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Short report

Multiple sclerosis following optic neuritis in Chile

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SUMMARY Twenty three unselected cases of optic neuritis were re-examined between 2 and 18 years after the onset of the disease, with a mean of 9·7 years. Only 8/23 (35%) had unilateral non-recurrent disease. One patient only (4·3%) went on to develop multiple sclerosis. These findings support the impression that demyelinating disease varies considerably in Latin America compared with northern industrialised countries.

The prevalence of multiple sclerosis in South America is unknown. Its geoclimatic and ethnic heterogeneity makes generalisations hazardous but in the northern hemisphere Mexico, whose cultural similarities to South American societies are obvious, has been reported to have a prevalence of about 1·6 per 100,000 population in the Federal District.[1] This is a very low figure and the impression exists that multiple sclerosis is very much less abundant in Latin America than it is in Europe, the United States, or in Canada. Even less is known about the risk of progression of optic neuritis to multiple sclerosis in Latin America in general.

In industrialised countries the percentage of optic neuritis going on to develop multiple sclerosis is generally acknowledged to vary between 13%[2] and 75% (after 15 years follow-up),[3] and indeed there is controversy as to whether optic neuritis is a forme frustre of multiple sclerosis[4] or an entity quite separate from the latter.[5]

In the present study an unselected sample of 23 cases of optic neuritis with a mean follow-up time of 9·7 years is presented. Optic neuritis was defined as the acute or sub-acute onset of blurred vision in one or both eyes associated with a central, centrocaecal, or paracentral scotoma, and with no demonstrable local cause such as ischaemia, tumour, or retinal lesion.[6] It will be shown that only one case went on to develop multiple sclerosis, which amounts to 4·3% of the sample.

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Methods and results

The names were retrieved of all patients with the initial diagnosis of optic neuritis seen in the Department of Neuro-Ophthalmology of the Institute of Neurosurgery in Santiago between 1968 and 1985. Out of 105 patients, 58 were excluded because the hospital notes were lost, or there was no identifiable address, or the final diagnosis turned out not to be optic neuritis, or because they already had multiple sclerosis when seen. The remaining 47, not all of whom gave addresses in Santiago, were systematically sought for in their homes, either by ourselves or in the provinces by neurologists known to us. Twenty four could not be found because they were not known at the addresses which they had given; most had moved, married, etc. This left 23 patients, all of whom were seen and examined by us, and who are the subjects of this study.

They were said to have bilateral optic neuritis when both eyes were involved simultaneously or within two weeks of each other and recurrent optic neuritis when one or the other eye was involved at intervals greater than 2 weeks from the first attack. The table gives the characteristics of these patients.

Seventeen patients were female and six were male, and eight subjects were 7 years old or less whilst 15 were 17 years old or more. The hospital notes of three patients do not contain information as to the duration of the onset of symptoms nor could they remember clearly when interviewed events that had taken place over 10 years ago. Another three cases stated that onset lasted less than 1 hour; this applies to patients 3, 13, and 18 and this latter patient remembered only about one eye. Patients 7 and 10 stated that when they woke up in the morning the defect was already there. Loss of vision in bilateral cases was recorded or remembered as having taken place at the same time excepting patient 15, in whom there was an interval of 3 days between onset in one eye and another. Patients 13 and 18 had both eyes affected at intervals

Table *Characteristics of 23 patients with optic neuritis*

	Sex	Age at onset (yr)	O.N.	Duration of onset	Fundus when first seen	Visual fields when first seen	Years of follow-up	Present status
1	F	3	†	hours	bilateral oedema, haemorrhage 1 eye	blind	12	R eye − 1·0 L eye − 0·9
2	F	4	*	hours	oedema and haemorrhages	blind	10	normal
3	F	5	†	hours	bilateral oedema	blind	11	normal
4	F	6	†	3 days	bilateral oedema, small haemorrhages	central scotomata	10	normal
5	F	6	†	hours	bilateral oedema, haemorrhages	blind	12	normal
6	F	7	†	?	oedema, exudate 1 eye	1 eye blind 1 eye central scotoma	13	normal
7	F	7	†	? hours	bilateral oedema	central scotomata	14	normal
8	M	7	*	?	optic atrophy	blind	16	counts fingers at 50 cm
9	M	17	*	hours	oedema and haemorrhages	central scotoma	2	normal
10	F	17	†	? hours	1 haemorrhage in 1 eye	near blindness large scotomata	8	died with multiple sclerosis
11	M	18	†	hours	bilateral optic atrophy	large scotomata	14	R eye − 0·4 L eye − 0·9
12	M	23	*	hours	normal	central scotoma	3	normal
13	F	23	†	hours (recurrent)	normal	blind	6	R eye − 1–0 L eye − 0·1
14	M	30	†	4 weeks	bilateral optic atrophy	central scotomata	18	R eye − 0·1 L eye − 0·1
15	F	32	†	hours	bilateral oedema, 1 haemorrhage	central scotomata	10	normal
16	F	32	*	?	normal	central scotoma	14	counts fingers at 50 cm
17	F	33	*	8 weeks	optic atrophy	central scotoma	16	counts fingers at 50 cm
18	F	35	†	hours (recurrent)	2 haemorrhages in 1 eye	central scotomata	14	R eye − 0·9 L eye − 0·9
19	F	37	*	hours	oedema and haemorrhages	central scotoma	5	normal
20	F	39	†	1 week	oedema, macular star, and haemorrhages, 1 eye	central scotomata	5	R eye − 1·0 L eye − 0·1
21	M	39	†	hours	normal	1 eye blind 1 eye central scotoma	3	R eye − 0·2 L eye − 1·0
22	F	47	†	few days (recurrent)	bilateral oedema 1 haemorrhage	central scotomata	3	R eye − 0·9 L eye − 0·4
23	F	57	*	1 week	normal	central scotoma	5	normal

O.N. = *unilateral
†bilateral

of 1 month and 2 months respectively, and are therefore called recurrent optic neuritis.

The diagnosis was retrospectively made when first seen in patients 8, 11, 14, and 17; the illness had occurred 2 months (case 17) and 3 years (case 14) before; in patients 8 and 11 it could not be ascertained when it had occurred. Thus patient 11 could not be defined as having had bilateral or recurrent optic neuritis. Of the remaining 22, eight had unilateral optic neuritis (36%), in 12 it was bilateral (54%), and recurrent in three (13%). Patient 22 had reappearance of bilateral oedema 1 month after onset and after the initial oedema had subsided and can be said to be bilaterally recurrent.

It will be noted that only 11 cases returned to total normality.

Only patient 10 developed multiple sclerosis; she died of septicaemia a few years later but the hospital notes clearly describe the onset and progression of the disease. The remaining 22 patients were otherwise asymptomatic and the rest of the neurological examination was normal when examined in 1987.

Discussion

This small series does not take into account cases of optic neuritis which may have occurred in the community and which did not come to medical attention, nor the ones lost to follow-up. It is suggestive that one case (patient 14) was first examined 3 years after the onset of the disease. There was otherwise no bias in the selection of patients.

Only one of 23 cases went on to develop multiple sclerosis. This is a very low figure indeed (4·3%) and reinforces the suspicion that the pattern of demyelinating disease is quite different in Latin America from that in northern industrialised countries. It is true that eight patients of our 23 were children aged 7 or less and of these six had bilateral disease; the risk of developing multiple sclerosis is believed to be low in this group.[7,8] Even if these eight children are deducted the fact remains that only one in 15 adults developed multiple sclerosis after a mean follow-up of 8 years. In at least one European study 40% of 146 patients had developed multiple sclerosis after 4 years follow-up.[9]

It is also to be noted that unilateral cases were a minority amongst both children and adults. In the latter at least, bilateral disease is less common[6,7,10] in the United Kingdom, but its increased frequency in our series is perhaps more related to availability of hospital services in Chile and to cultural factors. Patients with unilateral visual failure are not

incapacitated and may not strive to seek medical advice if this is not immediately available. It is also possible that unilateral visual failure is not even noticed, much less if it recovers. It is remarked again that patient 14 was examined 3 years after onset for the first time and his case may be representative. Bilateral visual failure is more alarming and these patients are more likely to press for medical attention. The fact that completely normal visual acuity was restored in less than half of our patients is also more likely to be due to a cultural bias that operates in selecting the patients that come to hospital rather than a trait specific to demyelinating disease in Latin America.

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