



**ROYAL AUSTRALASIAN COLLEGE OF SURGEONS**

**FELLOWSHIP EXAMINATION**

**NEUROSURGERY**

**SECOND PAPER - 2 HOURS**

**Wednesday, 20 April 2005**

**All Questions must be answered and are of equal value**

**Question 4:**

A 12 year old boy presents with a two month history of morning headache, nausea and more recently vomiting, together with mild ataxia. Examination reveals papilloedema, difficulty in upward gaze, poor pupillary reaction to light and gait ataxia. A CT scan shows hydrocephalus with some calcification in the pineal region and suggestion of an isodense mass but no contrast had been given.

- (i) What is the likely diagnosis and the differential diagnosis?
- (ii) What laboratory and imaging investigations are indicated to confirm the diagnosis?
- (iii) Discuss the surgical anatomy, aetiological and histopathological features and the pathophysiology involved in this patient.
- (iv) What management would you advise? Discuss the risks and expectations of treatment.

**Question 5:**

A 44 year old labourer, previously in good health developed severe lumbar back pain without apparent injury. He had a fever. Examination found marked tenderness over the upper lumbar region and no neurological deficit.

A presumptive diagnosis of spinal abscess was made.

- (i) What investigations would you perform? How would you confirm this diagnosis in this patient? Set out in detail the radiological characteristics of spinal epidural and subdural infections?
- (ii) What factors may predispose to a spinal epidural or subdural abscess?
- (iii) How would you treat this patient? Set out the general indications for surgical and nonsurgical treatment.
- (iv) Describe the pathophysiology of spinal epidural and subdural abscess including the possible mechanisms of spinal cord dysfunction.

**Question 6:**

- (i) Describe the neuroanatomy of bladder control
- (ii) Outline the surgical steps in an operation for hemifacial spasm. List the potential complications and describe the postoperative management.
- (iii) Outline the clinical and endocrinological assessment of a patient with suspected Cushing's disease.
- (iv) Discuss the underlying principles and scientific evidence for a role for hypothermia in the management of head injury and subarachnoid haemorrhage
- (v) Discuss the management options and the various surgical approaches for ulnar nerve entrapment neuropathy at the elbow



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FIRST PAPER - 2 HOURS

Wednesday, 20 April 2005

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**Question 1:**

A 53 year old male develops sudden headache with associated vomiting. On presentation to a Neurosurgical centre several hours later he is noted to be confused with marked meningism. There are no abnormal neurological signs. His blood pressure is 160/90.

CT scan reveals subarachnoid haemorrhage (Fisher Grade 3) with a focal clot in the interhemispheric region anteriorly. There is moderate hydrocephalus. Angiography reveals an 8 mm anterior communicating artery aneurysm with the fundus projecting behind the plane of the distal A2 vessels. The aneurysm fills from the left side and the right A1 is hypoplastic. The fundus to neck ratio is 1.8

- (i) Discuss Clinical Grading of subarachnoid haemorrhage and indicate what clinical grade you consider this patient to be.
- (ii) What is Fisher Grade 3? What are the other Fisher grades?
- (iii) Discuss the risk of recurrent haemorrhage in this patient and indicate ways of minimising this risk.
- (iv) The aneurysm is considered not suitable for coiling. Describe the relevant surgical anatomy and key technical issues in relation to surgery for this aneurysm
- (v) Post-operatively his conscious level improves, only to deteriorate on day 7 in association with incontinence and right leg weakness. CT scan shows no significant abnormality other than artefact in relation to the aneurysm clip. How would you manage this situation?

**Question 2:**

Write brief notes on:

- (i) Chemotherapy for gliomas
- (ii) The indications for and risks of intracranial endoscopy.
- (iii) The aetiology of cervical myelopathy
- (iv) The clinical features and treatment of thoracic outlet syndrome.
- (v) The anatomy and physiology of the blood brain barrier.

**Question 3:**

Neurosurgery MCQ Paper - (30 questions - 30 minutes). Please follow instructions as detailed on accompanying MCQ Papers