

ROYAL AUSTRALASIAN COLLEGE OF SURGEONS

PART 2 EXAMINATION FOR FELLOWSHIP

NEUROSURGERY

FIRST PAPER - 2 HOURS

Monday 6 September, 2004

All Questions must be answered and are of equal value

Question 1:

A 32 year old female who is twenty weeks pregnant presents with a single major tonic clonic seizure. Investigation reveals a 3 cm arterio-venous malformation in the right parietal lobe without evidence of haemorrhage.

- a) Discuss the pathogenesis and the natural history of arteriovenous malformations
- b) Discuss the risks of surgery and radiosurgery as opposed to conservative treatment, including a description of the features that predict:
 - i) risk of bleeding
 - ii) surgical risk
- c) Describe your management of this patient including the timing of any intervention and your advice to the treating obstetrician.

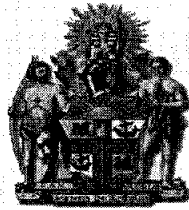
Question 2:

Write short notes on the following topics:

- i) The neurological manifestations of AIDS
- ii) The stereotaxic targets in Parkinson's disease
- iii) Advice regarding driving after craniotomy
- iv) The causes and management of anaesthesia dolorosa
- v) Management of a patient with glioblastoma multiforme, including new and experimental treatments

Question 3:

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



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SECOND PAPER - 2 HOURS

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Question 4:

You are asked to see an unidentified homeless man in his 50s who presented some hours earlier feeling unwell and reporting increasing headache over 4 days. Now he is not responding to verbal commands. Apart from a mild left-sided weakness, there are no neurological findings. BP is 150/90, pulse rate 60/minute and temperature 38.3°C. A CT scan shows a 5cm diameter bilobed lesion in the right frontal lobe with peripheral enhancement, marked oedema and mass effect.

- a. Discuss the differential diagnosis and list any further investigations you would require.
- b. Discuss the pathogenesis of cerebral abscess, the common sources of infection and factors that might predispose to intracranial infection
- c. Briefly classify organisms that may result in cerebral abscess and discuss the factors affecting your choice of antimicrobial therapy.
- d. this patient burr hole aspiration discloses pus. Describe your immediate and longer term management.

Question 5:

A 65 year old man noted increasing stiffness of gait for 12 months. He has been aware of numbness and clumsiness of his hands for some months and now finds difficulty in doing up buttons and handling small change. Examination reveals a spastic gait, absent biceps reflexes, hyperreflexia below that level and extensor plantar responses. An MRI scan shows osteophytic narrowing of the spinal canal at C4/5 and C5/6 with signal change within the spinal cord at C5/6. The spine shows some anterior angulation at C5/6 and the canal appears of adequate dimension at other cervical levels.

- a) discuss the pathophysiology of:
 - (i) disc degeneration
 - (ii) cervical myelopathy
- b) discuss treatment options in general, including the indications, advantages and complications of anterior and posterior operations for cervical myelopathy
- c) what treatment would you recommend for this man? Give your reasons and discuss his prognosis

Question 6:

Write short notes on the following topics:

- i) Classification and management of odontoid fractures
- ii) Unilateral coronal synostosis
- iii) Complications of endoscopic third ventriculostomy
- iv) Outcome prediction in severe head injury
- v) Informed consent