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 In Parkinson's disease which of the following symptoms usually does not **respond to L-DOPA therapy:**

A Tremor **B** Rigidity **C** Akinesia
D Postural instability **E** None of the above

2 For Huntington's disease, the following is true:

A The inheritance is autosomal dominant.
B The administration **of anti-psychotics may be beneficial.**
C Caudate atrophy is often visible on CT.
D With paternal transmission there is an anticipatory phenomenon.
E All the answers are correct.

3 Which of the following substances never induces chorea:

A Anti-psychotics **B** Oral contraception **C** Levodopa
D Lithium **E** None of the above

4 High frequency deep brain stimulation (DBS) in the ventral intermediate nucleus of the thalamus (Vim) may improve tremor in the following conditions, except:

A Parkinson's disease **B** Essential tremor **C** Multiple sclerosis
D Rubral tremor **E** None of the above

5 The pretectal syndrome (of Parinaud) is characterised by the following, except:

A Vertical gaze paresis, with pupillary abnormalities
B Lid retraction
C Convergence nystagmus, nystagmus retractorius
D Forced gaze deviation
E Abducens pseudoparesis

(For correct answers, see page 469)

Neuroradiology: anatomy and pathology

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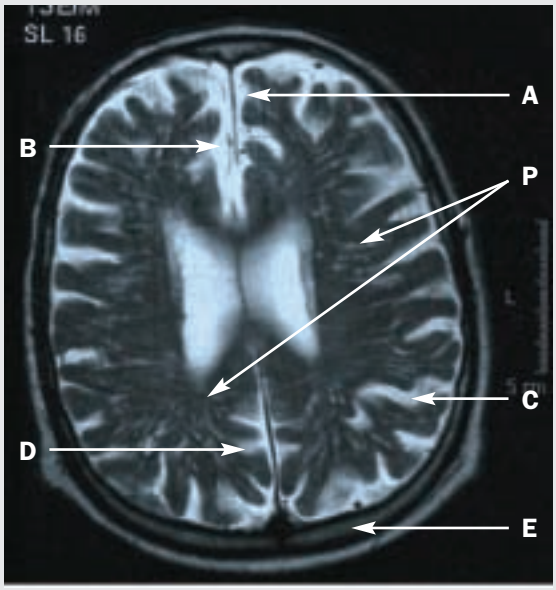

This 78-year-old patient from Neuchâtel underwent brain MRI for mild right cortico-spinal signs.

1 Identify the anatomical structures "A" to "E"

2 What pathology is indicated by "P"?

Figure kindly provided by Dr A. Carruzzo, neurologist, Cadolles Hospital, Neuchâtel, and CHUV, Lausanne.

Read for you

Clinically isolated syndrome, multiple sclerosis, Poser, McDonald and positive predictive value: five fellows playing for clarity

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Multiple sclerosis (MS) has traditionally been defined as an inflammatory disease of CNS with clinical evidence of dissemination in space and time, as proposed by Poser et al. 20 years ago [1]. Eighteen years later, new guidelines were published by McDonald and colleagues, including particularly MRI criteria for dissemination in space and time [2]. These should allow a diagnosis of multiple sclerosis in a patient presenting with a clinical isolated syndrome (CIS), thus earlier than with previous criteria. The implication for the administration of disease-modifying treatments is obvious.

Two recent publications have compared the McDonald criteria with the "gold standard", i.e. the clinical Poser's guidelines, in patients with initial CIS. A British study (still ongoing) investigated the reliability of diagnosing multiple sclerosis by application of MRI criteria including 119 patients in whom dissemination in space consisted of three out of four of the following: (1) at least one enhancing or nine T_2 lesions; (2) at least one infratentorial lesion; (3) at least one juxtacortical lesion; (4) at least three periventricular lesions [3]. The assessment performed after one year and compared with the clinical evolution at 3 years showed excellent sensitivity and specificity (both 83%), whereas the positive predictive value (PPV which is the most important epidemiological ratio since it reflects the percentage of supposed ill people who really develop the disease) was only 75%. That means that 25 out of 100 patients "having" multiple sclerosis according to the MRI criteria at one year do not develop the clinical condition at 3 years (but maybe later?).

In Barcelona 139 patients were analysed with a similar protocol, although MRI criteria were identical with those proposed by McDonald, as the aforementioned points were completed by the alternative presence of oligoclonal bands in the CSF with 2 T_2 lesions [4]. Assessment at one year compared with the Poser's criteria at 3 years had similar results: sensitivity of 74%, specificity of 86% and a PPV (calculated by us) of 80%.

Although inclusion of clinical criteria (additional to MRI criteria) at one year allowed slightly better results (sensitivity 94%, specificity 83%, PPV 77%) [3] and the relatively short follow-up might underestimate the results, the editorial of the last article states that "these results … fail to show that the new criteria are good enough to guide clinical practice" [5]. This seems true, especially looking at the PPV.

May the sixth fellow, quite shy and coming to the play a bit late, called NPV (negative predictive value, i.e. the ratio of supposed healthy subjects which really remain unaffected) and showing better qualities (96% in [3], 80% in [4], the last calculated by us) comfort us?

1 Poser CM, Paty DW, Scheinberg L, McDonald WI, Davis FA, Ebers GC, et al. New diagnostic criteria for multiple sclerosis: guidelines for research protocols. Ann Neurol 1983;13:227–31.

2 McDonald WI, Compston A, Edan G, Goodkin D, Hartung HP, Lublin FD, et al. Recommended diagnostic criteria for multiple sclerosis: guidelines from the international panel on the diagnosis of multiple sclerosis. Ann Neurol 2001;50:121–7.

3 Dalton CM, Brex PA, Miszkiel KA, Hickman SJ, MacManus DG, Plant GT, et al. Application of the new McDonald criteria to patients with clinically isolated syndromes suggestive of multiple sclerosis. Ann Neurol 2002;52:47–53.

4 Tintoré M, Rovira A, Rio J, Nos C, Grive E, Sastre-Garriga J, et al. New diagnostic criteria for multiple sclerosis – application in first demyelinating episode. Neurology 2003;60:27–30.

5 Giovannoni G, Bever CT. Editorial. Neurology 2002;60:6–7.