal pituitary

(2) hCG from placenta

(3) Inhibin from corpus luteum

(4) GnRH from fetal hypothalamus

Correct Answer: (2) hCG from placenta

Solution:

In fetal development, **hCG from the placenta** mimics LH and stimulates **Leydig cells** in the testes to produce **testosterone**, essential for male genital development.

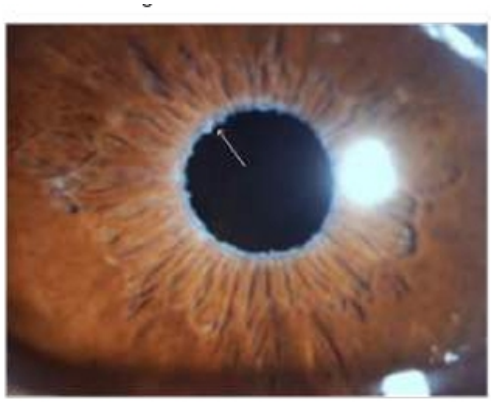
- Maternal LH doesn't cross the placenta. - Fetal GnRH comes later in development.

Quick Tip

Placental hCG acts like LH and triggers fetal Leydig cells to produce testosterone.

---

48 What is the diagnosis?



(1) Intraocular foreign body

(2) Pseudoexfoliation syndrome

(3) Ocular trauma

(4) Vossius ring

Correct Answer: (2) Pseudoexfoliation syndrome

Solution:

The image shows **white flaky material** on the **anterior lens capsule**, particularly in a target-like distribution — classic for **Pseudoexfoliation syndrome (PXF)**. PXF is a systemic condition leading to deposition of fibrillary material in the eye, often linked to **secondary open-angle glaucoma**.

Other differentials: - **Vossius ring** appears as pigment on the lens post-trauma. - **Intraocular foreign body** is typically visible and irregular. - **Ocular trauma** can have different presentations.

Quick Tip

PXF shows dandruff-like material on lens; it's a major risk factor for secondary glaucoma.

---

49 A patient presents with a history of penetrating injury to the eye. A diagnosis of sympathetic ophthalmia was confirmed. Which of the following will be seen?

(1) Acute anterior uveitis

(2) Pars planitis

(3) Panuveitis

(4) Chronic anterior uveitis

Correct Answer: (3) Panuveitis

Solution:

Sympathetic ophthalmia is a **bilateral granulomatous panuveitis** following trauma or surgery to one eye. - It involves **all layers** of the uveal tract — iris, ciliary body, and choroid. - Often triggered by **autoimmune response** to ocular antigens.

Quick Tip

Sympathetic ophthalmia = granulomatous panuveitis affecting both eyes after trauma to one.

---

50 A diabetic patient presents to you with visual acuity of 6/9 in one eye. Further investigations revealed preretinal hemorrhages with neovascularization at the optic disc. What is the next step in management?

(1) Focal laser photocoagulation

(2) Pan-retinal photocoagulation

(3) Grid laser photocoagulation

(4) Scleral buckling

Correct Answer: (2) Pan-retinal photocoagulation

Solution:

Neovascularization at the disc (NVD) is a hallmark of **proliferative diabetic retinopathy**. - The treatment of choice is **pan-retinal photocoagulation (PRP)**. - PRP reduces VEGF levels and causes regression of neovascularization.

Focal/grid laser is used for **macular edema**, not NVD. **Scleral buckling** is for **retinal detachment**, not diabetic retinopathy.

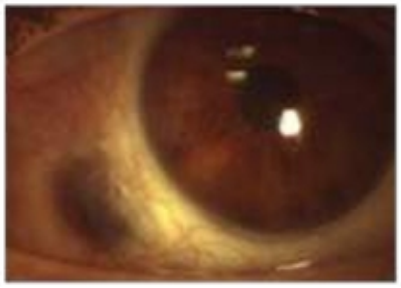
Quick Tip

NVD in diabetics = Proliferative stage $\rightarrow$ Treat with pan-retinal photocoagulation.

---

51 A 35-year-old woman is diagnosed with rheumatoid arthritis. What associated

complications are shown in the image?



(1) Scleromalacia perforans

(2) Ciliary staphyloma

(3) Coloboma

(4) Malignant melanoma

Correct Answer: (1) Scleromalacia perforans

Solution:

Scleromalacia perforans is a severe ocular manifestation of **rheumatoid arthritis**, especially in women. - It presents as **painless thinning of the sclera** without significant inflammation. - The image shows an area of dark uveal tissue shining through the thinned sclera, characteristic of this condition.

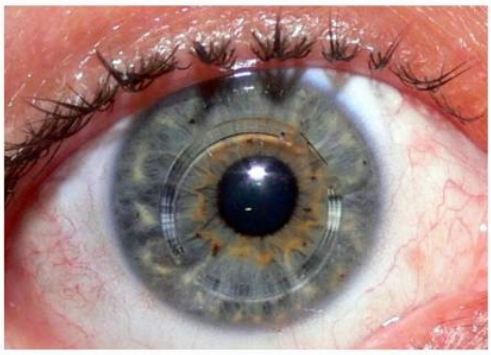
Other options: - **Ciliary staphyloma** involves outward bulging and is inflammatory. - **Coloboma** is congenital. - **Melanoma** appears as a dark intraocular mass.

Quick Tip

Scleromalacia perforans = painless scleral thinning in RA; not associated with redness.

---

52 What is the indication of this procedure?



(1) Keratoconus

(2) Vogt's limbal girdle

(3) Keratoglobus

(4) Corneal dystrophy

Correct Answer: (1) Keratoconus

Solution:

The image shows a patient who underwent **corneal collagen cross-linking (C3R)**, a treatment indicated for **Keratoconus** — a progressive thinning and bulging of the cornea. - It helps in halting the progression of the cone-shaped cornea.

Other conditions like keratoglobus and dystrophies have different management strategies.

Quick Tip

C3R is used to stabilize the cornea in progressive keratoconus — best done early.

---

53 A 3-year-old boy presents with mental retardation and an inability to walk. The fundoscopy image is given below. What is the most likely diagnosis?

(1) Tay-Sachs disease

(2) Hunter disease

(3) Hurler syndrome

(4) Gaucher disease

Correct Answer: (1) Tay-Sachs disease

Solution:

The image shows a **cherry red spot at the macula**, a hallmark of **Tay-Sachs disease**. - It results from **GM2 ganglioside accumulation** due to **hexosaminidase A deficiency**. - Clinical features include **neurodegeneration, hypotonia, seizures**, and vision loss.

While other storage diseases like **Gaucher's and Niemann-Pick** may show cherry red spots, Tay-Sachs is the most classic association.

Quick Tip

Cherry red spot + neuroregression + no hepatosplenomegaly = Tay-Sachs disease.

---

54 What could be the diagnosis of a woman with this appearance on X-ray?

(1) A multiple brown tumor

(2) Fibrous dysplasia

(3) Multiple enchondromas

(4) Multiple exostoses

Correct Answer: (3) Multiple enchondromas

Solution:

The X-ray shows **multiple radiolucent lesions in the metaphyseal regions of the hand bones**, characteristic of **enchondromas**. - When these are multiple, the condition is referred to as **Ollier disease**. - Enchondromas are benign cartilaginous tumors within the medullary cavity.

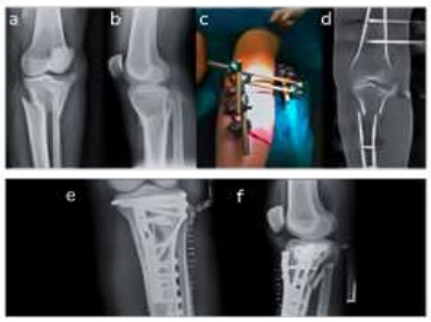
Other options: - **Brown tumors** are related to hyperparathyroidism and appear lytic but with different distribution. - **Fibrous dysplasia** presents with a ground-glass appearance. - **Exostoses** are bony outgrowths.

Quick Tip

Multiple enchondromas = Ollier disease; appears as multiple lytic lesions in hands/long bones.

---

55 Which of the following is true about the type of fixation shown in the image?



(1) Fracture tibia, Ilizarov fixator

(2) Fracture tibia, spanning fixator

(3) Fracture femur, spanning fixator

(4) Periarticular fracture of knee, spanning fixator

Correct Answer: (4) Periarticular fracture of knee, spanning fixator

Solution:

The image demonstrates a **knee-spanning external fixator**, often used in: - **High-energy periarticular fractures** (e.g., distal femur or proximal tibia). - It stabilizes the joint and allows soft tissue healing before definitive fixation.

Other fixators like Ilizarov are circular and used for bone lengthening or deformity correction.

Quick Tip

Spanning external fixators are used for temporary stabilization in periarticular fractures with soft tissue injury.

---

56 A male patient presented with a bone fracture following a road traffic accident. After 2 days he developed dyspnea, petechiae involving the whole body, and a fall in

oxygen saturation. What is the likely diagnosis?

(1) Fat embolism

(2) Air embolism

(3) Venous thromboembolism

(4) Pulmonary hypertension

Correct Answer: (1) Fat embolism

Solution:

Fat embolism syndrome (FES) is classically seen after long bone fractures. - Triad: - **Respiratory distress**, - **Neurological symptoms**, - **Petechial rash** (especially on chest, conjunctiva). - It typically appears **24–72 hours after injury**.

Air embolism presents with sudden collapse and chest pain, not petechiae. VTE lacks rash and occurs later.

Quick Tip

Fat embolism = fracture + hypoxia + petechiae within 2–3 days post trauma.

---

57 An intrauterine scan at the 13th week of pregnancy showed a fetus with multiple long bone fractures. What is commonly associated with this finding?

(1) Achondroplasia

(2) Osteogenesis imperfecta

(3) Cretinism

(4) Marfan syndrome

Correct Answer: (2) Osteogenesis imperfecta

Solution:

Osteogenesis imperfecta (OI) is a genetic disorder characterized by **defective collagen synthesis (Type I collagen)**. - Leads to **brittle bones**, frequent fractures, and sometimes deformities. - In severe cases (e.g., Type II OI), fractures can be detected **in utero** on antenatal ultrasound.

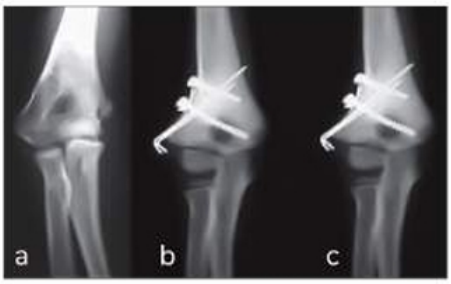
Other options like **achondroplasia** cause dwarfism but not in-utero fractures.

Quick Tip

Multiple antenatal fractures = Think Osteogenesis Imperfecta (especially Type II).

---

58 What is the most common complication of this condition, if left untreated?



(1) Malunion and stiffness

(2) Non-union and cubitus varus

(3) Cubitus valgus

(4) Myositis ossificans

Correct Answer: (3) Cubitus valgus

Solution:

The image shows an **untreated lateral condyle fracture** in a child. - The **most common complication** if left untreated is **cubitus valgus**, an increase in the carrying angle. - This can later lead to **tardy ulnar nerve palsy**.

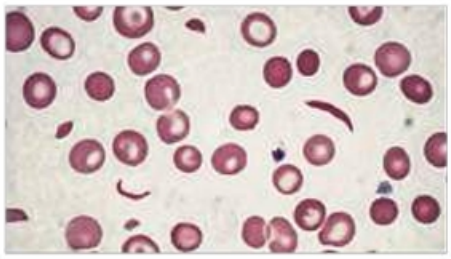
Non-union is also a risk but cubitus valgus remains the most characteristic deformity.

Quick Tip

Untreated lateral condyle fracture → Cubitus valgus → Risk of ulnar nerve palsy.

---

59 A child with recurrent respiratory infections presents with knee pain and high fever. X-ray shows lytic and sclerotic bone. Peripheral smear is shown. What will joint aspirate most likely show?



(1) Staphylococcus aureus

(2) Escherichia

(3) Salmonella

(4) Streptococcus

Correct Answer: (3) Salmonella

Solution:

The peripheral smear shows **sickle-shaped RBCs**, suggesting **sickle cell disease**. - Children with sickle cell disease are **particularly susceptible to Salmonella osteomyelitis**, especially involving long bones. - This contrasts with **Staph aureus**, which is most common in general pediatric osteomyelitis.

Quick Tip

Osteomyelitis in sickle cell = Suspect Salmonella. Staph is more common in normal children.

---

60 A boy falls on the left shoulder joint and presents to the emergency department with shoulder pain. His left elbow is flexed and supported by the right hand. Which bone might be most likely fractured? (Image shows a displaced bone with arrow)

(1) Clavicle

(2) Scapula

(3) Humerus

(4) Acromion

Correct Answer: (1) Clavicle

Solution:

This presentation is classic for a **clavicle fracture**, particularly in children. - The **fall on the shoulder** with supporting of the elbow by the opposite hand is known as the "**cradle sign**". - Most common site: **middle third of the clavicle**, which is the weakest part. - The X-ray shows a displaced fracture of the clavicle.

Quick Tip

Fall on shoulder + supported elbow = suspect clavicle fracture, especially in kids.

---

61 An RTA patient presented to the emergency department with severe ankle pain. X-ray shows fracture dislocation of the ankle. What is the best next step in management?

(1) Neurovascular Assessment and Closed reduction and slab application

(2) Neurovascular Assessment and Closed reduction and cast application

(3) Neurovascular Assessments and Immediate surgery

(4) Neurovascular Assessments and Immediate open reduction

Correct Answer: (1) Neurovascular Assessment and Closed reduction and slab application

Solution:

The image shows a **displaced ankle fracture dislocation**. - Immediate step is **neurovascular assessment**, followed by **urgent reduction** to restore alignment and prevent soft tissue compromise. - A **posterior slab** is preferred initially to allow for swelling. - Definitive fixation is planned later after edema subsides.

Quick Tip

Dislocated fractures: Always assess neurovascular status, reduce, and immobilize with slab early.

---

62 Identify the cartilage given below (histological image shows alternating rows of collagen fibers and chondrocytes)

(1) Non-articular hyaline cartilage

(2) Articular hyaline cartilage

(3) Yellow cartilage

(4) White fibrocartilage

Correct Answer: (4) White fibrocartilage

Solution:

The histology shows **white fibrocartilage**, identifiable by: - **Parallel rows of chondrocytes** within lacunae - Alternating with **dense bundles of collagen fibers** - Found in intervertebral discs, pubic symphysis, and menisci. - Lacks perichondrium unlike hyaline cartilage.

Quick Tip

White fibrocartilage = rowed chondrocytes + dense collagen = shock absorber tissue.

---

63 Choose the correct statement regarding the telomerase theory of aging.

(1) Telomere stability is associated with aging

(2) Abnormal telomerase activation is associated with aging

(3) Decreased telomere length is associated with aging

(4) Increased telomere length is associated with aging

Correct Answer: (3) Decreased telomere length is associated with aging

Solution:

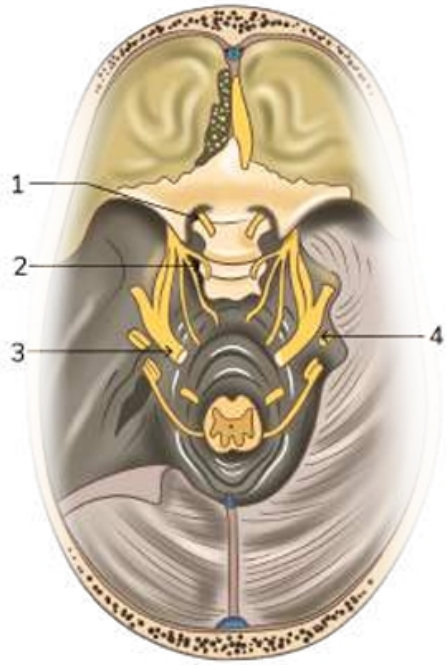
Telomeres are **repetitive nucleotide sequences** at the ends of chromosomes that protect genomic integrity. - With each cell division, **telomeres shorten**. - Eventually, critical shortening leads to **cell senescence or apoptosis**, contributing to aging. - Thus, **decreased telomere length is a hallmark of cellular aging**.

Quick Tip

Shorter telomeres = older cells. Telomerase helps prevent aging by maintaining telomere length.

---

64 A patient has unilateral headache, photophobia, and facial pain with lacrimation. Exam findings are normal. Identify the involved nerve (Image shows labeled cranial nerves)



(1) 1

(2) 2

(3) 3

(4) 4

Correct Answer: (3) 3

Solution:

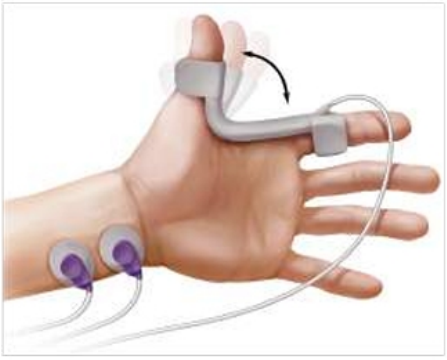
This clinical scenario is consistent with **trigeminal autonomic cephalalgias**, involving the **trigeminal nerve (CN V)**, particularly **V1 and V2** divisions. - The image label 3 corresponds to the **trigeminal ganglion/nerve**. - Symptoms: lacrimation, hemifacial pain, photophobia – all in the sensory territory of CN V.

Quick Tip

Trigeminal nerve (CN V) is key in facial pain, especially in trigeminal neuralgia and cluster headaches.

---

65 The image below shows neuromuscular monitoring of the patient after anesthesia. What is the most commonly used nerve for monitoring?



(1) Ulnar nerve

(2) Median nerve

(3) Radial nerve

(4) Metacarpal nerve

Correct Answer: (1) Ulnar nerve

Solution:

The image shows **Train-of-Four (TOF)** neuromuscular monitoring. - The **ulnar nerve** is most commonly used, with observation of **adductor pollicis muscle (thumb movement)**. - It provides a reliable assessment of **neuromuscular blockade recovery** after surgery.

Other nerves (median, radial) are less preferred due to inconsistent muscle response.

Quick Tip

Ulnar nerve + adductor pollicis = gold standard for neuromuscular monitoring in anesthesia.

---

66 Which of the following disorders follows autosomal recessive inheritance pattern?

(1) Huntington's disease

(2) Treacher Collins syndrome

(3) Cystic fibrosis

(4) Achondroplasia

Correct Answer: (3) Cystic fibrosis

Solution:

Cystic fibrosis is caused by mutations in the **CFTR gene** on chromosome 7 and follows an **autosomal recessive** inheritance. - Both copies of the gene must be mutated for the disease to manifest. - Other listed options like Huntington's and achondroplasia are autosomal dominant.

Quick Tip

Autosomal recessive = both alleles mutated. Think CF, thalassemia, sickle cell.

---

67 Which of the following helps in the transport of fatty acids across the inner mitochondrial membrane?

(1) Acyl carrier protein

(2) Carnitine

(3) Lecithin-cholesterol acyltransferase

(4) Carnitine and albumin

Correct Answer: (2) Carnitine

Solution:

Long-chain fatty acids are transported into the mitochondrial matrix by the **carnitine shuttle**. - **Carnitine acyltransferase I** and **II** assist in translocation. - This step is essential for **beta-oxidation**.

Quick Tip

Carnitine = fatty acid transport across mitochondrial membrane for oxidation.

---

68 A single mutation in a nucleotide base pair resulting in a termination codon is known as ?

(1) Missense mutation

(2) Nonsense mutation

(3) Stop mutation

(4) Silent mutation

Correct Answer: (2) Nonsense mutation

Solution:

A **nonsense mutation** leads to a **premature stop codon**, halting protein translation. - This results in a **truncated, non-functional protein**. - Missense = single amino acid change. - Silent = no amino acid change.

Quick Tip

Nonsense = STOP the nonsense! Premature stop codon introduced.

---

69 DNA packing is done by which of the following?

(1) Histone

(2) Glycoprotein

(3) Nucleic acid

(4) Adenine

Correct Answer: (1) Histone

Solution:

Histones are positively charged proteins that **bind to negatively charged DNA**, forming nucleosomes. - This enables **tight packing of DNA** into chromatin. - Histone H1 helps with higher-order chromatin folding.

Quick Tip

Histone proteins help DNA wrap into nucleosomes → chromatin → chromosomes.

---

70 An adolescent male presents with exercise intolerance and cramps on exertion. Which enzyme deficiency could be the cause?

(1) Myophosphorylase

(2) Hexokinase

(3) Glucose-6-phosphatase

(4) Hepatic glycogen phosphorylase

Correct Answer: (1) Myophosphorylase

Solution:

The condition described is **McArdle disease (Glycogen Storage Disease Type V)**. - It is caused by **myophosphorylase deficiency**, which leads to **impaired glycogen breakdown in muscles**. - Symptoms: muscle cramps, weakness after exercise, myoglobinuria.

Quick Tip

Myophosphorylase deficiency = McArdle's → muscle cramps + myoglobinuria post exertion.

---

71 Which of the following enzyme activities can be estimated in red blood cells to diagnose vitamin B2 deficiency?

(1) Transketolase

(2) Glutathione reductase

(3) Kynureninase

(4) Pyruvate dehydrogenase

Correct Answer: (2) Glutathione reductase

Solution:

Glutathione reductase uses **FAD (derived from vitamin B2)** as a coenzyme. - Its activity in **RBCs** reflects the body's riboflavin (B2) status. - A decrease in glutathione

reductase activity is a diagnostic marker of B2 deficiency. - Transketolase (TPP-dependent) is used for vitamin B1 assessment.

Quick Tip

Think B2 → FAD → glutathione reductase activity (in RBCs).

---

72 The following (Bitot's spots on conjunctiva) is due to the deficiency of?

(1) Vitamin C

(2) Vitamin A

(3) Vitamin B

(4) Vitamin E

Correct Answer: (2) Vitamin A

Solution:

The image shows **Bitot's spots**—foamy patches on the conjunctiva, classic for **vitamin A deficiency**. - Often associated with **xerophthalmia**, dryness, and risk of **corneal ulceration/blindness**. - Vitamin A is essential for epithelial health and visual pigment formation.

Quick Tip

Bitot's spots = Vitamin A deficiency = Night blindness + xerosis + corneal changes.

---

73 A child with anemia, thrombocytopenia, hepatosplenomegaly, and bony pain shows "crumpled tissue paper" appearance in marrow. What is the enzyme defect?

(1) Glucocerebrosidase

(2) Sphingomyelinase

(3) Hexosaminidase

(4) Glucose-6-phosphatase

Correct Answer: (1) Glucocerebrosidase

Solution:

These features are classic for **Gaucher disease**, a **lysosomal storage disorder**. - Caused by **glucocerebrosidase deficiency** $\rightarrow$ accumulation of glucocerebroside in macrophages. - Bone marrow biopsy: **"crumpled tissue paper"** macrophages (Gaucher cells).

Quick Tip

Gaucher = Glucocerebrosidase $\downarrow \rightarrow$ lipid-laden macrophages = crumpled paper cells.

---

74 The electron transport chain is a series of redox reactions that result in ATP synthesis. Which of the following is a cytochrome complex IV inhibitor?

(1) Cyanide

(2) Carbon dioxide

(3) Oligomycin

(4) Ouabain

Correct Answer: (1) Cyanide

Solution:

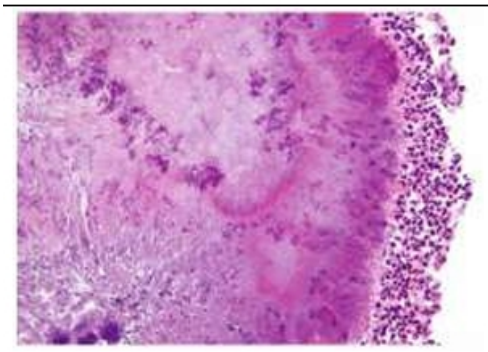
Cyanide inhibits **cytochrome c oxidase (Complex IV)** in the electron transport chain, halting cellular respiration. - This prevents the final step of electron transfer to oxygen, leading to severe hypoxia and cell death. - Oligomycin inhibits ATP synthase (Complex V), and ouabain affects Na/K ATPase, not ETC.

Quick Tip

Cyanide = deadly = inhibits Complex IV $\rightarrow$ stops ATP production $\rightarrow$ cellular death.

---

75 A farmer presents with foot swelling and multiple discharging sinuses. Microscopy of granules suggests a mixed infection. Which is true regarding this condition?



(1) Both bacteria and fungi can be causative

(2) Undergoes lymphatic spread

(3) There is lymphocyte accumulation

(4) Involves only superficial tissues

Correct Answer: (1) Both bacteria and fungi can be causative

Solution:

The condition is **mycetoma**, which presents with **granules and discharging sinuses**. - Can be caused by **bacteria (actinomycetoma)** or **fungi (eumycetoma)**. - Involves subcutaneous tissue and often bone, but **not just superficial**.

Quick Tip

Mycetoma = granules + sinus + both fungi and bacteria possible.

---

76 Farmer with cauliflower-shaped foot lesion and "copper penny bodies" on microscopy — most likely diagnosis?

(1) Chromoblastomycosis

(2) Blastomycosis

(3) Sporotrichosis

(4) Phaeohyphomycosis

Correct Answer: (1) Chromoblastomycosis

Solution:

Chromoblastomycosis is a chronic fungal infection characterized by: - Verrucous

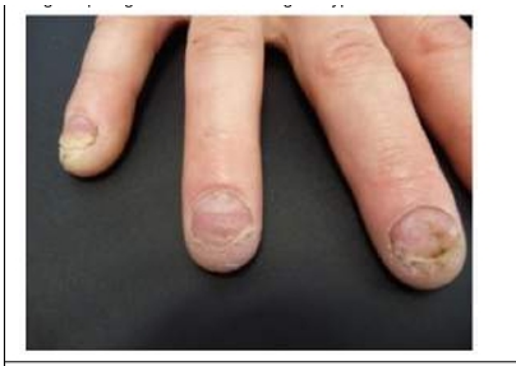
(cauliflower-like) lesions - **Copper-colored sclerotic bodies** (Medlar bodies or copper penny bodies) on microscopy. - Common in farmers and rural workers.

Quick Tip

Copper penny bodies = Chromoblastomycosis = chronic verrucous foot lesion.

---

77 Irregular pitting of nails with subungual hyperkeratosis is seen in _____.



(1) Lichen planus

(2) Psoriasis

(3) Atopic dermatitis

(4) Alopecia areata

Correct Answer: (2) Psoriasis

Solution:

Nail changes in **psoriasis** include: - **Irregular pitting** - **Subungual hyperkeratosis** - Onycholysis and nail discoloration. These findings help distinguish psoriasis from alopecia areata and eczema.

Quick Tip

Think psoriasis with nail pitting + hyperkeratosis = nail matrix + nail bed involvement.

---

78 A 35-year-old woman presents to you with hair loss for the past three months. She tested positive for COVID-19 eight months ago. What is the most likely diagnosis?

(1) Tinea capitis

(2) Telogen effluvium

(3) Trichotillomania

(4) Female – pattern androgenic alopecia

Correct Answer: (2) Telogen effluvium

Solution:

Telogen effluvium is a common cause of diffuse hair shedding typically occurring 2–3 months after a triggering event. In this case, the woman had COVID-19 eight months ago, and now, after a lag period, she presents with hair loss lasting for 3 months. The condition is often precipitated by systemic illness, stress, or major life events. The clinical picture and timing strongly suggest telogen effluvium rather than fungal infections, self-inflicted hair pulling, or patterned hair loss.

Quick Tip

Telogen effluvium typically starts 2–3 months after a physical or emotional stressor and presents with diffuse thinning of hair.

---

79 A post-COVID patient, who is a known diabetic, develops unilateral facial pain and loosening of teeth. Which investigation would you do to confirm the diagnosis of this patient?

(1) MRI

(2) Biopsy with histopathologic examination

(3) Serum ferritin

(4) HbA1c

Correct Answer: (2) Biopsy with histopathologic examination

Solution:

In a diabetic patient presenting post-COVID with facial pain and loosening of teeth, mucormycosis should be a high clinical suspicion. Though imaging like MRI helps in assessing the extent, definitive diagnosis requires biopsy with histopathological examination to identify fungal hyphae. It is the gold standard to confirm invasive fungal infections like mucormycosis.

Quick Tip

Always confirm mucormycosis with tissue biopsy; imaging only shows extent, not diagnosis.

---

80 A patient presents with the complaint of inability to close the eye, drooling of saliva, and deviation of the angle of the mouth. Which of the following nerves is most likely to be affected?

(1) Facial nerve

(2) Trigeminal nerve

(3) Oculomotor nerve

(4) Glossopharyngeal nerve

Correct Answer: (1) Facial nerve

Solution:

The facial nerve (cranial nerve VII) innervates the muscles of facial expression. Its dysfunction can result in inability to close the eyelid, drooping of the mouth corner, and drooling, all of which are seen in lower motor neuron facial nerve palsy. Trigeminal nerve is mainly sensory to face and motor to mastication, oculomotor nerve affects eye movement, and glossopharyngeal controls pharyngeal functions and taste from posterior tongue.

Quick Tip

Involvement of facial muscles including inability to close the eye indicates lower motor neuron facial nerve palsy.

---

81 An adult man in a restaurant suddenly begins choking on his food. He is conscious. The following procedure was performed. Identify the procedure.

(1) Heimlich's maneuver

(2) Back slap

(3) Chest thrust

(4) Blind insertion of finger

Correct Answer: (1) Heimlich's maneuver

Solution:

The Heimlich maneuver is the recommended first aid for conscious adults experiencing choking due to airway obstruction by a foreign body. The maneuver involves abdominal thrusts that elevate the diaphragm and generate a rapid increase in intra-thoracic pressure to expel the obstructing object. The image shows the classic technique where the rescuer positions their hands just above the navel and thrusts inward and upward.

Quick Tip

Heimlich maneuver is the first-line response for conscious choking adults to dislodge airway obstruction.

---

82 A child presents with recurrent chest infections and abdominal pain. There is a history of 1 blood transfusion in the past. On examination, he had icterus and mild splenomegaly. Electrophoresis shows increased HbA2, HbF, and S spike. What is the likely diagnosis?

(1) Beta thalassemia

(2) HbC disease

(3) Sickle cell disease

(4) Acute coronary disease

Correct Answer: (1) Beta thalassemia

Solution:

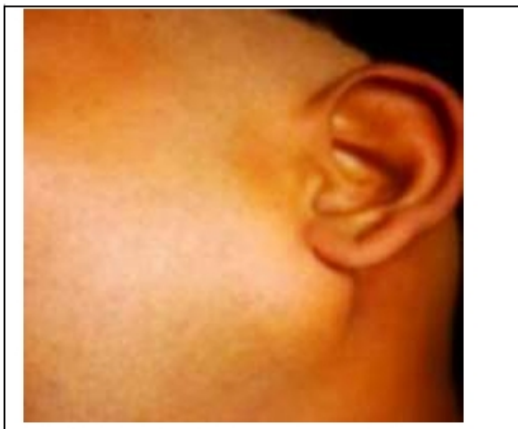
The electrophoresis findings—elevated HbA2 and HbF—are classic for beta thalassemia. HbS spike may be seen in thalassemia-sickle cell disease co-existence (sickle beta-thalassemia). History of recurrent infections, transfusion dependence, splenomegaly, and icterus further support a diagnosis of beta thalassemia major or intermedia.

Quick Tip

Beta thalassemia shows elevated HbA2 and HbF on electrophoresis with clinical features of anemia, transfusions, and splenomegaly.

---

83 A patient presents with a firm, tender, slow-growing mass below the ear as shown in the image below. What could be the diagnosis?



(1) Bezold abscess

(2) Parotid abscess

(3) Upper cervical lymphadenopathy

(4) Osteoma of the mandible

Correct Answer: (2) Parotid abscess

Solution:

The image shows a swelling located just below the ear, in the region of the parotid gland. A parotid abscess typically presents as a firm, tender, and slow-growing mass in this location. It may be associated with pain, fever, and sometimes trismus or pus discharge from Stensen's duct. Other options like Bezold abscess occur deeper and posteriorly, and lymphadenopathy would usually be more superficial and mobile.

Quick Tip

A swelling below the ear that is firm, tender, and localized is often due to a parotid abscess.

---

84 A patient comes with a history of asthma and sinusitis. On looking into his medical records, you notice this has been attributed to Samter's triad. Which drug should be avoided in this patient?

(1) Cotrimoxazole

(2) Co-amoxiclav

(3) Aspirin

(4) Chloramphenicol

Correct Answer: (3) Aspirin

Solution:

Samter's triad consists of asthma, nasal polyps, and aspirin sensitivity. Aspirin and other NSAIDs inhibit cyclooxygenase, leading to increased leukotriene production, which exacerbates respiratory symptoms in these patients. Therefore, aspirin should be strictly avoided in individuals with this triad.

Quick Tip

In Samter's triad (asthma, nasal polyps, aspirin sensitivity), aspirin should be avoided to prevent bronchospasm.

85 Why do neoplastic cells utilize Warburg metabolism?

(1) It decreases glucose utilization by neoplastic cells

(2) It forms metabolic intermediates which are needed for cell growth and multiplication

(3) It provides more energy in the form of increased ATP production

(4) In prevents apoptosis and makes the cancer immortal

Correct Answer: (2) It forms metabolic intermediates which are needed for cell growth and multiplication

Solution:

Warburg metabolism refers to the preference of cancer cells to undergo aerobic glycolysis rather than oxidative phosphorylation. Although less efficient in ATP generation, this pathway rapidly provides essential intermediates for nucleotide, amino acid, and lipid synthesis necessary for cell proliferation.

Quick Tip

Cancer cells use aerobic glycolysis (Warburg effect) to support rapid cell growth by producing biosynthetic precursors.

---

86 A 70-year-old male patient presents with decreased hearing in higher frequencies. It was noted that the basilar membrane was affected. Which of the following structures lie near the affected structure?

(1) Modiolus

(2) Stria vascularis

(3) Oval window

(4) Helicotrema

Correct Answer: (3) Oval window

Solution:

High-frequency sounds are detected near the base of the cochlea, where the basilar membrane is narrow and stiff—close to the oval window. In contrast, low-frequency sounds are detected at the apex, near the helicotrema. Hence, a lesion affecting high-frequency

hearing implicates structures near the oval window.

Quick Tip

High-frequency hearing loss involves the base of the cochlea near the oval window.

---

87 A 20-year-old male patient presents with unilateral nasal obstruction and recurrent bleeding for the past 1 year. Transnasal endoscopic results are shown below. A contrast-enhanced CT revealed a mass extending from the posterior choana to the nasopharynx. What is the most likely diagnosis?

(1) Nasopharyngeal angiofibroma

(2) Antrochoanal polyp

(3) Rhinoscleroma

(4) Concha bullosa

Correct Answer: (1) Nasopharyngeal angiofibroma

Solution:

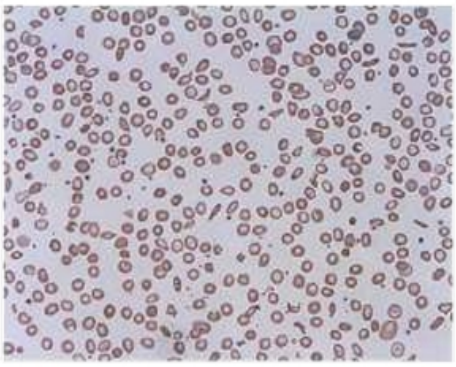
Nasopharyngeal angiofibroma is a benign but highly vascular tumor, typically seen in adolescent and young adult males. It presents with recurrent epistaxis and nasal obstruction. Imaging and endoscopy reveal a reddish, vascular mass in the nasopharynx extending from the posterior choana.

Quick Tip

In young males with recurrent epistaxis and nasal mass, suspect nasopharyngeal angiofibroma.

---

88 An elderly patient presents with anemia and hemoglobinuria. Investigations reveal increased lactate dehydrogenase (LDH). The peripheral smear image is given below. Which of the following physical examination findings can support the likely diagnosis?



(1) Splenomegaly

(2) Frontal bossing

(3) Mechanical second heart sound

(4) Goitre

Correct Answer: (1) Splenomegaly

Solution:

The peripheral smear shows numerous spherocytes, which are typical of hereditary spherocytosis. This condition involves extravascular hemolysis, leading to anemia, hemoglobinuria, elevated LDH, and splenomegaly. The spleen removes spherocytes from circulation, causing its enlargement.

Quick Tip

Spherocytosis is associated with splenomegaly due to increased RBC destruction in the spleen.

---

89 All of the following statements are true regarding neutrophil extracellular trapping (NET) except that

(1) It is detected in blood during sepsis

(2) It is produced in response to bacterial infection

(3) Mitochondrial DNA is seen

(4) It is chromatin with antibacterial enzymes

Correct Answer: (3) Mitochondrial DNA is seen

Solution:

Neutrophil extracellular traps (NETs) are composed of nuclear chromatin and antibacterial proteins expelled by neutrophils in response to pathogens like bacteria. They are detectable during sepsis and serve as an immune defense. However, mitochondrial DNA is not typically involved—it's nuclear DNA that constitutes NETs.

Quick Tip

NETs are formed from nuclear chromatin, not mitochondrial DNA, and trap pathogens in sepsis.

---

90 Identify the gun that caused the wound and the range of the shot.

(1) Shotgun, intermediate range

(2) Shotgun, close range

(3) Pistol, near shot

(4) Pistol, close shot

Correct Answer: (3) Pistol, near shot

Solution:

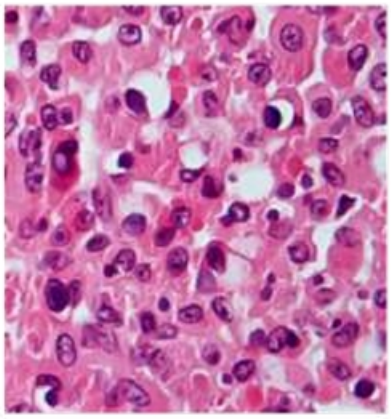
The wound in the image shows features of a near-contact or close-range firearm injury, with signs like a central punched-out wound and surrounding abrasion collar. These features are consistent with a pistol fired at near range. Shotguns generally produce a more dispersed wound pattern with multiple pellet entries.

Quick Tip

Pistol wounds at near range have central penetration with abrasion collar due to bullet impact and gas effects.

---

91 A patient underwent cystoscopy, which showed multiple yellow-white plaques in the trigone of the bladder. The histopathology image is given below. What is the diagnosis?



(1) Interstitial cystitis

(2) Malakoplakia

(3) Polypoid cystitis

(4) Acute cystitis

Correct Answer: (2) Malakoplakia

Solution:

Malakoplakia is a rare inflammatory condition of the bladder characterized by yellow-white plaques on cystoscopy. Histologically, it shows large macrophages (von Hansemann cells) with basophilic inclusions called Michaelis-Gutmann bodies. These inclusions are diagnostic and represent partially digested bacteria within lysosomes.

Quick Tip

Look for Michaelis-Gutmann bodies in bladder biopsies with yellow-white plaques to confirm malakoplakia.

---

92 Identify the type of wound from the image.

(1) Defense wounds

(2) Antemortem wound

(3) Postmortem wound

(4) Hesitation cuts

Correct Answer: (1) Defense wounds

Solution:

Defense wounds are seen on the palms and forearms when a person tries to ward off an attack, especially in assault cases. The image shows injuries on the palmar surfaces of the hands, consistent with active defensive attempts to block a weapon, typically seen in homicides.

Quick Tip

Defense wounds commonly occur on hands and forearms as a victim tries to protect themselves from a weapon.

---

93 Which of the following measures are associated with an increased life span?

(1) Moderate of regular exercise for 30 min

(2) Decrease stress

(3) Decreasing calorie intake by 30 percent

(4) Pharmacological intervention with proton pump inhibitors

Correct Answer: (3) Decreasing calorie intake by 30 percent

Solution:

Caloric restriction, especially a 30

Quick Tip

Among various interventions, calorie restriction shows the most consistent evidence for lifespan extension in studies.

---

94 A 45-year-old female patient is told about the benefits and complications of a hysterectomy, and she agrees to the procedure. What kind of consent is this?

(1) Informed consent

(2) Implied consent

(3) Opt-out

(4) Passive consent

Correct Answer: (1) Informed consent

Solution:

Informed consent is a process by which a patient voluntarily confirms their willingness to undergo a particular medical intervention, after being informed of all the risks, benefits, and alternatives. It is a legal and ethical obligation in medical practice, especially for procedures like surgery.

Quick Tip

Informed consent involves explaining risks and benefits and getting voluntary agreement from the patient.

---

95 A 56-year-old man was diagnosed with COVID-19 and was put on mechanical ventilation. He passed away after a week. What is the likely post-mortem change seen in the lungs?

(1) Thick layer of fibrin lining the alveoli

(2) Acute and chronic alveolar hemorrhage

(3) Perivascular cuffing

(4) Pulmonary artery hypertrophy with increased resistance

Correct Answer: (2) Acute and chronic alveolar hemorrhage

Solution:

In severe COVID-19 infections, the lungs often show diffuse alveolar damage with both acute and chronic alveolar hemorrhage. These findings reflect the widespread inflammation and vascular injury characteristic of COVID-19 pathology in critically ill patients.

Quick Tip

COVID-19-related lung pathology often includes alveolar hemorrhage and diffuse damage due to cytokine storm and vascular leakage.

---

96 A dead body is brought for evaluation. On post-mortem examination, a ligature completely encircled the neck, horizontal, and below the thyroid level was seen. There was no dribbling of saliva. What is the cause of death?

(1) Throttling

(2) Ligature strangulation

(3) Gagging

(4) Hanging

Correct Answer: (2) Ligature strangulation

Solution:

Ligature strangulation typically presents with a horizontal ligature mark completely encircling the neck, usually found below the thyroid cartilage. The absence of dribbling of saliva also favors strangulation over hanging, where dribbling is commonly seen.

Quick Tip

Horizontal ligature mark and no dribbling of saliva suggest ligature strangulation over hanging.

---

97 A surgeon returns home from a party after many pegs of alcohol and is called to perform an emergency operation. During the operation, the assisting staff noticed the surgeon's handshaking and the instruments falling. He eventually nicks an artery, and the patient collapses. Under which of the following terms will this incident be tried?

(1) Criminal negligence

(2) Civil negligence not amounting to criminal negligence

(3) Therapeutic misadventure

(4) Dichotomy

Correct Answer: (1) Criminal negligence

Solution:

Performing surgery under the influence of alcohol is a clear breach of duty with disregard for patient safety, constituting criminal negligence. This act shows gross deviation from the standard of care expected from a medical professional.

Quick Tip

Negligence with recklessness or intoxication during duty qualifies as criminal negligence in court.

---

98 During the court proceedings, the defense lawyer asks a leading question, which the prosecutor appeals against. The judge grants the appeal. Leading questions are not allowed in all of the following except?

(1) Re-examination

(2) Cross-examination

(3) Examination in chief

(4) Dying declaration

Correct Answer: (2) Cross-examination

Solution:

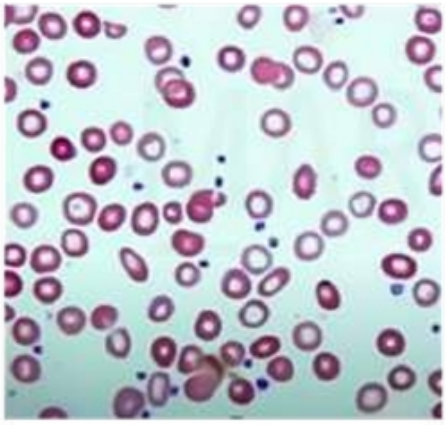
Leading questions—those that suggest the answer—are generally not permitted during direct examination or re-examination. However, they are allowed during cross-examination, as the witness is presumed to be hostile or at least aligned with the opposing side.

Quick Tip

Leading questions are allowed during cross-examination but not during direct or re-examination.

---

99 A female patient presented with fatigue and a history of piles. Routine complete blood count analysis showed hemoglobin of 9 g/dL, MCV 60fL, and RBC count of 5.2 million. A peripheral smear is given below. Which of the following is the next best investigation for this patient?



(1) HbA2 levels

(2) Serum ferritin levels

(3) Serum folate levels

(4) Serum homocysteine levels

Correct Answer: (2) Serum ferritin levels

Solution:

The peripheral smear shows microcytic hypochromic anemia. The low MCV (60 fL), combined with a history of piles (which can cause chronic blood loss), strongly points

toward iron deficiency anemia. The most appropriate next step is to measure serum ferritin, the most sensitive marker for iron stores.

Quick Tip

In suspected iron deficiency anemia, serum ferritin is the best test to confirm low iron stores.

---

100 A 56-year-old man presents with dragging pain in the abdomen. On examination, there is massive splenomegaly. Peripheral smear shows leukocytosis with increased myelocytes, metamyelocytes and basophils. Which of the following translocations is seen in this condition?

(1) t(9;22)

(2) t(8;22)

(3) t(15;17)

(4) t(8;14)

Correct Answer: (1) t(9;22)

Solution:

The presentation and smear findings are classic for chronic myeloid leukemia (CML). The hallmark of CML is the Philadelphia chromosome, which results from a t(9;22) translocation creating the BCR-ABL fusion gene. This gene leads to unregulated tyrosine kinase activity and excessive proliferation of granulocytic cells.

Quick Tip

CML is strongly associated with the t(9;22) Philadelphia chromosome and responds to tyrosine kinase inhibitors.

---

101 A patient with diabetes mellitus for the past 5 years presents with vomiting and abdominal pain. She is non-compliant with medication and appears dehydrated. Investigations revealed a blood sugar value of 500 mg/dl and the presence of ketone bodies. What is the next best step in management?

(1) Intravenous fluids with long-acting insulin

(2) Intravenous fluids

(3) Intravenous insulin

(4) Intravenous fluids with regular insulin

Correct Answer: (4) Intravenous fluids with regular insulin

Solution:

This is a case of diabetic ketoacidosis (DKA). Management involves rapid fluid resuscitation along with insulin therapy. Regular insulin is the insulin of choice as it is short-acting and can be titrated based on glucose and ketone levels. Long-acting insulin is not used for acute correction.

Quick Tip

In DKA, initial management includes IV fluids and IV regular insulin to correct dehydration and acidosis.

---

102 A patient diagnosed to be retro-positive was started on highly active antiretroviral therapy (HAART). Which of the following can be used to monitor treatment efficacy?

(1) CD4+ T cell count

(2) Viral load

(3) p24 antigen

(4) Viral serotype

Correct Answer: (2) Viral load

Solution:

The most accurate indicator of HAART efficacy is the patient's viral load. It reflects the amount of active viral replication. Effective therapy leads to a rapid decline in viral load. CD4 count is used to assess immune status, but viral load directly reflects response to treatment.

Quick Tip

Monitoring HIV treatment efficacy is best done with serial measurements of viral load.

103 A hypertensive patient who is non-compliant with medication presents to you with sudden onset breathlessness. A chest x-ray was done, which is shown below. How will you manage this patient?

(1) Intravenous salbutamol

(2) Intravenous nitro-glycerine

(3) Nebulization with salbutamol

(4) Oxygen and antibiotics

Correct Answer: (2) Intravenous nitro-glycerine

Solution:

The chest X-ray likely shows pulmonary edema, a common complication of uncontrolled hypertension and heart failure. Nitro-glycerine, a vasodilator, helps to reduce preload and afterload, improving the patient's condition by decreasing the workload on the heart and promoting fluid redistribution.

Quick Tip

In hypertensive patients with pulmonary edema, intravenous nitro-glycerine is used to reduce preload and afterload.

104 A 1-day-old neonate has not passed urine since birth. What is the next step in

management?

(1) Continue breast feeding not observed

(2) Admit to NICU

(3) Start artificial feeding

(4) Start intravenous fluids

Correct Answer: (1) Continue breast feeding not observed

Solution:

In a neonate, failure to pass urine in the first 24 hours of life is usually a sign of dehydration or a urinary tract obstruction. First-line management should include ensuring adequate breast feeding. If this does not resolve the issue, further investigations, such as ultrasound or other imaging, may be necessary.

Quick Tip

If a neonate hasn't urinated in the first 24 hours, ensure adequate breast feeding before further investigations.

---

105 A patient on anti-depressants presented to you with hypotension. An ECG was done, which showed wide QRS complexes and right axis deviation. How will you manage this patient?

(1) Antiarrhythmics

(2) Intravenous sodium bicarbonate

(3) Propranolol

(4) Phenytoin

Correct Answer: (2) Intravenous sodium bicarbonate

Solution:

Wide QRS complexes and right axis deviation are indicative of drug toxicity, likely from tricyclic antidepressants (TCAs). Sodium bicarbonate is used in TCA overdose because it helps to stabilize the cardiac membranes, reverse the sodium channel blockade, and correct acidosis.

Quick Tip

In TCA overdose, intravenous sodium bicarbonate is the treatment of choice to prevent arrhythmias.

---

106 A 35-year-old female patient presents to you with fever, breathlessness, and cough with expectoration. A CT scan was done which is shown below. What is the likely diagnosis?

(1) Consolidation with air bronchogram

(2) Mediastinal mass

(3) Pleural effusion

(4) Diaphragmatic hernia

Correct Answer: (1) Consolidation with air bronchogram

Solution:

The CT scan shows consolidation with air bronchograms, which is characteristic of pneumonia. Air bronchograms occur when the alveoli become consolidated with fluid or exudate, while the airways remain filled with air, making the bronchi visible on imaging.

Quick Tip

Air bronchogram sign is typical of consolidation in pneumonia, where the airways remain patent while the alveoli fill with exudate.

---

107 A 7-year-old boy presented with abdominal pain, vomiting, oliguric, and periorbital puffiness following chemotherapy. Investigations reveal hyperuricemia, raised creatinine levels, and hyperkalemia. What is the next best step in the management of this condition?

(1) Hydration

(2) Probenecid

(3) Allopurinol

(4) Rasburicase

Correct Answer: (1) Hydration

Solution:

The child has developed tumor lysis syndrome (TLS), which is characterized by hyperuricemia, hyperkalemia, hyperphosphatemia, and hypocalcemia due to the rapid breakdown of tumor cells. The first step in management of TLS is adequate hydration to prevent acute kidney injury by flushing out the excess metabolites.

Quick Tip

In cases of tumor lysis syndrome, hydration is critical to prevent renal damage and help in the excretion of uric acid.

---

108 A baby presented with abdominal pain. On examination, a mass is palpated in the right lumbar region. A barium enema is done, and the image is given below. What is the likely diagnosis?

(1) Intussusception

(2) Volvulus

(3) Duodenal atresia

(4) Intestinal obstruction

Correct Answer: (1) Intussusception

Solution:

The barium enema image shows a ”coiled spring” appearance, which is characteristic of intussusception. This occurs when a part of the intestine telescopes into an adjacent part, leading to obstruction and ischemia. It is a common cause of abdominal pain and vomiting in infants and requires prompt intervention.

Quick Tip

Intussusception is a pediatric emergency. The barium enema can sometimes be both diagnostic and therapeutic.

---

109 A female patient with a negative urine pregnancy test presents to you with galactorrhea. An MRI was done which revealed a large pituitary tumor. If the patient is not willing for surgery, which of the following is the best drug for treatment?

(1) Bromocriptine

(2) Promethazine

(3) Octreotide

(4) Clozapine

Correct Answer: (1) Bromocriptine

Solution:

Bromocriptine is a dopamine agonist that reduces the secretion of prolactin from the pituitary gland. It is used in the treatment of prolactinomas, which are pituitary tumors that secrete prolactin, leading to galactorrhea.

Quick Tip

Dopamine agonists like bromocriptine are the first-line treatment for prolactinomas, as they reduce prolactin levels and shrink the tumor.

---

110 A woman presents to you with fever, arthralgia, ulcers, fatigue for the past six months, and new-onset hematuria. Urine examination reveals RBC casts and proteinuria. What is the likely diagnosis?

(1) Acute interstitial nephritis

(2) Poststreptococcal glomerulonephritis

(3) Lupus nephritis

(4) IgA nephropathy

Correct Answer: (3) Lupus nephritis

Solution:

Lupus nephritis is a common complication of systemic lupus erythematosus (SLE), which is associated with fever, arthralgia, ulcers, fatigue, and renal involvement. The presence of RBC casts and proteinuria on urine examination supports the diagnosis.

Quick Tip

Lupus nephritis can present with a variety of symptoms, including systemic manifestations and renal findings such as RBC casts and proteinuria.

---

111 A man on diuretics presents with weakness. An ECG was done which showed flat T waves and prominent U waves. What is the most likely diagnosis?

(1) Hypokalemia

(2) Hyperkalemia

(3) Hypomagnesemia

(4) Hypernatremia

Correct Answer: (1) Hypokalemia

Solution:

Flat T waves and prominent U waves on ECG are characteristic findings of hypokalemia, which is a common side effect of diuretic therapy. Hypokalemia can lead to muscle weakness and ECG changes.

Quick Tip

ECG changes like flat T waves and prominent U waves are key indicators of hypokalemia. Diuretics are a common cause of this electrolyte imbalance.

---

112 A male patient presents to the emergency department. The arterial blood gas report is as follows: pH, 7.2; pCO2, 81 mmHg; and HCO3, 40meq/L. Which of the following is the most likely diagnosis?

(1) Respiratory alkalosis

(2) Metabolic acidosis

(3) Respiratory acidosis

(4) Metabolic alkalosis

Correct Answer: (3) Respiratory acidosis

Solution:

The patient presents with a low pH (7.2), high pCO2 (81 mmHg), and a normal bicarbonate level (40meq/L). These findings are consistent with respiratory acidosis, where the body retains CO2 due to impaired ventilation, leading to an acidic environment.

Quick Tip

In respiratory acidosis, pCO2 is elevated due to impaired lung function or hypoventilation, leading to a compensatory increase in bicarbonate over time.

---

113 Multidrug-resistant (MDR) tuberculosis shows resistance to which of the following drugs?

(1) Isoniazid, rifampicin, and fluoroquinolone

(2) Fluoroquinolones

(3) Isoniazid and rifampicin

(4) Isoniazid, rifampicin, and kanamycin

Correct Answer: (3) Isoniazid and rifampicin

Solution:

MDR-TB is resistant to at least isoniazid and rifampicin, which are the two most powerful first-line drugs used to treat tuberculosis. Resistance to fluoroquinolones and kanamycin may be present in extensively drug-resistant (XDR) tuberculosis but not necessarily in MDR-TB.

Quick Tip

MDR-TB is defined by resistance to the two most critical first-line drugs: isoniazid and rifampicin. Treatment often requires second-line drugs.

---

114 A patient presents to you with fever, jaundice, and malaise. What is the most likely diagnosis based on the serology reports given below?

Anti-HBc (IgM): Positive

HBsAg: Positive

Anti-HBs: Negative

Anti-HCV antibodies: Negative

(1) Acute hepatitis B

(2) Acute hepatitis C

(3) Chronic hepatitis B

(4) Chronic hepatitis C

Correct Answer: (1) Acute hepatitis B

Solution:

The serology results showing positive HBsAg and anti-HBc (IgM) indicate acute hepatitis B infection. The negative anti-HBs and anti-HCV antibodies further support this diagnosis.

Quick Tip

In acute hepatitis B, IgM antibodies to the core antigen (Anti-HBc IgM) are positive, and HBsAg remains positive.

---

115 A child presents to the emergency department with a history of ingestion of 10-20 ferrous sulphate tablets. Arterial blood gas revealed acidosis. Which of the following can be used in the management of this condition?

(1) Deferoxamine

(2) Activated charcoal

(3) Dimercaprol

(4) Penicillamine

Correct Answer: (1) Deferoxamine

Solution:

Deferoxamine is used in the treatment of iron poisoning, as it chelates iron and enhances its excretion. This is the most effective treatment for acute iron toxicity.

Quick Tip

For iron overdose, deferoxamine is the antidote. Activated charcoal is not effective in iron poisoning.

---

116 A photographer who recently returned from Africa presents to the emergency department with abdominal pain, hepatomegaly, and hemorrhagic manifestations. He died despite treatment, and an autopsy revealed intranuclear Torres bodies in the liver. Which of the following vaccines with which strain could have prevented it?

(1) 17D

(2) Nakayama vaccine

(3) Weigl's vaccine

(4) Jeryl Lynn strain

Correct Answer: (1) 17D

Solution:

The 17D strain of the yellow fever vaccine is highly effective in preventing yellow fever, which is the likely cause of the patient's symptoms, as indicated by the presence of Torres bodies in the liver.

Quick Tip

Yellow fever can be prevented by the 17D strain of the yellow fever vaccine, which is highly effective.

---

117 A militant presents with rashes all over his body sparing the palms and soles. On examination, he was febrile and lice were noted. Which of the following is responsible for his condition?

(1) Rickettsia typhi

(2) Rickettsia prowazekii

(3) Rickettsia akari

(4) Rickettsia conorii

Correct Answer: (2) Rickettsia prowazekii

Solution:

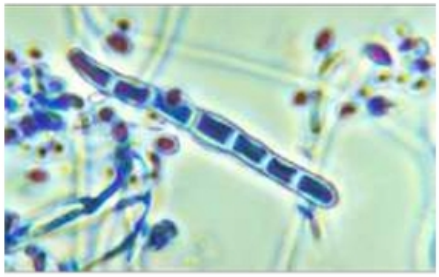
Rickettsia prowazekii is the causative organism of epidemic typhus, which presents with a rash sparing the palms and soles and is often associated with lice.

Quick Tip

Rickettsia prowazekii causes epidemic typhus and is transmitted by lice. The rash typically spares the palms and soles.

---

118 A patient presents with itching in the axilla. On microscopic examination of the skin scrapings, a red pigment-producing fungus with pencil-shaped macroconidia is seen. Which of the following is the most likely organism?



(1) Trichophyton violaceum

(2) Trichophyton rubrum

(3) Trichophyton tonsurans

(4) Trichophyton schoenleinii

Correct Answer: (2) Trichophyton rubrum

Solution:

Trichophyton rubrum is a common dermatophyte that produces red pigment and is known for causing dermatophytosis, such as tinea corporis and tinea cruris. The presence of pencil-shaped macroconidia is a distinguishing feature.

Quick Tip

Trichophyton rubrum is a common cause of dermatophyte infections and produces characteristic red pigments and pencil-shaped macroconidia.

---

119 A female patient presents with complaints of thick white vaginal secretions. Which of the following can be used to identify the likely species of the causative agent?

(1) Birds seed agar

(2) Brain heart infusion agar

(3) CHRO Magar

(4) Sabouraud dextrose agar

Correct Answer: (3) CHRO Magar

Solution:

CHRO Magar is a selective medium used for the isolation of Candida species, particularly Candida albicans, which is a common cause of vaginal infections presenting as thick white secretions.

Quick Tip

CHRO Magar is specific for Candida species and can help identify the causative agent in cases of vaginal discharge.

---

120 A 12-year-old boy presents with right upper quadrant pain, calf pain, conjunctival

suffusion, icterus, and fever. Examination shows tender hepatomegaly. What is the most likely diagnosis?

(1) Chikungunya

(2) Leptospirosis

(3) Dengue hemorrhagic fever

(4) Encephalopathy caused by hepatitis A

Correct Answer: (2) Leptospirosis

Solution:

Leptospirosis is characterized by fever, hepatomegaly, conjunctival suffusion, and jaundice (icterus). It is often associated with exposure to contaminated water. The other options do not present with the same constellation of symptoms.

Quick Tip

Leptospirosis presents with hepatomegaly, fever, and conjunctival suffusion, particularly in individuals exposed to contaminated water sources.

---

121 A newly joined teacher develops rice water stools. The causative agent acts on which of the following receptors?

(1) GM 1 ganglioside receptor

(2) GM 2 ganglioside receptor

(3) Sphingomyelin

(4) Cerebroganglioside

Correct Answer: (1) GM 1 ganglioside receptor

Solution:

The causative agent of cholera, Vibrio cholerae, acts on the GM 1 ganglioside receptor in the intestine. This interaction leads to the characteristic rice water stools.

Quick Tip

Cholera toxin binds to GM 1 ganglioside receptors in the small intestine, leading to severe diarrhea and rice water stools.

122 Which of the following is considered to be the best for the detection of Clostridium difficile?

(1) Aerobic culture of stool

(2) Glutamate dehydrogenase and toxin assay

(3) Glutamate dehydrogenase assay

(4) None of the above

Correct Answer: (2) Glutamate dehydrogenase and toxin assay

Solution:

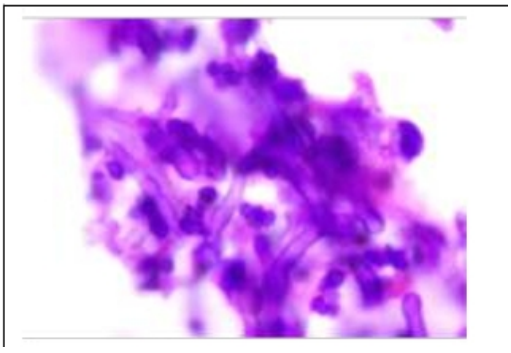
The best method for detecting Clostridium difficile is a combination of glutamate dehydrogenase and toxin assays. The glutamate dehydrogenase assay detects the enzyme produced by C. difficile, and the toxin assay detects the presence of toxins A and B produced by the bacteria.

Quick Tip

For accurate detection of C. difficile, a combination of glutamate dehydrogenase and toxin assays is recommended for higher sensitivity.

---

123 A diabetic truck driver presents to you with cough and breathlessness. A diagnosis of pneumonia was confirmed, and histopathological examination revealed dichotomous branching, as shown below. What is the likely causative agent?



(1) Rhizopus

(2) Mucor

(3) Candida

(4) Aspergillus

Correct Answer: (2) Mucor

Solution:

Mucor species are characterized by broad, non-septate hyphae with dichotomous branching. This is a common finding in mucormycosis, which can cause pneumonia in immunocompromised patients, especially diabetics.

Quick Tip

Mucormycosis is often seen in diabetic patients and presents with typical histopathological features of dichotomous branching of hyphae.

---

124 A woman with recurrent diarrhea is prescribed a broad-spectrum antibiotic. Which of the following is not true regarding Clostridium difficile infection?

(1) Oral fidaxomicin is used for treatment

(2) It is toxin mediated

(3) IgM assay is used to confirm the diagnosis

(4) Pseudomembrane is a layer of inflammatory

Correct Answer: (3) IgM assay is used to confirm the diagnosis

Solution:

Clostridium difficile infection is toxin-mediated, and the diagnosis is typically confirmed by detecting the toxins in stool, not by an IgM assay. Fidaxomicin is the drug of choice for treatment.

Quick Tip

For C. difficile infection, stool toxin assays (not IgM assays) are used for confirmation. Oral fidaxomicin is effective for treatment.

---

125 An 8-day-old newborn was found to have a thyroid-stimulating hormone level of more than 100 mIU/L. Which of the following will be the next best investigation?

(1) Urine iodine excretion

(2) Serum thyroid receptor antibody

(3) Radiotracer uptake with technetium

(4) Perchlorate secretion

Correct Answer: (3) Radiotracer uptake with technetium

Solution:

A high thyroid-stimulating hormone (TSH) level in a newborn is indicative of congenital hypothyroidism. The next best investigation is radiotracer uptake with technetium to assess thyroid function and morphology.

Quick Tip

In congenital hypothyroidism, a technetium scan helps evaluate the structure and function of the thyroid gland.

---

126 A 10-month-old infant was brought with complaints of jerking movement of limbs towards the body. On examination, there is a regression of developmental milestones. Electroencephalogram shows hypsarrhythmia. Which of the following is the drug of choice in this condition?

(1) Phenytoin

(2) Adrenocorticotropic hormone

(3) Levetiracetam

(4) Phenobarbitone

Correct Answer: (2) Adrenocorticotropic hormone

Solution:

This infant most likely has infantile spasms, also known as West syndrome. The drug of choice for this condition is adrenocorticotropic hormone (ACTH), which is effective in controlling seizures and improving developmental outcomes.

Quick Tip

ACTH is the first-line treatment for infantile spasms with hypsarrhythmia on EEG.

---

127 A 2-month-old infant born to an HIV-positive mother presents with recurrent diarrhea. What is the next best step?

(1) Test stool for giardia and give antibiotics

(2) Dried spot sample for HIV DNA PCR

(3) Antibody test for HIV

(4) Aerobic culture

Correct Answer: (2) Dried spot sample for HIV DNA PCR

Solution:

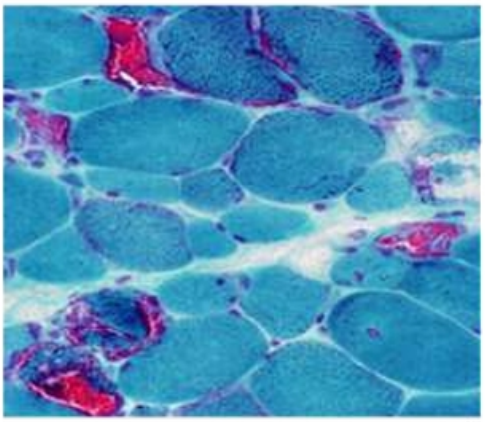
For infants born to HIV-positive mothers, HIV DNA PCR is the most reliable test to confirm HIV infection in the infant. A positive result would require further management and monitoring.

Quick Tip

HIV DNA PCR is the gold standard for diagnosing HIV in infants born to HIV-positive mothers.

---

128 An 8-year-old child has difficulty walking and getting up from a squatting position. A muscle biopsy was done and is as shown in the image. Which of the following is true about this condition?



(1) Death occurs in the 3rd decade

(2) Previous history of viral prodrome

(3) It is a mitochondrial storage disorder

(4) Early treatment has excellent prognosis

Correct Answer: (1) Death occurs in the 3rd decade

Solution:

This image suggests Duchenne muscular dystrophy, which is a type of muscular dystrophy. This condition often presents in early childhood, with difficulty walking and muscle weakness. Typically, death occurs in the 3rd decade due to respiratory and cardiac complications.

Quick Tip

Duchenne muscular dystrophy is characterized by progressive muscle weakness, with early death due to respiratory failure or heart failure.

---

129 A person after sleeping overnight with the arm under his head now experiences paresis but no numbness in the morning. Which of the following is the best explanation for it?

(1) C fibers are more sensitive to pressure than A fibers

(2) A fibers are more sensitive to hypoxia than B fibers

(3) A fibers are more susceptible to pressure changes than C fibers

(4) A fibers are more susceptible to hypoxia than C fibers

Correct Answer: (3) A fibers are more susceptible to pressure changes than C fibers

Solution:

The sensory nerves, particularly the A fibers, are more susceptible to compression or pressure. This leads to symptoms like paresis (weakness) but not numbness, as pressure affects the motor fibers more than sensory fibers in this case.

Quick Tip

Pressure on the nerves, particularly A fibers, can cause motor dysfunction (paresis), but not sensory loss (numbness).

---

130 Which of the following mechanisms is seen in the baroreceptor reflex?

(1) Feedforward

(2) Positive feedback

(3) Negative feedback

(4) Adaptive control regulation

Correct Answer: (3) Negative feedback

Solution:

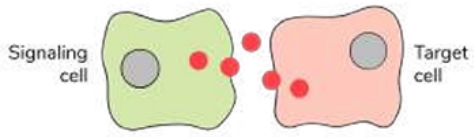
The baroreceptor reflex is a classic example of negative feedback, where an increase in blood pressure leads to a compensatory decrease in heart rate to lower the pressure back to normal levels.

Quick Tip

The baroreceptor reflex operates via negative feedback to maintain stable blood pressure by adjusting heart rate and vessel tone.

---

131 The image below depicts which of the following types of cell-to-cell signaling?



(1) Paracrine

(2) Autocrine

(3) Endocrine

(4) Merocrine

Correct Answer: (1) Paracrine

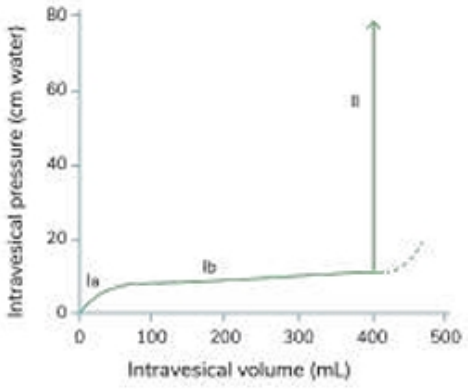
Solution:

The image shows signaling between neighboring cells, which is characteristic of paracrine signaling. This type of signaling occurs over short distances, where the signaling molecules affect nearby target cells.

Quick Tip

Paracrine signaling involves the release of signaling molecules that affect nearby cells, unlike endocrine signaling, which affects distant cells through the bloodstream.

132 Which of the following statements is true regarding the given cystometrogram?



(1) Segment I(a) is due to residual urine

(2) Segment I(b) is due to Laplace law

(3) Micturition fails to happen in segment II

(4) The dotted line represents that micturition has occurred

Correct Answer: (2) Segment I(b) is due to Laplace law

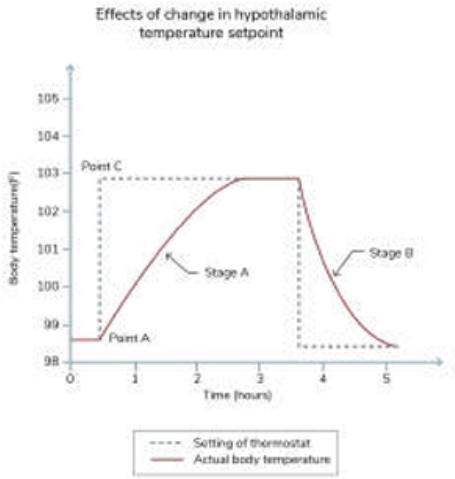
Solution:

The cystometrogram demonstrates pressure changes during bladder filling. Segment I(b) corresponds to the effect of Laplace's law, which describes the relationship between pressure and volume in the bladder.

Quick Tip

Laplace's law is important in understanding the mechanics of bladder pressure during filling. It affects the bladder wall tension and pressure.

133 In a patient, the hypothalamic thermostat was reset from point A to point C as shown below. Which of the following happens in stage A compared to stage B?



(1) Shivering

(2) Sweating

(3) Increased blood flow to skin

(4) Inhibition of chemical thermogenesis

Correct Answer: (3) Increased blood flow to skin

Solution:

In stage A, when the hypothalamic setpoint is raised (point C), the body responds with vasodilation and increased blood flow to the skin to dissipate heat. This is a compensatory mechanism to bring the body temperature back to normal.

Quick Tip

Increased blood flow to the skin is part of the body's response to cooling mechanisms when the hypothalamic thermostat is reset.

---

134 A 65-year-old man suffered from a stroke 2 days ago. He now presents with involuntary, violent, and flinging movements of the limbs on one side. What is the likely site of lesion in this patient?

(1) Subthalamic nuclei

(2) Globus pallidus

(3) Putamen

(4) Caudate nucleus

Correct Answer: (1) Subthalamic nuclei

Solution:

Involuntary, violent, and flinging movements are characteristic of hemiballismus, which is usually caused by a lesion in the subthalamic nuclei. This results in the loss of the inhibitory input to the motor cortex, causing uncontrollable movements.

Quick Tip

Hemiballismus, caused by a lesion in the subthalamic nuclei, presents with violent, flinging movements on one side of the body.

---

135 A 16-year-old girl has intense cravings for food. She eats large amounts of food, which is followed by self-induced vomiting. What is the probable diagnosis?

(1) Anorexia nervosa

(2) Bulimia nervosa

(3) Atypical depression

(4) Binge eating disorder

Correct Answer: (2) Bulimia nervosa

Solution:

Bulimia nervosa is characterized by episodes of binge eating followed by inappropriate compensatory behaviors, such as self-induced vomiting. This pattern is typical of bulimia nervosa rather than anorexia nervosa or other eating disorders.

Quick Tip

Bulimia nervosa involves binge eating followed by compensatory behaviors such as vomiting or excessive exercise.

---

136 A woman, who is 4 days postpartum, presented with tearfulness, mood swings, and occasional insomnia. What is the likely diagnosis?

(1) Postpartum depression

(2) Postpartum blues

(3) Postpartum psychosis

(4) Postpartum anxiety

Correct Answer: (2) Postpartum blues

Solution:

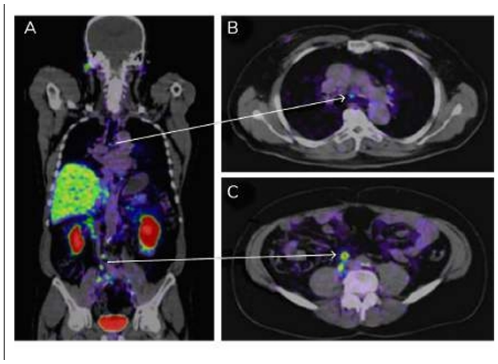
Postpartum blues are common and often present within the first week postpartum, characterized by mood swings, tearfulness, and mild insomnia. It typically resolves within 2 weeks.

Quick Tip

Postpartum blues are common and usually self-limited, resolving within a few days to weeks.

---

137 Identify the image modality given below.



(1) Cerebral blood flow scan

(2) PET CT

(3) Sestamibi scan

(4) Full body MDCT

Correct Answer: (2) PET CT

Solution:

The image provided shows a PET CT scan, which combines positron emission tomography (PET) with computed tomography (CT) to provide functional and anatomical imaging. This modality is commonly used in oncology and cardiology.

Quick Tip

PET CT is used for functional imaging in addition to providing detailed anatomical information.

---

138 A patient is brought to the casualty following a road traffic accident. On examination, the patient is conscious, BP is 90/60 mm Hg, respiratory rate is 40 breaths per minute, and pulse rate is 120 bpm. The X-ray is shown below. What is the next step in management?

(1) Chest tube insertion

(2) Pericardiocentesis

(3) Thoracotomy

(4) Pleurodesis

Correct Answer: (1) Chest tube insertion

Solution:

The patient likely has a traumatic pneumothorax, indicated by the X-ray and clinical presentation of tachypnea and hypotension. Chest tube insertion is the next step to relieve the pressure and allow lung expansion.

Quick Tip

Chest tube insertion is the treatment of choice for traumatic pneumothorax to relieve pressure and re-expand the lung.

139 A child presented with a history of loose stools with an increase in frequency of 4 days. On examination, he is drowsy, unable to feed, and skin on pinching goes back very slowly. According to the integrated management of neonatal and childhood illness (IMNCI), this child will be classified as having

(1) Mild dehydration

(2) Some dehydration

(3) Severe dehydration

(4) Moderate dehydration

Correct Answer: (3) Severe dehydration

Solution:

The child is showing signs of severe dehydration, such as drowsiness, inability to feed, and delayed skin turgor. Severe dehydration requires immediate management to prevent shock and organ failure.

Quick Tip

Severe dehydration is characterized by lethargy, inability to feed, and delayed skin turgor, requiring prompt rehydration.

---

140 A 6-year-old boy came with a history of recurrent urinary tract infections. Imaging was done and is shown below. What is the diagnosis?

(1) Vesicoureteric reflux

(2) Urinary bladder diverticulum

(3) Urinary bladder hernia

(4) Vesicocolic fistula

Correct Answer: (1) Vesicoureteric reflux

Solution:

Vesicoureteric reflux is a condition where urine flows backward from the bladder into the ureters and kidneys, which can cause recurrent urinary tract infections. The image shows the classic radiologic findings of this condition.

Quick Tip

Vesicoureteric reflux is associated with recurrent urinary tract infections and requires early diagnosis to prevent kidney damage.

---

141 A 45-year-old female patient underwent a thyroidectomy. Three days after the surgery, she developed perioral numbness. Which of the following investigations need to be done?

(1) Free T3, T4

(2) T3, T4, thyroid-stimulating hormone

(3) Radioiodine scan

(4) Calcium, phosphate, and parathormone levels

Correct Answer: (4) Calcium, phosphate, and parathormone levels

Solution:

Post-thyroidectomy, perioral numbness may indicate hypocalcemia, which can result from inadvertent removal or damage to the parathyroid glands. Checking calcium, phosphate, and parathormone levels is the best next step.

Quick Tip

Hypocalcemia is a common complication after thyroid surgery due to parathyroid gland injury. Monitoring calcium and parathormone levels is crucial.

142 Which of the following children are considered at risk for being low birth weight babies?

1. Baby with a birth weight of 2.5 kg

2. Baby on artificial feeds

3. Baby of working mother/single parent

4. Baby with weight ¡855. Birth order of 3 or more

(1) 2, 3

(2) 1, 2, 3, 4

(3) 1, 2, 3, 4

(4) 4, 5

Correct Answer: (1) 2, 3

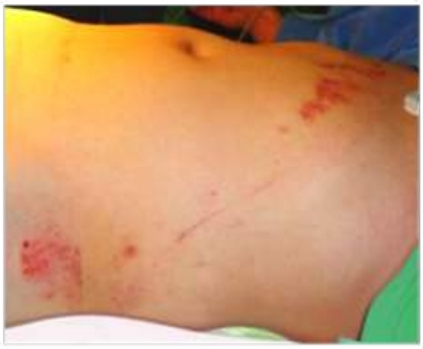
Solution:

Children considered at risk for low birth weight are those who have poor nutritional support (e.g., babies on artificial feeds) or come from socially disadvantaged environments (e.g., babies of working or single parents).

Quick Tip

Low birth weight is a result of inadequate growth during pregnancy, often linked to poor nutrition or maternal health.

143 A patient presented with blunt trauma to the abdomen. On evaluation, liver injury was noted, for which primary repair was done. Coagulation function was monitored intraoperatively, using the method shown below. What is the method used?



(1) Thromboelastography

(2) Plethysmography

(3) Sonography

(4) Elastography

Correct Answer: (1) Thromboelastography

Solution:

Thromboelastography is a technique used to assess the coagulation status of a patient. It is particularly useful in monitoring blood clotting during surgery, such as in trauma cases where liver injury is treated with primary repair.

Quick Tip

Thromboelastography provides real-time assessment of coagulation and is used in trauma surgery for effective management of bleeding.

---

144 Identify the condition:

(1) Bladder exstrophy

(2) Omphalocele

(3) Persistent vitellointestinal duct

(4) Gastrochisis

Correct Answer: (1) Bladder exstrophy

Solution:

Bladder exstrophy is a congenital anomaly where the bladder is located outside the body. The image shows a characteristic presentation of the condition with an exposed bladder.

Quick Tip

Bladder exstrophy requires early surgical intervention to close the bladder and prevent further complications.

---

145 A 59-year-old lady presents with a progressive, painless lump in the breast. What is the cause for the following skin change?

(1) Infiltration of subdermal lymphatics

(2) Infiltration of the lactiferous duct

(3) Involvement of Cooper's ligament

(4) Spread of the tumor to the anterior chest wall

Correct Answer: (1) Infiltration of subdermal lymphatics

Solution:

The peau d'orange appearance, seen in the image, is caused by infiltration of the subdermal lymphatics, a feature seen in breast cancer when the tumor obstructs lymphatic drainage.

Quick Tip

Peau d'orange is a clinical sign often associated with advanced breast cancer, caused by lymphatic obstruction.

---

146 A previously healthy child presented with acute-onset dyspnea. A chest X-ray shows unilateral hyperinflation of the lungs. What is true for this patient?

(1) Focal area of decreased air entry will be suggestive of a foreign body

(2) Flexible bronchoscopy used for removal

(3) In complete obstruction, ball and valve mechanism causes hyperinflation

(4) The child has developed acute laryngotracheobronchitis

Correct Answer: (3) In complete obstruction, ball and valve mechanism causes hyperinflation

Solution:

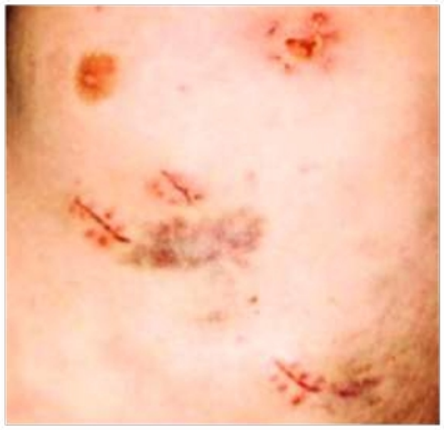
Unilateral hyperinflation in a child with acute onset dyspnea suggests a foreign body aspiration, which causes the ball-and-valve mechanism leading to air trapping in the affected lung.

Quick Tip

Ball and valve mechanism in foreign body aspiration leads to hyperinflation, which can be identified on a chest X-ray.

---

147 A child had a history of stab injury on the anterior abdominal wall, and the image is shown below. The child is hemodynamically stable. Which will be the next course of treatment?



(1) Emergency laparotomy

(2) Observation

(3) Intravenous hydration

(4) Wait and watch

Correct Answer: (1) Emergency laparotomy

Solution:

Given the history of stab injury and the image showing possible peritoneal injury or organ involvement, the next step would be emergency laparotomy to assess for internal injuries, even if the child is stable. Observation is only for minor or superficial wounds.

Quick Tip

Always consider the risk of internal injury in stab wounds, especially in the abdominal region, and err on the side of caution with laparotomy.

---

148 A male child presented with arthralgia and abdominal pain. On examination, there was palpable purpura over the lower limbs. There is a past history of upper respiratory tract infection prior to the onset of presenting symptoms. Which of the following is the treatment for this condition?

(1) Azathioprine

(2) Methotrexate

(3) Cyclosporine

(4) Glucocorticoids

Correct Answer: (4) Glucocorticoids

Solution:

The child is likely suffering from Henoch-Schönlein purpura (HSP), which is associated with purpura, abdominal pain, and arthralgia. The treatment typically involves glucocorticoids to reduce inflammation.

Quick Tip

HSP is a vasculitis that often resolves with glucocorticoid therapy, though supportive care may be required for kidney involvement.

---

149 Which of the following is most likely to be seen due to the rupture of a saccular aneurysm?

(1) Subdural hemorrhage

(2) Subarachnoid hemorrhage

(3) Intracerebral hemorrhage

(4) Hydrocephalus

Correct Answer: (2) Subarachnoid hemorrhage

Solution:

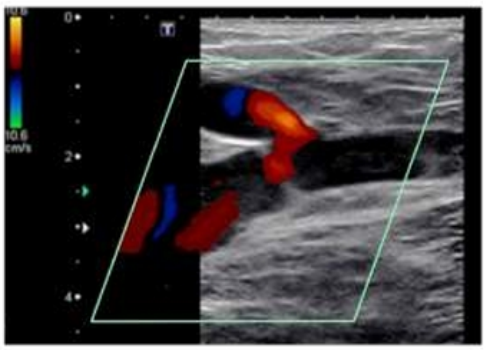
Rupture of a saccular aneurysm most commonly causes subarachnoid hemorrhage, which is seen on CT or MRI scans. This type of hemorrhage occurs when blood from the ruptured aneurysm enters the subarachnoid space.

Quick Tip

Saccular aneurysms, also known as berry aneurysms, are a major cause of subarachnoid hemorrhage, particularly in older adults.

---

150 A patient presents with sudden-onset right leg pain. An investigation was done, and the obtained image is shown below. What is the investigation?



(1) A digital subtraction angiography

(2) Ultrasound doppler

(3) MR angiography

(4) Plethysmography

Correct Answer: (2) Ultrasound doppler

Solution:

Ultrasound doppler is commonly used for the assessment of arterial blood flow, especially in cases of sudden-onset leg pain which could be due to a vascular event like deep vein thrombosis or arterial occlusion.

Quick Tip

Ultrasound doppler is a non-invasive, first-line diagnostic tool for evaluating peripheral vascular conditions.

---

151 A 10-year-old presents with edema and anasarca. A diagnosis of minimal change disease is made. Which of the following is true about this condition?

(1) Light microscopy shows effacement of podocytes

(2) Good response to steroids

(3) Most common in adults

(4) Non-selective proteinuria

Correct Answer: (2) Good response to steroids

Solution:

Minimal change disease is characterized by effacement of podocytes on light microscopy. It is most common in children and has an excellent response to corticosteroids.

Quick Tip

Minimal change disease is the most common cause of nephrotic syndrome in children and responds very well to steroid therapy.

---

152 A male patient presented with a 0.3 cm nodule on the left nasolabial fold. It was excised, and pathological examination was done. What is the diagnosis?

(1) Basal cell carcinoma

(2) Melanoma

(3) Squamous cell carcinoma

(4) Nevus

Correct Answer: (1) Basal cell carcinoma

Solution:

Basal cell carcinoma is a common skin cancer that typically presents as a small, raised nodule, often on the face. It is known for slow growth and a low risk of metastasis. The image suggests basal cell carcinoma due to its characteristic appearance.

Quick Tip

Basal cell carcinoma is the most common skin cancer, commonly appearing on sun-exposed areas such as the face.

---

153 A 10-year-old child presents with diarrhea and weight loss. On examination, the height and weight are lesser than expected. Laboratory investigations were positive for class II HLA-DQ2. Which of the following will you advise the child?

(1) Fat free diet

(2) Lactose free diet

(3) Low carbohydrate diet

(4) Gluten free diet

Correct Answer: (4) Gluten free diet

Solution:

The positive test for HLA-DQ2 and symptoms such as diarrhea and weight loss suggest celiac disease, which is managed with a strict gluten-free diet. This helps reduce inflammation and prevents further damage to the intestine.

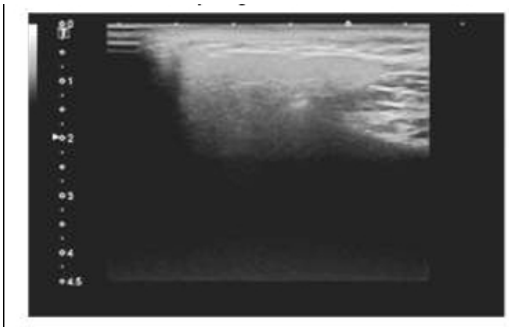
Quick Tip

A gluten-free diet is essential in managing celiac disease and preventing complications.

---

154 A 45-year-old patient complained of pain in one side of the neck. She is afraid of eating food as it worsens the pain. Ultrasound imaging of the salivary glands is done

and shown below. What is the most likely diagnosis?



(1) Sialolithiasis

(2) Foreign body

(3) Osteoma of the floor of the mouth

(4) Cervical lymphadenopathy

Correct Answer: (1) Sialolithiasis

Solution:

Sialolithiasis refers to the formation of stones in the salivary glands, leading to pain, especially when eating, as salivary flow increases. The ultrasound image shows a stone in the gland.

Quick Tip

Sialolithiasis can be managed with massage or surgical removal of the stone.

---

155 A delayed intravenous urogram of a patient is given below. What is the likely diagnosis?

(1) Pelviureteric junction obstruction

(2) Putty kidney

(3) Staghorn calculus

(4) Cystic kidney

Correct Answer: (1) Pelviureteric junction obstruction

Solution:

The image shows delayed filling of the renal pelvis and calyces, which is indicative of pelviureteric junction (PUJ) obstruction. This condition leads to hydronephrosis and requires surgical intervention.

Quick Tip

Pelviureteric junction obstruction is the most common cause of hydronephrosis in children and may require surgical correction.

---

156 A young male patient with a history of a motor vehicle accident cannot pass urine. Blood is seen at the meatus. What is the most likely site of urethral injury?

(1) Bulbar urethra

(2) Spongy urethra

(3) Membranous urethra

(4) Penile urethra

Correct Answer: (3) Membranous urethra

Solution:

The most common site of injury in trauma involving the urethra is the membranous urethra, especially in pelvic fractures. Blood at the meatus often indicates urethral injury.

Quick Tip

In cases of urethral injury, avoid catheter insertion and perform retrograde urethrogram to assess the injury.

---

157 A male patient with chronic obstructive pulmonary disease (COPD) was prescribed theophylline. He noticed that his urine output had increased the following day. This action of the drug is mediated through which of the following receptors?

(1) Interleukin - 10

(2) Histone deacetylase

(3) Adenosine A1

(4) Beta 2 adrenergic receptors

Correct Answer: (3) Adenosine A1

Solution:

Theophylline works by inhibiting the adenosine A1 receptor, which leads to bronchodilation and increased urine output due to its diuretic effect.

Quick Tip

Theophylline can increase urine output by blocking the adenosine A1 receptor, commonly seen in COPD management.

---

158 A male patient presented with midline neck swelling. He later developed cervical node enlargement. The histopathology of the lesion is shown below. Which of the following statements is false about this condition?

(1) Excellent prognosis is associated with this condition

(2) It spreads quickly via lymphatics

(3) Nuclear characteristics are used for the identification

(4) Fine needle aspiration cytology (FNAC) is not diagnostic

Correct Answer: (4) Fine needle aspiration cytology (FNAC) is not diagnostic

Solution:

FNAC can be diagnostic in cases of thyroid cancer and other lesions. The condition described seems to be a thyroid cancer or related condition. Nuclear characteristics are crucial for identification.

Quick Tip

FNAC is usually diagnostic for thyroid cancer; however, some cases may require further diagnostic imaging.

---

159 Which of the following drugs is not likely to cause Pulmonary fibrosis?

(1) Metformin

(2) Methotrexate

(3) Bleomycin

(4) Nitrofurantoin

Correct Answer: (1) Metformin

Solution:

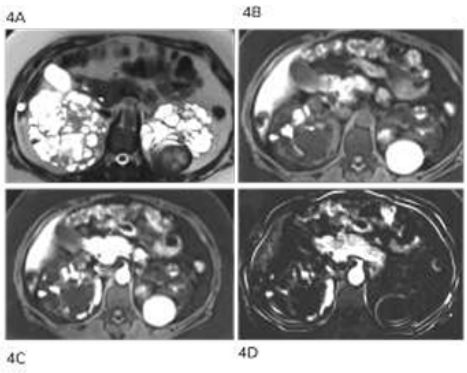
Metformin is not associated with pulmonary fibrosis, while methotrexate, bleomycin, and nitrofurantoin are known to cause pulmonary toxicity.

Quick Tip

Methotrexate, bleomycin, and nitrofurantoin are known to cause pulmonary fibrosis as side effects.

---

160 A 40-year-old man with a known case of hypertension presented with multiple episodes of hematuria and loin pain. His elder brother passed away due to a stroke at the age of 40. The ultrasound abdomen is shown below. What is the probable diagnosis?



(1) Renal cell carcinoma

(2) Autosomal dominant polycystic kidney disease

(3) Tuberculosis of the kidney

(4) Autosomal recessive polycystic kidney disease

Correct Answer: (2) Autosomal dominant polycystic kidney disease

Solution:

The ultrasound findings in combination with the family history of hypertension and early death suggest autosomal dominant polycystic kidney disease (ADPKD), which commonly

presents with hematuria and kidney pain.

Quick Tip

ADPKD is a genetic disorder that presents with multiple cysts in the kidneys. It commonly leads to hypertension and kidney failure in adulthood.

---

161 A patient presents with acute-onset severe abdominal pain. He is hemodynamically stable. A chest X-ray is shown below. What is the next step in management?

(1) Gastric lavage

(2) Chest tube insertion

(3) Tracheostomy

(4) Resuscitation and laparotomy

Correct Answer: (4) Resuscitation and laparotomy

Solution:

The patient's presentation with acute abdominal pain and the chest X-ray indicating free air suggests a perforated viscus. The next step in management is to stabilize the patient (resuscitation) and perform a laparotomy to manage the perforation.

Quick Tip

A perforated abdominal viscus is a surgical emergency. Immediate resuscitation and laparotomy are required for stabilization and management.

162 A patient with deep vein thrombosis was started on a new drug. After 2 days, he presented with the given finding. Which of the following drugs is implicated in causing the above condition?

(1) Warfarin

(2) Heparin

(3) Dabigatran

(4) Rivaroxaban

Correct Answer: (1) Warfarin

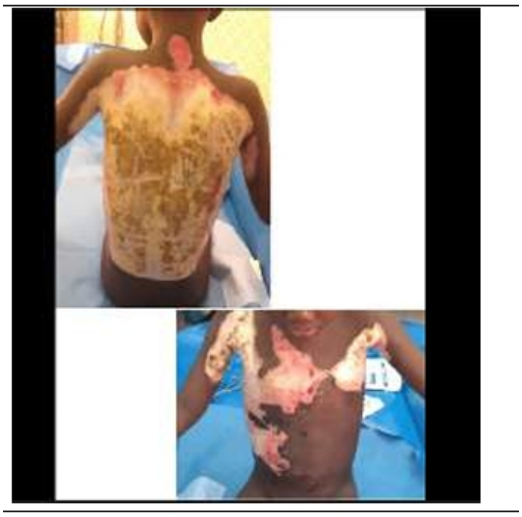
Solution:

The given finding (skin necrosis) is a known side effect of warfarin. This condition is called warfarin-induced skin necrosis and occurs due to the protein C and S deficiency induced by warfarin.

Quick Tip

Warfarin-induced skin necrosis is a rare but serious complication, particularly in the first few days of treatment. If suspected, discontinue warfarin immediately and initiate alternative anticoagulation.

163 Calculate the percentage of burns in a preschool child shown in the image below.



(1) 15-20%

(2) 25-30%

(3) 35-40%

(4) 10-15%

Correct Answer: (2) 25-30%

Solution:

Using the modified rule of nines for children, the body surface area involved is calculated. For preschool children, burns affecting the chest, back, and upper limbs typically represent 25-30% of the total body surface area (TBSA).

Quick Tip

Remember that the rule of nines is adjusted in children. The head and neck account for a larger proportion of TBSA in children compared to adults.

---

164 A patient undergoing chemotherapy was given an antiemetic, after which he developed symptoms like acute dystonia, bradykinesia, and tremors. Which of the following drugs would have caused these symptoms?

(1) Ondansetron

(2) Metoclopramide

(3) Meclizine

(4) Scopolamine

Correct Answer: (2) Metoclopramide

Solution:

Metoclopramide is a dopamine antagonist that can cause extrapyramidal symptoms, such as acute dystonia, bradykinesia, and tremors, especially when given at high doses. This is known as drug-induced parkinsonism.

Quick Tip

Metoclopramide is commonly used for nausea and vomiting but can cause neurological side effects like dystonia and parkinsonism due to its dopamine antagonism.

---

165 A young patient started to take a weight loss medication that acts by inhibiting fat absorption from food. After a few weeks, she developed easy bruising and increased menstrual bleeding. Deficiency of which of the following vitamins is responsible for her condition?

(1) Vitamin E

(2) Vitamin K

(3) Vitamin B6

(4) Vitamin D

Correct Answer: (2) Vitamin K

Solution:

The weight loss medication in question is likely orlistat, which inhibits the absorption of fat-soluble vitamins, including vitamin K. A deficiency in vitamin K can lead to easy bruising and increased menstrual bleeding due to impaired blood clotting.

Quick Tip

Orlistat inhibits fat absorption, which can interfere with the absorption of fat-soluble vitamins, leading to deficiencies such as vitamin K, which is important for blood clotting.

---

166 A 32-year-old patient who is a chronic alcoholic presents with oral ulcers and a burning sensation. A picture of the oral cavity is given below. What is the most likely

diagnosis?

(1) Leukoplakia

(2) Erythroplakia

(3) Submucosal fibrosis

(4) Malakoplakia

Correct Answer: (1) Leukoplakia

Solution:

Leukoplakia is characterized by thickened white patches in the oral cavity. It is commonly associated with chronic irritation from alcohol or tobacco use. The presence of ulcers and a burning sensation is also suggestive of this condition.

Quick Tip

Leukoplakia is considered a precancerous condition and should be monitored for any malignant changes.

---

167 A woman presenting with symptoms of urinary tract infection was prescribed a drug that causes tendon rupture and arthropathy. What is the mechanism of action of the drug?

(1) DNA gyrase inhibition

(2) Ribosomal inhibition

(3) Cell wall synthesis

(4) Inhibition of folic acid synthesis

Correct Answer: (1) DNA gyrase inhibition

Solution:

The drug in question is likely a fluoroquinolone, which inhibits DNA gyrase, an enzyme critical for bacterial DNA replication. This can lead to tendon rupture and arthropathy, especially in older adults.

Quick Tip

Fluoroquinolones are known to cause tendonitis and tendon rupture, particularly in the Achilles tendon.

---

168 A patient presents with a tender pulsatile mass, as shown in the image below. What will be done next for this patient?

(1) Ultrasound doppler

(2) Needle aspiration

(3) CT angiogram with percutaneous management

(4) Intravenous antibiotics for 7 days

Correct Answer: (1) Ultrasound doppler

Solution:

A pulsatile mass, especially in the abdominal or groin area, is suggestive of an aneurysm or vascular abnormality. Ultrasound Doppler is typically the first-line imaging modality to assess the blood flow and vascular involvement in such cases.

Quick Tip

Doppler ultrasound helps to assess blood flow in real-time and is ideal for detecting vascular issues such as aneurysms.

169 A patient was brought to the emergency with a history of consumption of 8 tablets of digoxin. On examination he was unstable and his heart rate was 56 bpm. ECG showed a 3rd-degree heart block. What is the next step in the management of this patient?

(1) Antibody against digoxin

(2) Lidocaine

(3) DC cardioversion

(4) Phenytoin

Correct Answer: (1) Antibody against digoxin

Solution:

The patient has digoxin toxicity, which is confirmed by the 3rd-degree heart block. The next step is the administration of digoxin-specific antibodies (ovine-derived Digoxin immune fab) to reverse the effects of digoxin.

Quick Tip

Digoxin toxicity can cause arrhythmias, including heart blocks. Digoxin-specific antibodies are used to treat severe toxicity.

---

170 An elderly man, who is a known case of diabetic nephropathy, presented to the emergency with palpitations and chest discomfort. ECG showed tall T-waves. Laboratory investigations showed elevated potassium levels. Which of the following drugs will cause the shift of potassium back into the cell?

(1) Epinephrine

(2) Glucagon

(3) Atropine

(4) Lactic acid

Correct Answer: (1) Epinephrine

Solution:

Epinephrine causes a shift of potassium into the cells by stimulating the β_2 adrenergic

receptors, which activates the Na+/K+ ATPase pump. This helps to reduce the elevated potassium levels in the blood.

Quick Tip

Epinephrine administration can be used in hyperkalemia to shift potassium back into cells, especially in life-threatening conditions like cardiac arrhythmias.

---

171 A patient with a pituitary tumor that overproduced growth hormone underwent surgical removal of the tumor. The resection was found to be incomplete. What is the first-line treatment for this patient?

(1) Leuprolide

(2) Goserelin

(3) Nafarelin

(4) Octreotide

Correct Answer: (4) Octreotide

Solution:

Octreotide is a somatostatin analog that inhibits the release of growth hormone. It is the first-line treatment in patients with acromegaly who cannot be treated adequately by surgery alone.

Quick Tip

Octreotide helps control growth hormone secretion in cases of acromegaly, especially when surgery is not completely effective.

---

172 A middle-aged male patient presents with protrusion of the chin, excessive sweating, impaired glucose tolerance, enlargement of hands and feet. Which of the following is a growth hormone receptor antagonist used to treat this condition?

(1) Octreotide

(2) Pegvisomant

(3) Cabergoline

(4) Olcegepant

Correct Answer: (2) Pegvisomant

Solution:

Pegvisomant is a growth hormone receptor antagonist used to treat acromegaly by blocking the action of growth hormone. It helps alleviate symptoms like excessive sweating and enlargement of hands and feet.

Quick Tip

Pegvisomant is used in patients with acromegaly who have not responded to surgery or other treatments. It directly blocks the growth hormone receptor.

---

173 A patient presents with prostate carcinoma, which has now spread to the vertebra. What is the route of spread to the lumbar vertebra?

(1) Prostatic venous plexus

(2) Transcoelomic spread

(3) Inferior vesical vein

(4) Internal iliac vein

Correct Answer: (1) Prostatic venous plexus

Solution:

Prostate cancer commonly spreads to the bones, especially the lumbar vertebrae, via the prostatic venous plexus, which communicates with the vertebral venous system.

Quick Tip

The prostatic venous plexus allows direct spread of cancer to the vertebral column, which is a common site for metastatic prostate cancer.

---

174 A diabetic patient presented with rhinitis and facial swelling. An intranasal biopsy revealed the presence of broad-based aseptate hyphae with branching at a right angle. What will be the drug of choice for this condition?

(1) Fluconazole

(2) Amphotericin B

(3) Ketoconazole

(4) Griseofulvin

Correct Answer: (2) Amphotericin B

Solution:

The presence of broad-based aseptate hyphae with branching at right angles is characteristic of mucormycosis, which is a life-threatening fungal infection. Amphotericin B is the drug of choice for mucormycosis.

Quick Tip

Mucormycosis is an aggressive fungal infection that requires immediate antifungal treatment with Amphotericin B.

---

175. A male patient presents with impotence and bilateral resting pain. The following finding is seen in the legs. At which level has the pathology occurred?

(1) Bilateral popliteal arteries

(2) Bilateral internal iliac arteries

(3) Aortoiliac bifurcation

(4) Bilateral femoral arteries

Correct Answer: (3) Aortoiliac bifurcation

Solution: The image and clinical presentation are indicative of a vascular pathology at the aortoiliac bifurcation level. This is because bilateral resting pain and impotence in the

presence of vascular changes are characteristic of such blockages. The aortoiliac bifurcation is where the major arteries that supply the lower limbs split, and occlusion here can lead to the symptoms presented.

Quick Tip

For patients with lower limb ischemia, identifying the level of occlusion is key in guiding treatment, especially in cases of impotence and resting pain.

---

176. A tuberculosis patient on anti-tubercular treatment presents with a tingling sensation and paresthesia in the lower limbs. He is not diabetic and occasionally consumes alcohol. Which of the following vitamins must be supplemented to this patient?

(1) Vitamin B6

(2) Vitamin B12

(3) Vitamin B2

(4) Vitamin B3

Correct Answer: (1) Vitamin B6

Solution: Patients on anti-tubercular treatment, especially those with alcohol consumption, are at risk for vitamin B6 deficiency. Vitamin B6 is important for nerve function, and deficiency can lead to peripheral neuropathy, which is commonly seen in this patient with tingling sensations and paresthesia. This vitamin is often depleted in patients undergoing long-term anti-tubercular therapy, necessitating supplementation.

Quick Tip

Vitamin B6 supplementation is essential for patients on anti-tubercular treatment, especially if they consume alcohol or have signs of neuropathy.

---

177. An elderly male patient presented with a sudden onset of scrotal pain and discharge. Based on the image below, what is the likely diagnosis?

(1) Torsion of testis

(2) Acute epididymo-orchitis

(3) Scrotal carcinoma

(4) Fournier's gangrene

Correct Answer: (4) Fournier's gangrene

Solution: The image clearly shows signs of necrotizing fasciitis, a hallmark of Fournier's gangrene. This life-threatening condition involves rapid tissue necrosis in the genital and perineal regions, often accompanied by severe pain, swelling, and discharge, as observed in the patient. It requires urgent surgical intervention and broad-spectrum antibiotics.

Quick Tip

Fournier's gangrene presents with sudden, severe pain and swelling in the scrotal region. Early recognition and treatment are crucial for survival.

---

178. An elderly woman received a botox injection for the treatment of wrinkles. Which of the following is the mechanism of action of botulinum toxin?

(1) Inhibits the release of acetylcholine

(2) Releases of noradrenaline at synaptic cleft

(3) Selectively and irreversibly inhibits nicotinic receptors

(4) Stimulates muscarinic and nicotinic receptors

Correct Answer: (1) Inhibits the release of acetylcholine

Solution: Botulinum toxin works by inhibiting the release of acetylcholine at the neuromuscular junction, which prevents muscle contraction. This is why it is used in the treatment of wrinkles, as it paralyzes the muscles temporarily, reducing the appearance of wrinkles.

Quick Tip

Botox works by blocking the acetylcholine release, leading to temporary muscle paralysis, which helps in treating wrinkles.

---

179. Identify the fluid shown below on the basis of composition:

Na+ 131mmol/L

Cl- 111 mmol/L

Lactate 29 mmol/L

K+ 5 mmol/L

Ca2+ 2 mmol/L

Total 279mOsm/L

(1) Haemaccel

(2) Ringer lactate

(3) Isolyte

(4) Isolyte M

Correct Answer: (2) Ringer lactate

Solution: Ringer lactate is a commonly used intravenous fluid that has a composition similar to plasma and includes electrolytes like sodium, chloride, potassium, calcium, and lactate. The fluid described matches the composition of Ringer lactate, which is used to replace fluids and electrolytes in patients.

Quick Tip

Ringer lactate is often used for fluid resuscitation and electrolyte balance during surgeries or trauma.

---

180. Which of the following is a PCSK9 inhibitor?

(1) Evolocumab

(2) Ezetimibe

(3) Bempedoic acid

(4) Clofibrate

Correct Answer: (1) Evolocumab

Solution: Evolocumab is a monoclonal antibody that inhibits PCSK9 (Proprotein Convertase Subtilisin/Kexin Type 9), which leads to increased LDL receptor activity and reduced levels of LDL cholesterol in the blood. It is used to treat hypercholesterolemia.

Quick Tip

PCSK9 inhibitors like evolocumab are used to lower LDL cholesterol and prevent cardiovascular events.

---

181. The image below shows a pressure sore. Which stage does this belong to?

(1) Stage 1

(2) Stage 2

(3) Stage 3

(4) Stage 4

Correct Answer: (4) Stage 4

Solution: Stage 4 pressure sores involve full-thickness tissue loss with exposed bone, tendon, or muscle, as seen in the image. These sores are the most severe and require aggressive treatment, including possible surgical intervention.

Quick Tip

Stage 4 pressure sores are the most severe and require immediate attention to prevent further tissue damage and complications.

182. An elderly man presents with rigidity and tremors. On examination, he has blank facial expressions. Which of the following drugs can be used to manage this condition?

(1) Clozapine

(2) Donepezil

(3) Selegiline

(4) Haloperidol

Correct Answer: (3) Selegiline

Solution: Selegiline is a selective MAO-B inhibitor used in the treatment of Parkinson's disease. It helps to increase the levels of dopamine in the brain, thereby managing symptoms such as rigidity, tremors, and facial expression changes.

Quick Tip

Selegiline is often used to treat symptoms of Parkinson's disease by inhibiting the breakdown of dopamine.

---

183. Identify the most common site of an intraperitoneal abscess.

(1) Suprahepatic

(2) Subhepatic

(3) Left lobe of liver

(4) Left side below diaphragm

Correct Answer: (2) Subhepatic

Solution: The subhepatic space is the most common location for an intraperitoneal abscess. This area is often involved in cases of appendicitis or post-surgical infections, and fluid accumulation in this region can lead to abscess formation.

Quick Tip

Subhepatic abscesses are commonly seen in post-operative patients or those with intra-abdominal infections.

---

184. A man complained of recurrent discharge and pain due to lesions around the anus for 3 years. What is the diagnosis?

(1) Pilonidal sinus

(2) Carbuncle

(3) Boil

(4) Fistula in ano

Correct Answer: (4) Fistula in ano

Solution: Fistula in ano is a chronic infection of the anal gland that results in a recurrent discharge of pus, and the condition often causes pain around the anus. This is a typical presentation seen in individuals with a long-standing history of these symptoms.

Quick Tip

Fistula in ano requires surgical treatment, and recurrent discharge is a common clinical sign.

---

185. According to triage, which of the following categories of patients comes under green?

(1) Ambulatory patients

(2) Medium risk patients

(3) High-risk patients

(4) Dead patients

Correct Answer: (1) Ambulatory patients

Solution: In triage, green category refers to ambulatory patients who can walk and are not in immediate danger. These patients are not critically ill or injured and can wait for further evaluation or treatment.

Quick Tip

Green patients are typically non-urgent and can be treated after more critical cases.

---

186. The average life expectancy for a woman in Japan is 87 years. Due to recent advances in testing for cervical cancer, there is an increase in life expectancy by 15 years. The healthcare utility value is 0.8. Which of the following can be calculated from the parameters given?

(1) HALE

(2) DALY

(3) DFE

(4) QALY

Correct Answer: (4) QALY

Solution: QALY (Quality-Adjusted Life Year) is calculated by multiplying the additional years of life gained by the utility value. Since the life expectancy increased by 15 years with a utility value of 0.8, QALY can be calculated by multiplying 15 years by 0.8.

Quick Tip

QALY takes into account both the quantity and quality of life. It's commonly used to evaluate the value of medical interventions.

---

187. You are working in a primary health center (PHC) situated in a high seismic zone. Which of the following will you do as part of preparedness for an emergency?

(1) Disaster preparedness by making sure all financial and other resources are available

(2) Increase public awareness through campaigns and loudspeakers

(3) Conduct a simulation for the disaster and assess the response

(4) Follow instructions given over the phone or radio by higher officials

Correct Answer: (3) Conduct a simulation for the disaster and assess the response

Solution: A key part of disaster preparedness is to conduct drills and simulations to assess the response of staff and systems. This ensures that the team is well-prepared to handle a real disaster scenario effectively.

Quick Tip

Simulating disaster scenarios helps test readiness and ensures the team can respond quickly and efficiently.

---

188. Although many animals are implicated in the spread of rabies, dogs are the most common ones. Also, it usually affects children in developing countries. Knowing this, what is the most cost-effective and logical way to reduce the incidence of rabies?

(1) Testing all the dogs for rabies

(2) Reduce stray dog population and vaccinate all dogs

(3) Increase the laboratory facilities

(4) Increase capacity of healthcare workers for surveillance

Correct Answer: (2) Reduce stray dog population and vaccinate all dogs

Solution: The most effective and cost-efficient approach to controlling rabies is through mass vaccination and controlling the stray dog population. This prevents the spread of the virus and reduces future risks.

Quick Tip

Vaccination of dogs, combined with controlling the stray dog population, is the most effective way to prevent the spread of rabies.

---

189. Which of the following steps is not included in the STEP approach of WHO?

(1) Therapeutic assessment

(2) Physical assessment

(3) Psychological assessment

(4) Behavioral assessment

Correct Answer: (1) Therapeutic assessment

Solution: The STEP approach of the World Health Organization focuses on assessing the behavioral, psychological, and physical aspects of health. Therapeutic assessment, however, is not part of this approach.

Quick Tip

The STEP approach of WHO is designed for comprehensive health assessment but does not include therapeutic evaluations.

---

190. A male patient diagnosed with tuberculosis took complete treatment. Sputum examination was done after the completion of the intensive and the continuation phases. It was found to be negative. What is the status of the patient?

(1) Cured

(2) Treatment completed

(3) Lost to follow-up

(4) Treatment failed

Correct Answer: (1) Cured

Solution: A negative sputum examination after the completion of the full tuberculosis treatment regimen indicates that the patient is cured. Regular follow-up and sputum testing ensure that the treatment has been effective.

Quick Tip

A negative sputum test after completing the full course of tuberculosis treatment generally indicates a cure.

---

191. A cohort study was conducted with drinkers and non-drinkers of green tea to study its effect on diabetes mellitus. The risk ratio was found to be 0.84. Which of the following statements is correct?

(1) Green tea reduces the risk of diabetes

(2) Green tea increases the risk of diabetes

(3) Data insufficient to establish causal association

(4) None of the above

Correct Answer: (1) Green tea reduces the risk of diabetes

Solution: A risk ratio (RR) of less than 1 (in this case 0.84) indicates a protective effect. Therefore, the cohort study suggests that green tea reduces the risk of developing diabetes.

Quick Tip

A risk ratio below 1 suggests that the exposure (in this case, drinking green tea) reduces the risk of the outcome (diabetes).

---

192. Which statement refers best to the criteria for starting an urban community health center?

(1) Caters to a population of 1-1.5 lakh

(2) Referral center for 2-3 primary health centers

(3) No sub-district and district hospitals present in the area

(4) Should have a 100-bed facility in metro cities

Correct Answer: (4) Should have a 100-bed facility in metro cities

Solution: To start an urban community health center, it is necessary to have a 100-bed facility in metro cities as per the guidelines for establishing a community health center to cater to a larger population and meet healthcare demands.

Quick Tip

A 100-bed facility is required for urban community health centers in metro cities to manage healthcare needs effectively.

---

193. How is a broken vaccine vial disposed of, according to biomedical waste management?

(1) Puncture proof blue bin

(2) Yellow container

(3) Red container

(4) Green container

Correct Answer: (1) Puncture proof blue bin

Solution: In biomedical waste management, broken vaccine vials are disposed of in puncture-proof blue bins to ensure safety and avoid contamination. This is part of the standard practice for handling infectious waste in healthcare settings.

Quick Tip

Puncture-proof blue bins are used to safely dispose of broken vaccine vials and other sharps in healthcare facilities.

---

194. In an urban area in the state of Madhya Pradesh, a primigravida goes for institutional delivery after being motivated by an ASHA worker. What are the benefits they will receive (in terms of money in rupees) under the Janani Suraksha Yojana?

(1) 1000 for mother and 400 for ASHA

(2) 1400 for mother and 600 for ASHA

(3) 600 for mother and 400 for ASHA

(4) 400 for mother and 600 for ASHA

Correct Answer: (1) 1000 for mother and 400 for ASHA

Solution: Under the Janani Suraksha Yojana, the mother is provided with 1000 rupees and 400 rupees for the ASHA worker who helps motivate the mother for institutional delivery. This is part of the scheme to promote safe delivery in rural and urban areas.

Quick Tip

Janani Suraksha Yojana incentivizes both the mother and the ASHA worker for institutional deliveries to improve maternal health.

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195. Which of the following agencies provides seed and manure in applied nutrition programs in schools?

(1) CARE

(2) UNDP

(3) UNICEF

(4) WHO

Correct Answer: (3) UNICEF

Solution: UNICEF is known for its involvement in applied nutrition programs in schools, where it provides seed and manure as part of promoting better nutrition and health among children. UNICEF supports many nutrition initiatives globally.

Quick Tip

UNICEF is a key player in promoting nutrition and health in schools, including providing essential resources like seeds and manure.

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196. Many children from a particular community coming to a hospital were detected to have acute lymphoblastic leukemia (ALL). It was assumed that it is due to the presence of cytotoxic waste in the water of that community. If a case-control study has to be done to find whether the chemical and ALL are associated, what will be taken as the control?

(1) Children from the area exposed, but unaffected with the disease

(2) Children from the area not exposed and affected with the disease

(3) Children coming to your OPD, who do not have the disease

(4) All children with ALL irrespective of exposure status

Correct Answer: (1) Children from the area exposed, but unaffected with the disease

Solution: In a case-control study, the control group is typically made up of individuals who are similar to the case group (e.g., from the same area) but who do not have the disease. In this case, children who were exposed to the suspected environmental factor (cytotoxic waste) but do not have ALL would be used as controls.

Quick Tip

In case-control studies, controls should be selected from the same population as the cases but without the disease under study.

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197. A patient presents with an anesthetic patch in the areas on the face, as shown in the image below. Which of the following nerves is the most commonly involved in this

condition?

(1) Abducens nuclei

(2) Facial nerve

(3) Optic nerve

(4) Trigeminal nerve

Correct Answer: (2) Facial nerve

Solution: The facial nerve is the most commonly involved nerve in conditions affecting the face, such as Bell's palsy or other facial nerve disorders, leading to facial numbness and an anesthetic patch.

Quick Tip

Facial nerve involvement can lead to loss of sensation and facial muscle weakness. The trigeminal nerve can also be affected in cases of facial pain or sensory loss.

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198. An auxiliary nurse midwife has to conduct a vaccination camp in a village. She received 2 open vials, one of which is a pentavalent vaccine and the other is an MR vaccine. What can she do regarding the utilization of these vials?

(1) Use MR vaccine and discard pentavalent vaccine

(2) Use both

(3) Use pentavalent vaccine and discard MR vaccine

(4) Discard both

Correct Answer: (3) Use pentavalent vaccine and discard MR vaccine

Solution: Once a vial is opened, it cannot be used for the next session due to the risk of contamination. Since the pentavalent vaccine can be used within its specific timeframe after opening, the MR vaccine must be discarded as it was not used.

Quick Tip

Once opened, vaccines must be used immediately or discarded if not used, as they can lose potency or become contaminated.

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199. A female patient with a body mass index of 30 kg/m² presents to you with a lesion on the neck, as shown below. Which of the following conditions is most likely to be suffering from?

(1) Hypothyroidism

(2) Metabolic syndrome

(3) Addison's disease

(4) Hyperparathyroidism

Correct Answer: (2) Metabolic syndrome

Solution: The lesion on the neck, along with a body mass index (BMI) of 30 kg/m², is suggestive of metabolic syndrome. This syndrome often includes insulin resistance, central obesity, and is associated with increased risk of cardiovascular diseases.

Quick Tip

Metabolic syndrome often presents with visceral obesity, and this lesion can be associated with conditions such as acanthosis nigricans.

200. A patient with cervical lymphadenopathy and is found to be retropositive. A fungal culture depicts a velvety growth with red diffusible pigment on the underside, as shown below. Which is the most likely causative organism?

(1) Talaromyces marneffei

(2) Blastomyces

(3) Aspergillus

(4) Pneumocystis jirovecii

Correct Answer: (1) Talaromyces marneffei

Solution: Talaromyces marneffei is a dimorphic fungus that causes systemic infections in immunocompromised patients. The characteristic velvety growth and red diffusible pigment on culture are diagnostic features of this organism.

Quick Tip

Talaromyces marneffei infection is commonly seen in HIV-infected individuals and can present with systemic involvement.