

Theme: Head injury

Options

A	Extradural haematoma	G	Subarachnoid haemorrhage
B	Acute subdural haematoma	H	Base of skull fracture
C	Depressed skull fracture	I	Contracoup injury
D	Hydrocephalus	J	Cerebral oedema
E	Sagittal sinus thrombosis	K	No intracerebral injury
F	Non-accidental injury		

For each scenario below indicate the SINGLE most likely diagnosis from the above list of options. Each option may be used once, more than once, or not at all.

75. A 22-year-old man presents with a decreased level of consciousness, having been found outside a nightclub. He has bruising of both eyes and a nosebleed. Skull X-ray reveals no fracture.
76. An 83-year-old woman has been hit by a car. She has been deeply unconscious since the accident. Skull X-rays are negative. CT scan shows an ellipse-shaped haematoma on the surface of the brain with midline shift to the opposite side.
77. A 3-month-old boy has been brought in fitting, with scalp swelling at the occiput. The history is that he rolled off the changing table whilst his nappy was being changed.
78. A 19-year-old rugby player hit his head on the post whilst involved in a tackle. He was unconscious for five minutes but regained full consciousness and sat on the sideline until the end of the game. He was then noted to be drowsy and over the past 30 minutes has become confused and no longer obeys commands.

EMQ Practice Examination

Theme: Child with a painful leg

Options

A	Fractured femur	F	Perthes disease
B	Irritable hip	G	Septic arthritis
C	Non-accidental injury	H	Shin splints
D	Osgood–Schlatter disease	I	Sickle cell disease
E	Osteomyelitis	J	Slipped femoral epiphysis

For each patient described below, choose the SINGLE most likely diagnosis from the above list of options. Each option may be used once, more than once, or not at all.

- 166.** A 5-year-old boy has a painful limp for a few weeks. Examination reveals limited movement at the hip. X-ray of the hip shows sclerosis of the femoral head. The parents deny any trauma.
- 167.** A 13-year-old boy who is overweight develops hip pain after a minor fall. An X-ray of the hip is abnormal.
- 168.** A 12-year-old child who enjoys sports develops a tender tibial tuberosity.
- 169.** A 6-year-old boy develops a limp after an upper respiratory tract infection. X-rays are normal.
- 170.** A 5-month-old girl is brought in to the Emergency Department by her nanny because she has been crying all morning. Her left thigh is swollen. There is no history of trauma.

Theme: Causes of a non-blanching rash

Options

A	Acute leukaemia	E	Henoch–Schönlein purpura
B	Cushing's disease	F	Immune thrombocytopenic purpura
C	Fat embolism syndrome	G	Meningococcal septicaemia
D	Haemolytic-uraemic syndrome	H	Non-accidental injury

For the following descriptions choose the SINGLE most likely diagnosis from the above list of options. Each option may be used once, more than once, or not at all.

- 192.** A child with malaise and a mild fever presents with a purpuric rash on the buttocks and legs. Otherwise he is well.
- 193.** Following a recent upper respiratory tract infection, a previously well child has started to bruise easily. Initial blood tests are normal apart from a very low platelet count.
- 194.** A child presents with four lines of purpura along the outer thigh. He has a normal platelet count.
- 195.** A very sick child with high fever, a purpuric rash on the limbs and a prolonged capillary refill time.
- 196.** A 6-year-old child has developed widespread petechiae and is pale. She has been unwell for a few weeks with recurrent infections.

Theme: Head injury

75. H

This is a fracture through the floor of the anterior cranial fossa, leading to 'panda eyes' (bruising not extending beyond the orbital margin) and cerebrospinal fluid (CSF) rhinorrhoea (mixed with blood). CSF rhinorrhoea may be diagnosed by the use of blotting paper (or hospital linen) which leaves a central blood clot surrounded by a stain of straw-coloured fluid, the CSF. A skull X-ray will often not reveal the fracture. Look for the sign of a fluid level in the sphenoidal sinus on the lateral skull X-ray.

76. B

The ellipse shape is due to bleeding into the subdural space. Subdural haematoma is associated with significant primary brain injury and associated cerebral swelling contributing to the midline shift and failure to regain consciousness after the initial injury. Treatment is urgent surgical removal of the haematoma and aggressive management of the cerebral oedema. Mortality is high (50–60%).

77. F

Three-month-old babies cannot roll over and would not be able to propel themselves off the changing table. Head injury in a child under the age of one year should always raise the suspicion of non-accidental injury.

78. A

You should not waste time getting a skull X-ray but proceed straight to CT scan. His history is of a brief period of loss of consciousness followed by a lucid interval and subsequent deterioration in conscious level. CT scan will show a lens-shaped (biconvex) appearance of the extradural haematoma. With urgent surgical evacuation, mortality is low (1–9%), reflecting the mild primary brain injury.

Theme: Child with a painful leg

166. F

Perthes disease generally presents with limp, with or without pain, between the ages of four and eight years. Avascular necrosis of the femoral head occurs followed by replacement with new bone. The patient can be left with residual femoral head deformity. Other causes of avascular necrosis in children are sickle cell disease and prolonged steroid use. This is unlikely to be sickle cell disease as this would be associated with severe pain and there would have been a history of other crises by the age of five.

167. J

Slipped upper femoral epiphysis can present with pain and a limp of gradual onset, or more acutely after minor trauma. It presents at this age and classically in obese boys with delayed secondary sexual development.

168. D

This is a traction apophysitis at the insertion of the patella tendon into the tibial tubercle. Tenderness over the tubercle and X-ray changes confirm the diagnosis. Treatment involves reducing the strain at this site by stopping sports or by immobilisation.

169. B

In this age group the joint may become inflamed after an upper respiratory tract infection. The exact cause is not known but it causes an irritable hip or transient synovitis. Blood tests and X-rays are normal. Most cases resolve in a few days or weeks. This diagnosis is only made once all investigations are demonstrated to be normal.

170. C

The pathological diagnosis is likely to be fractured femur. However, the clinical diagnosis may be non-accidental injury. Infants are unlikely to break their bones without some external force. Children may be brought in by carers other than the parents. A senior paediatric opinion must be sought immediately while you attend to the child's injury.

Theme: Causes of a non-blanching rash

192. E

Henoch–Schönlein purpura is a hypersensitivity reaction, sometimes preceded by an upper respiratory tract infection. Associated problems include arthralgia, abdominal pain, and microscopic haematuria. Glomerulonephritis can progress to renal failure. The main treatment is analgesics.

193. F

This is an immune disorder characterised by platelet-bound antibody, often with a previous history of infection. Most episodes resolve over a few months but there is a danger of serious bleeding.

194. H

Always consider child abuse if the purpura are in an unusual place or show an unusual distribution.

195. G

Meningococcal purpura implies significant septicaemia. Rapid deterioration is likely. Aggressive management with antibiotics, intravenous fluids, intubation and ventilation is required.

196. A

The history suggests low haemoglobin and platelets as well as poor immunity. In leukaemia all three blood cell types are affected.