Neurologist-in-training

The aim of this section is to prepare the neurologist-in-training for the FMH examination, to confront her or him with specific problems of everyday neurological practice and to give him or her updates on recent controversies in clinical neurology.

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Neurological MCQ

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Select the one correct answer.

1 Choose the wrong answer regarding Lyme borreliosis:

A Erythema migrans is normally localised in the armpits, groins and knees, both in adults and in children.
B The primary clinical manifestation of Lyme borreliosis may be a transient (48–72 h) and localised hypersensibility reaction.
C CNS infection may occur within weeks after the tick bite.
D During early neuroborreliosis, CSF analysis shows increased lymphocyte counts, and specific serum antibodies can be detected in 80–90% of the cases.
E In adults with an isolated facial ("Bell's") palsy living in Switzerland, lumbar puncture is usually indicated to exclude Lyme borreliosis.

2 Which answer is correct regarding rabies meningo-encephalitis (RME)?

A Is typically an illness of the cold countries because of the death of the lyssa virus in warm climates.
B No cases of survival after RME have been reported.
C Human to human contamination occurs most commonly during sexual intercourse.
D May occur from transplantation of human tissue.
E Declares itself two or three days after biting.

3 The following is NOT a complication of herpes zoster (shingles)?

A Symmetrical polyneuropathy **B** Stroke **C** Keratopathy
D Acute retinal necrosis **E** Peripheral facial palsy

4 Which of the following does NOT mimic Guillain-Barré syndrome?

A Mercury intoxication **B** Diphteria **C** Tick paralysis
D Amyloidosis **E** Porphyria

5 What is wrong regarding treatment of Guillain-Barré syndrome?

A Plasma exchange (PEx) and intravenous immunoglobulines (IVIG) have similar efficacy.
B IVIG plus PEx is no better than either alone.
C There is randomised evidence that PEx improves prognosis in patients who have not responded to IVIG.
D PEx is the preferred treatment in patients with IgA deficiency.
E Prednisone alone does not hasten recovery.

(For correct answers, see page 339)

References

1 Srinivasan A, Burton EC, Kuehnert MJ, Rupprecht C, Sutker WL, et al., for the Rabies in Transplant Recipients Investigation Team. Transmission of rabies virus from an organ donor to four transplant recipients. N Engl J Med 2005;352:1103–11.

2 Evison J, Aebi C, Francioli P, Péter O, Bassetti S, Gervaix A, et al. Borréliose de Lyme. Rev Méd Suisse 2006;2:919–24.

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4 Hughes RAC, Cornblah DR. Guillain-Barré syndrome. Lancet 2005;366:1653–65.

Neuroradiology/Neuroanatomy

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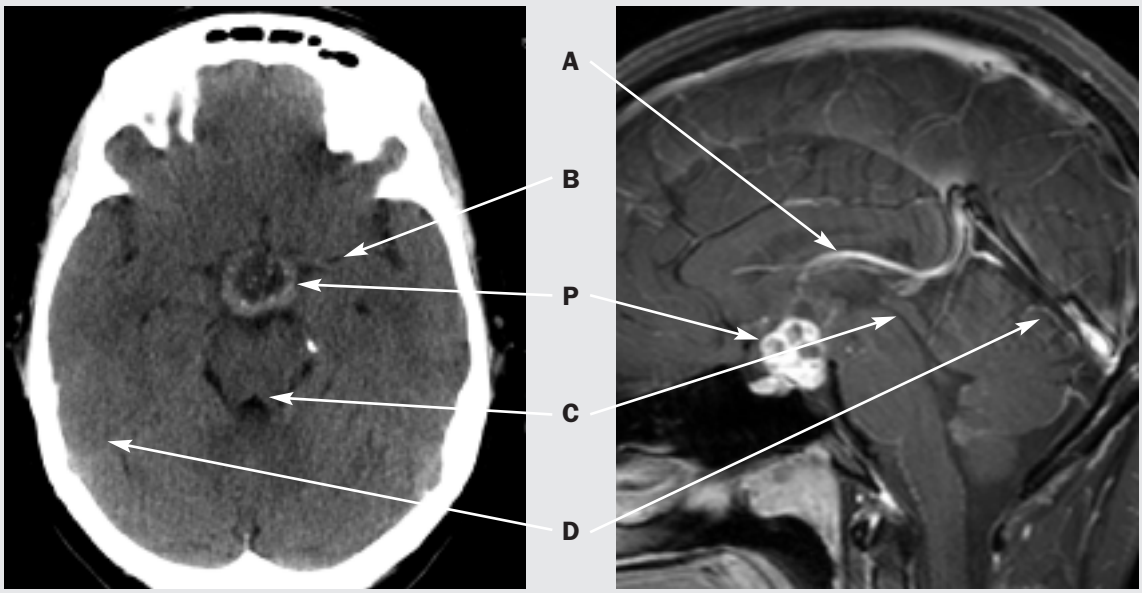

A 41-year-old woman with a history of migraine without aura started to hyperventilate when she discovered her son smoking cigarettes. Within 3 minutes she fell without hurting herself, remained unresponsive for about 10 minutes while breathing normally and with eyes half open. There were no abnormal movements, loss of urine nor tongue bite. After awakening gradually over 2 minutes, she had a left sensory-motor hemisyndrome, which cleared after 30 minutes. Neurological exam one hour later in the emergency room was normal except for amnesia for the event and a mild left sensory hemisyndrome.

Indicate on the non-contrast head CT on the left and the T_1-weighted MRI with Gadolinium contrast on the right the anatomical structures A–D and identify the pathological structure (P).

Images kindly provided by the Department of Diagnostic and Interventional Radiology, CHUV, Lausanne.

(For correct answers, see page 339)

Read for you

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Neuroprotection: good surprises and harsh realities

Some form of neuroprotection is offered to many stroke patients by acutely treating hyperthermia, hyperglycaemia and severe hyper- or hypotension. No drug treatment in acute ischaemic stroke in humans has been shown effective to date, despite more than 50 clinical trials. The first trial to show a neuroprotective benefit was therefore a very good surprise. The drug used was NXY-059, whose neuroprotective properties are mainly due to the trapping of free radicals. By giving the drug within 6 hours of stroke onset, the trial showed a mild but significant reduction in disability grades in treated patients. Similar improvements were obtained both in thrombolysed and non-thrombolysed patients, and the main side effect was hypokalaemia.

The number needed to treat (NNT) to improve a patient by one point in the modified Rankin scale (mRS) was 9.8. The drugs' effectiveness could only be shown by using a more sensitive (prespecified) statistical approach that looked at improvement of disability over the whole range of disability grades ("Rankin shift"), rather than a cut-off at a specific Rankin grade. It is likely that, by using this statistical approach, some previous neuroprotective trials would have shown effectiveness, too. Although the NNT of 9.8 is about three times less than the NNT of 3.3 with intravenous thrombolysis for a one-point shift in the mRS, it can be considered a worthwhile effect for many stroke patients, given the heavy consequences of long-lasting disability.

Another good surprise was that patients who were receiving intravenous thrombolysis had only half the rate of symptomatic intracranial haemorrhages with the new drug. Therefore, some of the benefits of this "neuroprotective" agent seems to come from its "vasculoprotective" effect: the tendency of acutely ischaemic arteries to leak and break up is severalfold increased with thrombolysis, and the biological activity of this new agent seems to reduce this risk by limiting the damage to endothelium and the blood-brain barrier.

The harsh realities this drug will face are multiple, however:

– Patients have to be within a few hours in the hands of stroke-knowledgeable physicians to get a correct diagnosis and a multimodal acute stroke treatment.
– The benefit of this drug will not be very obvious to physicians and patients (as is sometimes the case with thrombolysis or mechanical recanalisation); it is more a statistical benefit rather than one observable in the individual patient.
– Cost-effectiveness has to be shown: although little gains in the chronic handicap may easily translate into long-term saving of care costs, the price of the drug will be important in the decision of physicians and health authorities to use the drug.

If the trial results are confirmed in a second ongoing study, this agent should be used in all patients undergoing thrombolysis, where about half of the haemorrhages can be prevented. For patients arriving late in the stroke centre, who have a very mild stroke or for elderly patients with very severe stroke and unfavourable radiological findings, this drug may not improve their long-term outcome. For all stroke patients all efforts should be made to bring them urgently to specialised stroke centres where their diagnosis can be confirmed and acute recanalisation and neuroprotective treatments can be given rapidly.

References

1 Lees KR, Zivin JA, Ashwood T, Davalos A, Davis SM, Diener HC, et al. NXY-059 for acute ischemic stroke. N Engl J Med 2006;354:588–600.

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