

June 2014 • Questions

The FRCS (Tr & Orth) examination has three components: MCQs, Vivas and Clinical Examination. The Vivas are further divided into five sections comprising Basic Science, Adult Pathology, Hands, Children's Orthopaedics and Trauma. The Clinical Examination section is divided into upper- and lower-limb cases. The aim of this section in the Journal is to focus specifically on the trainees preparing for the exam and to cater to all the sections of the exam every month. The vision is to complete the cycle of all relevant exam topics (as per the syllabus) in four years.

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## MCQs – Single Best Answer

- Which of the following accounts for 65%-80% of the dry mass of flexor tendons?
  - Collagen type I
  - Collagen type II
  - Collagen type III
  - Collagen type IV
  - Elastin
- With regards to clinical tests for diagnosing pathology in the hand, please select the correct response for each of the following from the list given below
  - Rigid extension of the distal interphalangeal joint when the patient is asked to extend the middle phalanx against resistance
  - Less interphalangeal flexion when the metacarpo-phalangeal joints are hyperextended as compared to when the metacarpo-phalangeal joints are flexed
  - Metacarpal grind test
    - Inferior Radioulnar subluxation
    - Carpal Translocation
    - Metacarpophalangeal joint subluxation and ulnar drift
    - Boutonniere deformity
    - Swan neck deformity
    - Carpometacarpal arthritis
    - Z deformity of thumb
    - Mallet finger
    - Intrinsic plus hand
    - Intrinsic minus hand
- Sepsis is a serious medical condition caused by an overwhelming immune response to infection. Which one of the following is NOT true about severe sepsis?
  - Presence of one or more organ failure
  - May be associated with osteomyelitis
  - Initial serum lactate of < 2 mmol/L
  - Early diagnosis and appropriate management saves lives
  - Mortality as high as 30%-35%
- You have seen a patient with a wound infection to his knuckle after a human bite. Which organism is most commonly associated with this type of an injury?
  - Eikenella corrodens*
  - Pasturella multocida*
  - Enterococcus* spp
  - Pseudomonas aeruginosa*
  - Acromonas hydrophilia*
- A 25-year-old patient involved in a polytrauma is in the intensive care unit following intramedullary nailing for bilateral femoral fractures and an emergency laparotomy after being involved in a road traffic accident. He has significant bleeding from his wound sites, and develops widespread bruising, gangrene of his digits and multi-organ failure. Which one of the following is the most likely pathogenesis?
  - Widespread release of tissue factor with activation of intrinsic and extrinsic coagulation pathways
  - Significant haemorrhage with inadequate replacement of clotting factors
  - Increased permeability of capillaries due to widespread release of cytokines
  - Patient has a previously undiagnosed haemophilic disorder
  - Excessive use of vasopressors causing digital and end organ ischaemia

## Vivas

### Adult Pathology

A 45-year-old male presents with left shoulder pain following a fall while intoxicated. These are his radiographs and CT obtained in A&E (Figs. 1a to 1c).

- What is the diagnosis and what is the mechanism of injury?
- What does the CT scan show and how is it caused?
- List the potential complications?
- List the operative options for the defect demonstrated in the CT.



Fig. 1a



Fig. 1b



Fig. 1c



Fig. 2a

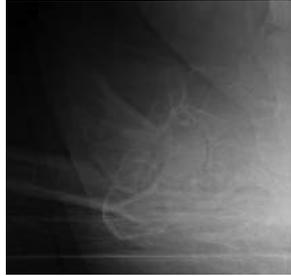


Fig. 2b

### Trauma

A 75-year-old lady presents with an injury to her right hip following a heavy fall after tripping over a kerb. These are her radiographs obtained following the fall (Fig. 2a & 2b).

1. Describe the radiographs
2. What is the association between arthritis of the hip and the type of hip fractures?
3. What is the rationale behind this pattern of injury?
4. How would you manage this patient?
5. What are the potential difficulties that you would envisage during surgery in this case?

### Hands

A seven-year-old girl fell off her horse and sustained a closed postero-lateral dislocation of her left dominant elbow. She underwent a closed reduction under general anaesthesia within six hours of injury. In the review clinic one week later she was noted to have difficulty in bending the tip of her left thumb and index finger. There was no associated numbness in her hand (Figs. 3a to 3c).



Fig. 3a



Fig. 3b

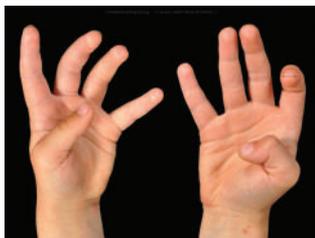


Fig. 3c

1. Describe the clinical photographs?
2. What do you think is the probable diagnosis?
3. What is the aetiology of this condition?
4. How would you further manage this problem?
5. What do you know about the prognosis of this injury?

### Children's Orthopaedics

Have a look at this radiograph (Fig. 4).

1. What condition does this 11 year old have?
2. What are the typical musculoskeletal abnormalities evident on this radiograph?
3. What are the other orthopaedic manifestations of this condition?
4. What are the non-orthopaedic problems associated with this condition?
5. What is the genetic mutation responsible for this condition, and what effect does this have?
6. What is the mode of inheritance of this condition?
7. This child's parents do not have this condition. How is this possible?
8. What are the general principles of limb reconstruction in these patients?



Fig. 4

### Basic Science

1. What stain has been used (Fig. 5) and how is it performed?

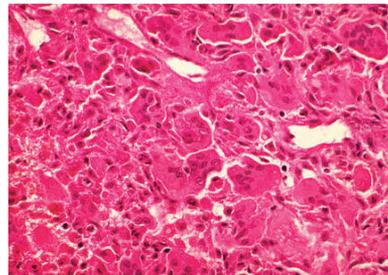


Fig. 5

2. This is a bone biopsy from a lytic epiphyseal lesion. What is the diagnosis?
3. What are the treatments for this type of tumour?
4. What is the nature of the pulmonary lesions that may be associated with this tumour?

For answers to previous Exam Corner questions please visit [www.boneandjoint.org.uk/site/education/exam\\_corner](http://www.boneandjoint.org.uk/site/education/exam_corner)

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