We are grateful to Professor ES Watkins for allowing us to report this case.

Matters arising

BA SIMPSON
M SWASH

Departments of Neurosurgery
and Neurology,
The London Hospital,
London, E1 1BB, UK.

References

- ¹ Milner B. Disorders of memory after brain lesions in man: material-specific and generalised memory loss. *Neuropsychologia* 1968;6:175-9.
- ² Scoville WB, Milner B. Loss of recent memory after bilateral hippocampal lesions. *J Neurol Neurosurg Psychiatry* 1957;20:11-21.
- ³ Penfield W, Milner B. Memory deficits produced by bilateral lesions in the hippocampal zone. *Arch Neurol Psychiat* 1958;79:475-97.
- ⁴ Victor M, Angevine JB, Mancall EL, Fisher CM. Memory loss with lesions of hippocampal formation. *Arch Neurol* 1961;5:244-63.
- ⁵ Victor M, Adams RD, Collins GH. *The Wernicke-Korsakoff Syndrome*. Davis, Philadelphia 1971.
- ⁶ Russell WR, Nathan PW. Traumatic Amnesia. *Brain* 1946;69:280-300.
- ⁷ Williams M, Zangwill OL. Memory defects after head injury. *J Neurol Neurosurg Psychiatry* 1952;15:54-58.
- ⁸ Fisher CM, Adams RD. Transient global amnesia. *Acta Neurol Scand* 1964;Suppl 91.
- ⁹ Heathfield KWG, Croft PB, Swash M. The syndrome of transient global amnesia. *Brain* 1973;96:729-36.
- ¹⁰ Swash M, Croft PB, Heathfield KWG. The differential diagnosis of transient amnesia. *Br Med J* 1973;4:593-6.

Accepted 25 June 1984

Exteroceptive reflexes abnormalities in stiff-man syndrome

Sir: We read with interest the electrophysiological studies of a case of stiff-man syndrome by Meinck *et al.*¹ The authors analysed the properties of exteroceptive reflexes circuitry by means of stimulation of a limb mixed-nerve trunk. They showed that exteroceptive reflexes are pathologically enhanced in stiff-man syndrome, in so far as they lack habituation, show lowered threshold and simultaneous co-contraction of antagonistic muscles. In a previously reported case of stiff-man syndrome we observed comparable abnormalities of exteroceptive reflexes.² By means of stimulation of both mixed and purely sensory nerve trunks we demonstrated that exteroceptive reflexes lacked habituation phenomena and that they induced co-contraction of antagonistic muscles. Furthermore, exteroceptive reflexes were elicited only by their specific stimuli and only at the specific site of stimulation, without any enlargement of their receptive field. In contrast, we observed that monosynaptic reflex activity behaved substantially normally. Thus Meinck *et al.*'s data confirm our previous findings in showing that isolated abnormally enhanced exteroceptive reflexes activity underlines the major electrophysiological abnormalities in stiff-man syndrome. As regards the involvement of the central nervous system in stiff-man syndrome, we recall that the prevalence of generalised epilepsy in this syndrome is about 10%, that is, much higher than among the general population.² Furthermore abnormal muscular activity in stiff-man syndrome completely disappears during sleep, a behaviour typical of centrally originating motor disorders.³ These findings lend indirect support to the hypothesis that the loss of inhibitory control of exteroceptive activities reflects a more diffuse central derangement. The absence of any pathological correlates in the few cases necropsied, further shows that stiff-man syndrome is a functional rather than a structural disturbance.^{2 4-6}

P MARTINELLI
P MONTAGNA

From Institute of
Neurology of University
of Bologna, Bologna
Italy

References

- ¹ Meinck HM, Ricker K, Conrad B. The stiff-man syndrome: new pathophysiological aspects from exteroceptive reflexes and the response to clomipramine, clonidine, and tizanidine. *J Neurol Neurosurg Psychiatry* 1984;47:280-5.
- ² Martinelli P, Pazzaglia P, Montagna P *et al.* Stiff-man syndrome associated with nocturnal myoclonus and epilepsy. *J Neurol Neurosurg Psychiatry* 1978;41:458-62.
- ³ Montagna P, Cirignotta F, Zucconi M *et al.* Evaluation during sleep of abnormal muscular activity arising in the peripheral nervous system. 4th APSS Symposia Abstracts, Bologna July 18-22, 1983, 78.
- ⁴ Asher R. A woman with stiff-man syndrome. *Br Med J* 1958;1:265-8.
- ⁵ Cohen L. Stiff-man syndrome: two patients treated with diazepam. *JAMA* 1966;199:222-4.
- ⁶ Trethowan WH, Allsop JL, and Turner B. The "stiff-man" syndrome. *Arch Neurol* 1960;3:448-56.

Meinck replies:

The fact that exteroceptive stimuli induce irradiating spasms in the stiff-man syndrome has been described earlier than was suggested by Martinelli and Montagna (no example¹⁻³). The contribution of Martinelli *et al.* to this particular problem consists of three sentences, namely the statement that "polysynaptic flexion and extension reflexes... were normal" whereas "non-nociceptive reflexes... behaved abnormally, lacking habituation phenomena and exhibiting co-contraction..." (p. 459), and the suggestion of "abnormal functions, even if not specific..., of the polysynaptic system" (p. 461).

Besides having difficulties in understanding the exact meaning of their somewhat sibylline statement, I think that we did not confirm Martinelli *et al.*'s (or others') previous results, but substantiated their observations by means of a systematic analysis.

In my opinion, the author's calculation of prevalence rates for generalised epilepsy in the stiff-man syndrome is seriously affected by at least two factors: firstly treatment of the stiff-man syndrome is usually performed with longterm administration of benzodiazepines at high dosages resulting in a high risk for epileptic seizure during withdrawal⁴. Secondly, the term "stiff-man syndrome" most probably comprises a wide variety of disorders which have in common muscular stiffness and spasms, but are poorly understood with regard to their individual aetiology and pathogenesis. The author's hypothesis