Exam Corner

March 2012 - Questions

The FRCS (Tr & Orth) examination has three components: MCQs, Vivas and Clinical Examination. The Vivas are further divided into four sections comprising Basic Science, Adult Pathology, Hands and 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

1. Which of the following clinical findings is least likely to be associated with a pre-ganglionic brachial plexus injury?
   a. Bruising in the anterior triangle of the neck
   b. Pain in an insensate hand
   c. Loss of sensation above the clavicle
   d. Ipsilateral Horner’s syndrome
   e. The angle between the acetalubar roof and the transverse plane

2. Following a latissimus dorsi transfer for chronic irreparable tears of the rotator cuff, which of the following factors has NOT been associated with a poor clinical outcome?
   a. Male gender
   b. Poor pre-operative shoulder function
   c. Generalised muscle weakness
   d. Absence of electrical activity at follow-up
   e. Previous failed rotator cuff repair

3. The alpha angle on the ultrasound of an infant’s hip is defined as:
   a. The angle between the acetabular roof and the midline of the pelvis
   b. The acute angle between the lateral wall of the ilium and the bony acetabular roof
   c. The angle between the centre of the femoral head and the lateral wall of the ilium
   d. The angle of the thigh required to produce subluxation of the hip on the sonogram
   e. The angle between the acetabular roof and the transverse plane

4. Which of these values reflects the normal tibiofemoral axis for a child aged three years?
   a. Varus of 20°
   b. Varus of 10°
   c. Neutral alignment
   d. Valgus of 10°
   e. Valgus of > 20°

5. Which of the following constituent accounts for 65-80% of the dry mass of flexor tendons?
   a. Collagen type I
   b. Collagen type II
   c. Collagen type III
   d. Collagen type IV
   e. Elastin

Vivas

Adult Pathology

A 28-year-old man presents with pain in his chest and lower back. This is his radiograph (Fig. 1).

1. Describe the abnormality on the radiograph. What is your diagnosis?
2. How can we assess the severity of this condition?

Trauma

A 48-year-old right hand dominant civil servant presented to the fracture clinic following a fall from a horse on his right arm. This is the radiograph obtained in A&E (Fig. 2).

1. Which of the following clinical findings is least likely to be associated with a pre-ganglionic brachial plexus injury?
2. Following a latissimus dorsi transfer for chronic irreparable tears of the rotator cuff, which of the following factors has NOT been associated with a poor clinical outcome?
3. The alpha angle on the ultrasound of an infant’s hip is defined as:
4. Which of these values reflects the normal tibiofemoral axis for a child aged three years?
5. Which of the following constituent accounts for 65-80% of the dry mass of flexor tendons?
1. Describe the abnormality on the radiograph.
2. What is the classification system commonly used for this injury and how would you classify this fracture?
3. What are the ligaments attached to the distal end of clavicle and how do they influence displacement at the fracture site?
4. Which type of fracture has the highest rate of nonunion?
5. How would treat this injury?

**Hands**

A 40-year-old scaffolder presents with persistent pain in his wrist following a fall on his outstretched hand about six months ago. These are the radiographs (Fig. 3).

1. What is your diagnosis?
2. What is the classification system associated with this problem?
3. What stage/grade would you assign to this radiograph?
4. What is the natural history of this condition?
5. What are the options for treatment?
6. How would you treat this patient?

**Children's Orthopaedics**

Here are clinical photographs and a radiograph of a 14-year-old girl who complains of intermittent discomfort and loss of full extension and supination of the right elbow and forearm (Fig. 4).

1. What is the diagnosis of the elbow disorder?
2. What is the underlying condition and how could you confirm this?
3. How would you treat the elbow?

Clinical photograph and radiograph of a five-year-old boy who walks on his left heel (Fig. 5). The foot is painless but the foot deformity is progressive.

4. What are the deformities?

1. What is the likely cause?
2. How would you manage the condition?

**Basic Science**

1. What do you understand by the term osteoporosis?
2. What is the WHO definition for osteoporosis?
3. What are the risk factors for the development of osteoporosis?
4. What is the pathophysiology of osteoporosis?
5. How would you investigate a patient with suspected osteoporosis?
6. What are the changes in peak bone mass with respect to age?
7. How do you classify osteoporosis?