

Candidate No.:



Neurosurgery Fellowship Examination

Paper 1 – Essay Questions (2 hours)

Wednesday 2nd September 2009

All Questions must be answered and are of equal value.

Question 1

A 51 year old female is transferred from a peripheral hospital. She presented there in a confused state after vomiting for several hours and had a CT scan of her head (figure 1a and 1b). On arrival at your institution her conscious level has deteriorated further and she is flexing to painful stimuli. A background history of twelve month's headache is obtained.

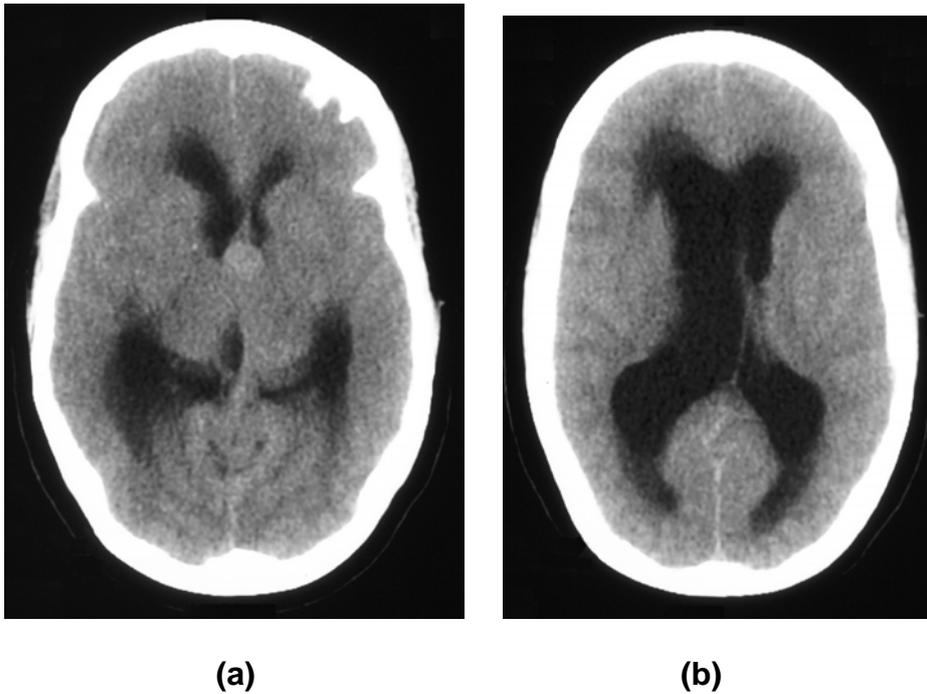


Figure 1a and 1b (Initial Head CT Scan)

Describe your management of this case. Include options for emergency management at night and definitive management. Describe the likely diagnosis and technical aspects of surgical management including potential complications for the patient.

Question 2

Write brief notes on:

- a) Control of cerebral blood flow.
- b) C1/2 instability in adults and its surgical management.
- c) Decompression in middle cerebral artery stroke.
- d) Management of intraventricular haemorrhage.
- e) Non accidental injury in childhood. Investigation and management.

Question 3

Describe the origin, course and distribution of the anterior choroidal artery.

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Paper 2 – Essay Questions (2 hours)

Wednesday 2nd September 2009

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Question 1

A 34 year old male presents late at night following sudden onset of severe headache. On clinical examination he appears to have a left homonymous hemianopia. CT scan (figure 1).

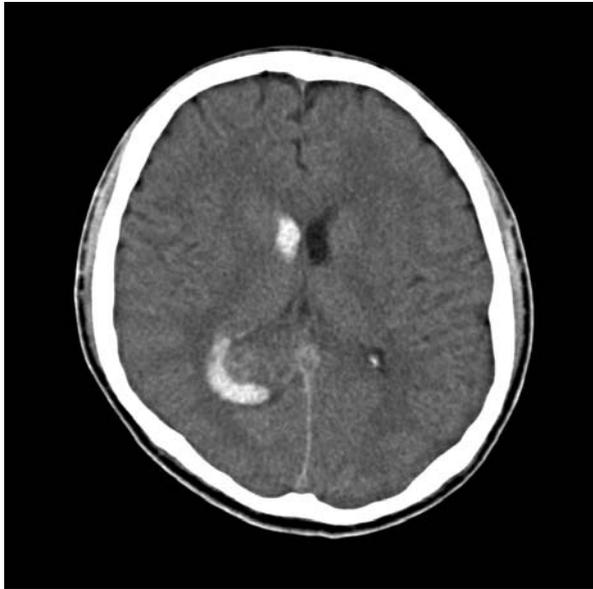
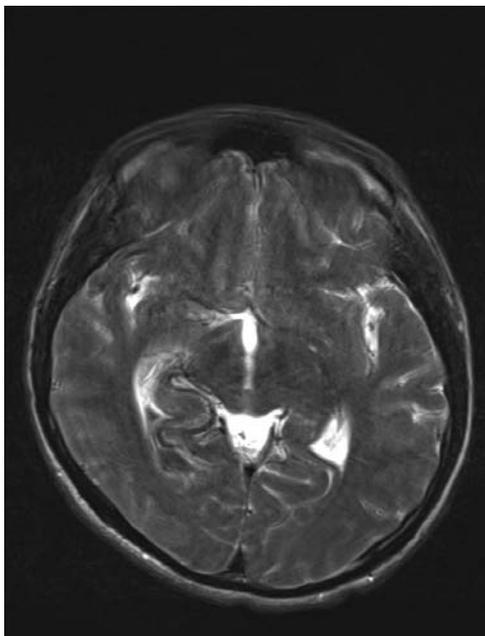
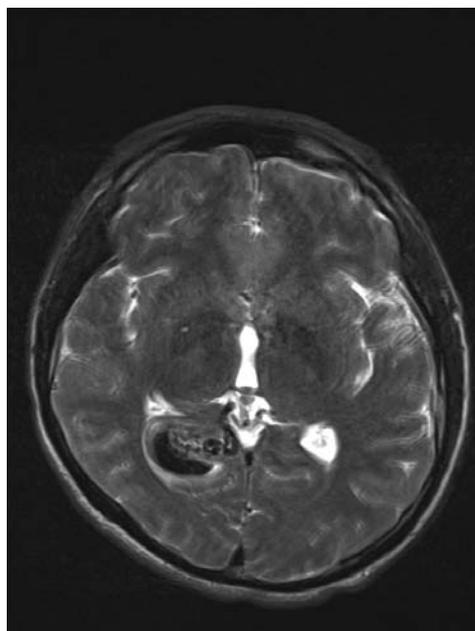


Figure 1 – CT scan on presentation

An MRI scan (figure 2a and 2b) gives more detail of the underlying abnormality.



(2a)



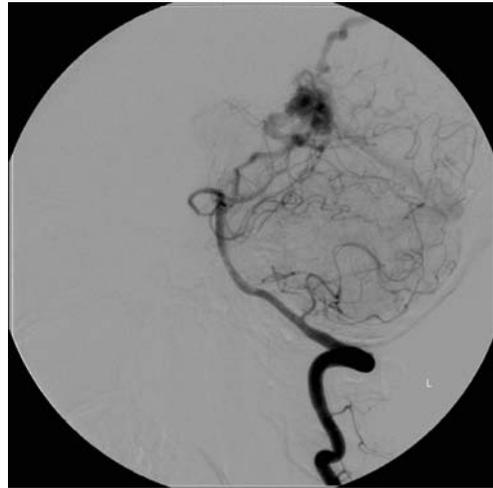
(2b)

Figure 2 – MRI Scan

Cerebral angiography (figure 3a and 3b) reveals a vascular malformation



(3a)



(3b)

Figure 3 – Vertebral angiogram

- a) The nature of the abnormality and the risk of further bleeding. Describe Spetzler-Martin grading. What grade would you assign to this lesion?
- b) Discuss your preferred mode of management of this problem.
- c) Discuss the role of embolisation in the surgical management of such a lesion.
- d) The family ask about radiosurgery. What would you tell them?

Question 2

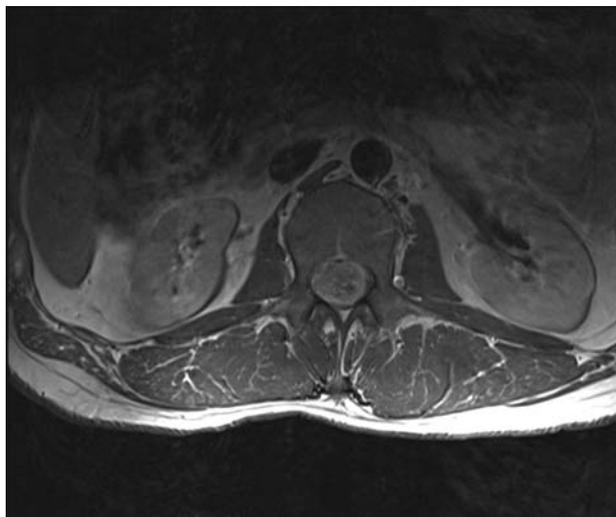
A 30 year old male presents with a fifteen month history of increasing back pain, worse at night. For three months he has noted dribbling incontinence. Urodynamic assessment was said to be normal. Subsequently he required an indwelling catheter. Examination revealed normal gait and power. Ankle reflexes were absent and sensory sensation was disturbed in the perianal area. MRI scan of the lumbar spine is shown in figure 4 a, b and c.



(4a)



(4b)



(4c)

Figure 4 – MRI lumbar spine (a) T1 (b & c) post contrast

Discuss:

- Your diagnosis including differential diagnosis.
- Surgical management including likely outcome.
- Briefly discuss the innervation of the bladder.

Question 3

Write brief notes on:

- a) MRI signal changes in blood over time (T1 and T2 sequences).
- b) Surgical causes of epilepsy in childhood.
- c) Diagnostic criteria for Neurofibromatosis type 2.
- d) Discuss prediction of outcome in traumatic brain injury based on initial CT characteristics.