Medicine in the Elderly

Epilepsy in the elderly

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Perhaps the most important point to make about epilepsy in the elderly is that it is common. The largest epidemiological study on epilepsy, by Kurland, showed that the incidence of new cases remained constant throughout adult life at about 15 new cases/100,000 per year, until the age of 60 years, when it rose sharply to 50/100,000 per year, and to 75/100,000 at 70 years, making epilepsy more common in the elderly than in any other age group except infancy.¹

Epilepsy in the elderly differs from that in other age groups (except infancy) in that partial seizures are common, accounting for about half of all seizures in the elderly.² The diagnosis of a seizure in an old person is made using the same principles as in younger folk. An eye-witness account is an invaluable aid, and indeed, it is worth going to great lengths to obtain this from relatives or neighbours. Past case records can also be useful sources of information, and are always worth obtaining. Unfortunately in many cases, the old person is alone when the event happens and it may prove impossible to obtain a satisfactory account. In these situations, if the patient has reasonable mental function, inability to remember the circumstances of the incident suggests that loss of consciousness occurred, and investigation is warranted, especially if there has been more than one such event. The question, 'What were you doing at the time?' may reveal whether the patient remembers the incident.

When interpreting the history, certain problems peculiar to the elderly should be borne in mind. Akinetic generalized seizures seem to be common in the elderly, and they are almost invariably not recognised either by the patient or by witnesses as seizures. The patient abruptly loses consciousness and falls limply to the ground, without tonic-clonic movements. Witnesses may describe a change in skin colour and the patient may remain unrousable for some hours. There is often a surprising degree of acceptance on the part of both patient and relatives for these 'funny turns' and the history may not be forthcoming, and it is therefore necessary to seek an

eye-witness description of any 'funny turn' or unusual fall in an elderly person.

Another problem is the frequent occurrence of post-ictal paresis, which can mimic a recurrent hemiparesis, and hence be misdiagnosed as transient ischaemic attacks. This is relatively common and it occurs in about 16% of elderly epileptics.³ One study in Toronto found that about 1 in every 40 stroke patients were actually transient post-ictal hemipareses, so this phenomenon should be continuously borne in mind if inappropriate treatment is not to be instituted.⁴

The patient may present with a hemiparesis, sometimes repeatedly and on the same side, and recover fully within days. An eye-witness account or observation in hospital may reveal that a seizure may occur at the onset of the hemiparesis. Confusion or a pseudo-dementia lasting for 3–4 days after a seizure can also occur in approximately 15% of elderly persons after a seizure.³ In these cases, and in the cases with post-ictal hemiparesis, the presentation of confusion or hemiparesis obscures the fact that they were preceded by a seizure. Paroxysmal pain in a hemiplegic limb especially with myoclonic movements in the same limb, may occasionally be epileptic and respond to anti-convulsants.³

While emphasizing the need to recognize epilepsy in the elderly, it is important also to remain sceptical, and not to use anti-convulsants until the diagnosis has been established. The differential diagnosis for 'funny turns' in the elderly is very considerable, and apart from common confused spells in demented persons, includes conditions like transient arrhythmias, transient ischaemic attacks, or the occasional transient symptoms which can accompany some brain tumours. A therapeutic trial of anti-convulsants, therefore, should never be undertaken without investigation. Nevertheless, if the history suggests a repeated neurological incident, which seems precisely the same each time it occurs, with apparently complete recovery between incidents, epilepsy should be considered, even if at first sight, the events may not appear to be epileptic.

An electroencephalogram (EEG) is a useful investigation, although the finding of Busse & Obrist⁵ of

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spike waves in 12% of EEGs in normal elderly people may raise questions about the specificity of this investigation in the elderly. For practical purposes however, if the history is strongly suggestive, an interictal EEG which shows spike wave activity increases the probability that the incident was epileptic.⁵ Correctable metabolic disturbances should be sought, since much epilepsy in old people occurs in the setting of intercurrent illness.⁷ The largest single cause of epilepsy is cerebrovascular disease, accounting for about one-third of cases of symptomatic epilepsy in the elderly. In the one-third of cases where there is no apparent cause computed tomographic (CT) scanning reveals ischaemic lesions in a high proportion.⁸

Tumours are present in only about 10% of elderly epileptics,⁶ and usually also cause slowly developing localizing signs, or rapidly developing intellectual impairment. There is not a strong case to be made, therefore, for routinely investigating elderly epileptics for cerebral tumour, unless there is a history of recent rapidly developing mental impairment, or progressive neurological deficits, in patients who are fit to withstand craniotomy. It is probably more important to concentrate on adequate treatment rather than on investigations which may not be helpful.

In contrast to usual practice in younger patients, there may be a case for starting treatment in elderly patients after the first confirmed seizure. The rate of recurrence of seizures after a single isolated seizure in elderly persons is not known. The overall rate of recurrence has been variably reported as being between 30% and 60%.⁹ In the elderly, where most epilepsy is symptomatic, the rate of recurrence of seizures after a first seizure may be expected to be high. Many elderly people have a lot to lose by having a

further seizure, largely because of the longer time required to recover fully. On the other hand, many of the problems which follow being labelled epileptic, such as its effect on employment, do not apply in the elderly. Treatment with an anti-convulsant after the first confirmed seizure may make more sense in the elderly than it does in younger people.

Phenytoin probably remains the drug of first choice for treating epilepsy in the aged. The pharmacokinetics of phenytoin has been studied in the aged,¹⁰ and it seems clear that the maximum rate of metabolism of phenytoin declines with age, and is about 20% lower in the age group 60–79, when compared with the age group 20–39 years. A single dose is sufficient to maintain serum concentration at a steady state, an important point for ensuring compliance in the elderly. It is also effective in controlling both generalized and partial seizures. In practice, a starting dose of 200 mg as a single dose at night will very rarely produce toxic levels, and subsequent alteration of dosage can be made on the basis of drug levels.

Carbamazepine and sodium valproate are useful drugs if phenytoin is unsuccessful. Both of them are also effective in generalized and partial seizures, although possibly not quite as effective as phenytoin.¹¹ Control should be achieved with one drug only, and serum levels monitored. If control is not achieved despite therapeutic serum levels, the drug should be gradually withdrawn and a second drug substituted.

With elderly persons in particular, the need to take the drug indefinitely needs to be continually emphasized. A balance must be sought, however, between achieving full control with side effects which the patient dislikes, and running a slight risk of seizures without drug side effects.

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