

Neurosyphilis in the Leicester area

SHAKIR ALANI*
M.R.C.P. (U.K.)

PAUL MILLAC
M.D., F.R.C.P.

Department of Neurology, Leicester Royal Infirmary, Leicester LE1 5WW

Summary

Twenty patients with neurosyphilis are reviewed. They were gathered over a 15-year period during which the overall incidence was 0.18 per 100,000, though fewer cases appeared in the latter half of the study. The commonest presentation was with mental symptoms and classical forms of neurosyphilis were rarely seen. No patient presented with epilepsy. There is a case for the more selective use of serological testing.

Introduction

During the course of this century neurosyphilis, once common, has become a rarity (Martin, 1971). When encountered today, it conforms less frequently with the traditional pattern seen previously (Catterall, 1977; Joffe, Black and Floyd, 1968). The low return of serological testing has led to suggestions that this should be applied more selectively (Nordenbo and Sorensen, 1981), but diagnostic difficulties make the choice of clinical context problematical. We have reviewed our experience of neurosyphilis in the Leicester area to estimate its incidence in a provincial centre, to discern the modes of presentation and in an attempt to delineate clinical situations where serological testing would be more cost effective.

Method

In this area patients in whom syphilis is diagnosed are referred to the Department of Genito-Urinary Medicine at the Leicester Royal Infirmary for contact tracing. From these records, case notes for all patients with neurological abnormalities and positive antitreponemal antibodies in the blood during the period 1964 to 1979 were retrieved.

Results

Twenty-four patients with presumed neurosyphilis

were evaluated. Four of them were excluded. One patient had an epileptic fit and left sided hemiplegia with positive serological examination for syphilis in his blood but subsequently died and was shown to have a glioma in the right cerebral hemisphere and no evidence of syphilitic involvement of the nervous system. Three other patients with deafness, dyspnoea and retention of urine respectively were considered to have had inadequate serological examination. Details of the remaining 20 patients are presented in Tables 1 and 2. They were all male.

Seven patients (35%) presented with mental symptoms, 6 with dementia and the seventh with a behaviour disorder. Four of them were in mental hospitals (nos. 1, 2, 5 and 7). Reflex changes were documented in 5 patients (nos. 1, 3, 5, 6 and 7) and limb reflexes were pathologically increased in all of them with an extensor plantar response in case no. 6. Four patients had small and irregular pupils (nos. 1, 3, 4 and 5).

Four patients (20%) presented with ophthalmological problems. One patient (no. 11) had visual failure, painless ulcers in the perineum and was found to have bilateral optic atrophy and absent ankle jerks. The remaining 3 had diplopia; no. 8 had small pupils which did not react to light but did react to accommodation, no. 9 had a sixth cranial nerve palsy and no. 10 was deaf. The ankle reflexes were absent in all 3 of them.

Two patients (10%) presented with retention of urine and absent vibration sense in the legs. In addition, one of them (no. 12) had Argyll Robertson pupils and absent deep pain sensation in the Achilles tendon.

One case each of vocal cord paralysis and paraparesis were associated with absent vibration sense and absent ankle jerks. A patient with taboparesis had small irregular pupils, absent ankle jerks and bilateral extensor plantar responses. A man age 44 years presented as a stroke with a left hemiplegia, dysarthria and left Argyll Robertson pupil.

Three cases (15%) were discovered while investi-

*Present address: The National Hospital For Nervous Diseases, Queen Square, London WC1N 3BG.

TABLE 1. Clinical findings in 20 patients with neurosyphilis

No.	Age	Presentation	Ataxia	Pupillary abnormalities	Reflex changes	Absence of deep pain sensation	Absence of vibration and position sensations	Cranial nerve changes
1	44	Dementia	+	+	+	-	-	-
2	59	Dementia	-	-	-	+	+	-
3	61	Dementia	+	+	+	-	-	-
4	67	Dementia	-	+	-	+	+	-
5	27	Dementia	-	+	+	+	+	-
6	57	Dementia	-	-	+	-	-	-
7	33	Antisocial behaviour	-	-	+	+	-	-
8	63	Diplopia	+	+	+	+	+	-
9	43	Diplopia	-	+	+	-	-	6
10	40	Diplopia	+	-	-	-	-	8
11	50	Visual failure	+	-	+	-	-	OA
12	55	Retention of urine	+	+	-	+	+	-
13	67	Retention of urine	+	-	-	-	+	-
14	76	Hoarseness of voice	-	-	+	-	+	VCP
15	71	Paraparesis	+	-	+	+	+	-
16	59	Taboparesis	+	+	+	-	+	-
17	44	Left hemiparesis	-	+	+	-	-	-
18	56	Incidental	-	+	+	-	-	-
19	43	Incidental	-	-	+	-	+	-
20	32	Incidental	-	+	+	-	-	-

+ Present NR No record
 - Absent 6 6th nerve palsy
 VCP Vocal cord palsy
 8 Deafness
 OA Optic atrophy
 N Normal

TABLE 2. Serological findings in blood and cerebrospinal fluid (CSF) in 20 patients with neurosyphilis

No.	Blood			CSF		
	WR	VDRL	TPI/TPHA	WR	Cells	Protein (mg/dl)
1	+	+	+	+	6	40
2	+	+	+	+	100	140
3	+	-	+	+	11	40
4	+	+	+	+	2	20
5	+	+	+	+	40	56
6	+	+	+	NR		
7	+	+	+	NR		
8	+	+	+	NR		
9	+	+	+	+	54	25
10	+	+	+	+	2	120
11	-	-	+	NR		
12	+	+	+	+	30	89
13	+	+	+	+	120	40
14	+	+	+	NR		
15	+	+	+	+	N	N
16	+	+	+	+	8	64
17	+	+	+	+	2	90
18	-	+	-	-	N	N
19	+	+	+	-	4	85
20	-	+	+	NR		

+ Present NR No record
 - Absent N Normal
 WR: Wasserman reaction; VDRL: Venereal Disease Research Laboratories; TPI/TPHA: Treponema pallidum immobilization test/haemagglutination.

gating other unspecified illnesses. All 3 of them had absent ankle jerks; one patient (no. 19) had absent

vibration sense in the legs while the other two (nos. 18 and 20) had Argyll Robertson pupils.

The cerebrospinal fluid was looked at in 14 cases and showed pleocytosis and significantly raised protein (more than 60 mg/l) in 6 of them.

Discussion

The population of the Leicester area is approximately 800,000 giving an incidence over the 15-year period of 0.18 per 100,000, which is in close accord with that found in the Greater Copenhagen region (Nordenbo and Sorensen, 1981). It is worth noting that the majority of cases occurred in the first 5-year period suggesting a considerably lower incidence for the past 10 years.

In common with other studies our series has shown a male preponderance (Luxton, Lees and Greenwood, 1979). The most substantial group of patients presented with mental symptoms; more than half were in-patients in mental hospitals. Of 3 patients presenting with diplopia, only one had a documented relevant cranial nerve palsy. The apparent lack of relevant cranial nerve signs in the other two patients may be due to inadequate records. Over half the patients had pupillary abnormalities of whom 4 patients had typical Argyll Robertson pupils.

Neurosyphilis has clearly become a rare disease and even neurologists may not expect to see more than one case annually which may not be of the

classical type seen in the past (Catterall, 1977; Joffe *et al.*, 1968). Serological testing for neurosyphilis appears most appropriate in patients with dementia and psychiatric disorders, especially in mental hospitals but also in spinal cord diseases and cranial nerve lesions of uncertain aetiology. Although the returns will be low it should be included in the investigation of the younger stroke patient and patients with retention of urine.

Convulsions have been reported as a presenting feature of neurosyphilis (Nordenbo and Sorensen, 1981) but no patient presented with epilepsy in our series. In the absence of other neurological signs or a suggestive clinical context serological tests for syphilis could be abandoned in the routine investigation of fits.

Acknowledgment

We are grateful to Dr T.A.G. Reed, Consultant in Genito-Urinary Medicine at the Leicester Royal Infirmary without whose help and co-operation this study would not have been possible.

References

- CATTERALL, R.D. (1977) Neurosyphilis. *British Journal of Hospital Medicine*, **17**, 585.
- JOFFE, R., BLACK, M.M. & FLOYD, M. (1968) Changing clinical picture of neurosyphilis: Report of unusual cases. *British Medical Journal*, **1**, 211.
- LUXTON, L. LEES, A.J. & GREENWOOD, R.J. (1979) Neurosyphilis today. *Lancet*, **1**, 90.
- MARTIN, J. (1971) British neurology in the last fifty years; some personal experiences. *Proceedings of the Royal Society of Medicine*, **64**, 1058.
- NORENBO, A.M. & SORENSEN, P.S. (1981) The incidence and clinical presentation of neurosyphilis in Greater Copenhagen 1974 through 1978. *Acta neurologica Scandinavica*, **63**, 237.