NEUROSYPHILIS — A CLINICAL SURVEY

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SUMMARY

A report of 25 cases of neurosyphilis seen in University Hospital, Kuala Lumpur since 1970. Classical form of the disease still constitute the majority of the patients with often long delay before diagnosis.

INTRODUCTION

With the advent of penicillin and other antibiotics, the incidence of syphilis in the West has largely declined (Martin, 1972). The classical forms of tabes dorsalis, G.P.I. and meningiovascular syphilis have become rarities (Ed. BMJ). This is replaced by atypical forms and in - between forms of the disease (Hooshmand *et al.*, 1972; Joyce-Clark *et al.*, 1978 and Koffman, 1956). Despite being one of the most prosperous developing countries with easy availability of modern medical facilities, numerous cases of classical neurosyphilis are still being diagnosed for the first time. We feel that it is timely to review the patients with neurosyphilis seen in University Hospital, Kuala Lumpur since 1970.

METHODS

The case records of all the patients admitted to University Hospital, Kuala Lumpur from 1970 till May 1980 with a diagnosis of neurosyphilis were reviewed. Most of the patients were under the care of the medical department while some were warded under the orthopaedic department.

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RESULTS

A total of 25 patients were seen during the eleven years period from 1970 till May 1980. The breakdown of the number of cases seen in each year was one case in 1970, two cases in 1971, one case in 1973, 3 cases in 1974, two cases in 1975, four cases in 1976, two cases in 1977, four cases in 1978, one case in 1979 and five cases in 1980.

The sex breakdown was 23 male and 2 female. The racial composition was made up of 17 Chinese, 6 Malays, 1 Indian and 1 Eurasian. The age ranged from 28 years to 70 years with the average of 56.4 years.

Sixteen patients were from the Selangor-Kuala Lumpur district. The other nine were from the other states (two each were from Perak, Melaka and Pahang, one each was from Johore, Trengganu and Kelantan). The racial origin of the patients from Selangor-Kuala Lumpur region was Chinese: 10 cases, Malay: 4 cases, with Indian and Eurasian each having one case. Seven patients had definite history of exposure, 4 had symptoms of previous syphilitic infection. In the other 14, history of exposure was either denied or not available as the patients were too confused or demented to co-operate.

The duration of symptoms ranged from one week to ten years with the average of 3.4 years. In one patient, the pupillary abnormality was detected incidentally when the patient presented with unrelated symptoms.

The symptoms and signs of the patients seen are as in Tables II and III. Four patients had

TABLE I

INCIDENCE OF VARIOUS TYPES OF NEUROSYPHILIS

	No. of Cases	Percentage
Tabetic	8	32
Paretic	7	28
Taboparetic	5	20
Meningovascular	2	8
Optic atrophy	1	4
Miscellaneous	2	8

concomitant hypertension, two had diabetes mellitus, one each had traumatic ulnar nerve palsy, pulmonary tuberculosis, bladder calculus, bronchial asthma and alcoholism.

The results of the serology test is as shown in Table IV. CSF examinations were done in 22 patients. Microscopic examinations were normal in 14 of these cases. Abnormal increase in lymphocytes were found in the other eight cases ranging from four lymphocytes/c.cm of the C.S.F. to 90 lymphocytes/c.cm of C.S.F. Eighteen cases have normal CSF protein level. The other four had raised level ranging from 60 mg% to 156 mg% of C.S.F. Eleven patients had CSF colloidal gold curve determined. Seven of the cases were normal, three cases showed paretic pattern and one had tabetic pattern.

Most patients were given a course of penicillin with total dose ranging from ten mega units to 25 mega units. Fifteen patients were lost to follow up. The other ten had follow-up ranging from three months to eight years. Among these, five of them showed some clinical improvement. The others remained in status quo. One patient died from hypertensive heart failure a year after diagnosis.

TABLE II

SYMPTOMS OF NEUROSYPHILIS

Symptoms	No. of Cases	%
Walking difficulties	15	60
Mental change	10	40
Lightening pain	8	32
Incontinence	6	24
Acute hemiplegia	2	8
Eye symptoms	2	8
Tremor	2	8
Convulsions	2	8
Asymptomatic	1	4

DISCUSSION

There has been a great decrease in the incidence of neurosyphilis in recent years, probably due to the efficacious treatment of early syphilis by penicillin. However, its exact incidence is unknown, since venereal disease remains vastly unreported. A total of 25 patients were seen in the University Hospital, Kuala Lumpur for the ten years period from 1970 to 1980. This was slightly less than 2.5 new cases per year. There was an apparent increase in the number of new cases diagnosed in the five years period after 1976 (16 cases) compared with the five years period from 1970-1975 (9 cases). This is partially accounted for by the availability of the TPHA test in the University Hospital since 1976, which has facilitated the diagnosis of the disease.

The male predominence of the illness has been a well known feature (Meritt *et al.*, 1973), apparently related to the protective effect of pregnancy. Our 23 male patients accounted for 92% of all cases.

TABLE III
SIGNS OF NEUROSYPHILIS

Signs	No. of Cases	%
Pupillary Abnormalities	12	48
Argyl Robertson pupil	4	16
Non-Argyl Robertson pupil	8	32
Areflexia	11	44
Loss of posterior column sensation	11	44
Mental changes - Dementia	8	32
Grandiose	1	4
Paranoid	1	4
Acute confusional state	1	4
Pyramidal tract sign	5	20
Charcot's joint	5	20
Knee	4	16
Hip	2	8
Others	1	4
Amyotrophy	3	12
Cogwheel rigidity	2	8
Tremor	2	8
Optic atrophy	1	4
Oculomotor palsy	1	4
Cerebellar sign	1	4

The racial breakdown of the patient showed a predominence of Chinese and Malay patients with Indian patient being very uncommon (1 case only). The prevalence of the illness among the Chinese and Malay population is probably about the same. The racial composition was 68% Chinese vs 24% Malay for all the cases; and 62.5% Chinese vs 25% Malay when only Kuala Lumpur-Selangor cases were computed. This is broadly comparable to the racial composition of admission to medical ward in the University Hospital for Chinese and Malay at 46.5% and 23%. The racial composition of the Kuala Lumpur Selangor region was Chinese:Malay:Indian at 46.4%, 34.5% and 18.3% respectively (Chandran, 1975).

The absence of the history of primary syphilis is a recognised feature. Some of our patients also deny having history of exposure. This is partly from the prevailing social attitude. In addition, some patients were just too demented to give any reliable past history. Our patients also tended to show long history of symptoms before the diagnosis was made (average of 3.4 years). Four of the patients had symptoms for ten years. Many gave the history of previous visits to various medical practitioners before diagnosis was finally made.

TABLE IV
RESULTS OF THE SEROLOGY TEST

	No. of positive cases	Total No. tested	% positive
Blood VDRL	18	22	83
TPHA	14	14	100
Kahn	2	3	66
CSF VDRL	7	19	37
Kahn	1	2	50

Hooshmand *et al.*, (1972) in his series of 241 patients of neurosyphilis, noted that patients who were picked up accidentally with unrelated symptoms constitute the largest group of 43.2%. 24.2% had seizure disorder, 11.6% had ophthalmic symptoms, 11.1% had stroke, confusion, 7.9% had dizziness and 2% had personality change. As for the signs,reflex charges occurred in 75.8%, absent ankle reflex in 66.8%, pupillary change in 44.8%,sensory abnormalities in 33.7%, chorioretinitis, retinitis pigmentosa in 12%, organic brain syndrome in 8.7%, Barbinski sign in 5.7%, depression 5.0% and less than 5% had ptosis, optic atrophy, mania or personality change. The author commented that the outstanding feature of the study was the fact that patients did not present with the classical neurosyphilis with tabes dorsalis, GPI or meningiovascular syphilis, but presented itself in a most atypical fashion, with many discovered as an incidental finding on physical examinations.

Joyce-Clark and Molteno (1978), in presenting their 48 patients of neurosyphilis from South Africa, commented that majority of their patients presented with subtle clinical signs with weakly positive or even negative serology.

Our patients, in contrast, often presented as classical forms of the disease. Tabes dorsalis accounted for 32% of the cases; the clinical picture was often classical with sensory ataxia, loss of posterior column sensation, areflexia and charcot's joint (five out of eight cases).

Mental changes was another main presenting symptom with dementia occurring in 32% of all the cases. Both Hooshmand *et al* (1972) and Joyce Clark and Molteno (1978) have noted that pupillary abnormalities was very common among their patients.Pupillary abnormalities occurred in 48% of our patients. Among these only one third have classical Argyl Robertson pupils which were small and irregular, reactive to light but not to accommodation (Catterall, 1977).

Asymptomatic neurosyphilis, as defined by abnormalities of CSF although there was no clinical symptoms nor abnormal signs in detailed physical examination, constituted the largest group of 31% in Meritt's series (1946). None of our patients belong to this group. This may be due to non-awareness of the condition. It is appropriate to reiterate that CSF examination should be done in early and late syphilis. In early cases (1° and 2°), the fluid should be re-examined a year after treatment as a test of cure. It should also be done whenever there is clinical or serological relapse (Catterall, 1977 and Meritt, 1973).

As for the investigation, serum TPHA was the most useful, serum VDRL was positive in 82% of the cases and CSF VDRL was positive in 36.8%.

The inadequate follow-up of our patients is unfortunate. This is particularly so in view of the report of poor long-term prognosis despite penicillin treatment in neurosyphilis (Wilner, 1968). Hooshmand *et al.*, (1972) has noted that many cases did not respond adequately until 20 mega units of penicillin was given. Edmund and Tramont (1976) reported two cases where Treponema pallidum was isolated from CSF after "adequate" courses of benzathine penicillin. Mohr *et al.*, (1976) measured the CSF level of patients who received benzathine penicillin intramuscularly and found that twelve out of thirteen cases have no detectable penicillin in the CSF. Two patients who received intravenous aqueous penicillin G however, achieved more than therapeutic level of CSF penicillin. The author suggested a reassessment of the currently recommended regime and perhaps the adoption of a regimen consisting of large doses of intravenous penicillin for the treatment of neurosyphilis.

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