

Non-Occurrence of Spirochetes in Cerebrospinal Fluid of Patients with Multiple Sclerosis.* (25834)

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Ichelson(1,2) alleges to have cultured a spirochete, *Spirochaeta myelophthora* (Steiner), from the spinal fluid of patients with multiple sclerosis. She attributes etiologic significance to this organism(6). Both denials(3,7) and support(4) of her claims have appeared. Martin and his associates(5), in the most extensive studies done to date, have not only not confirmed Ichelson's claims, but have shown the organism in question to be a contaminating *Vibrio tyrogenus* derived from the bottled distilled water which Ichelson has used in manufacture of her media. Since the question of the etiology of multiple sclerosis is important, presentation of further non-confirmatory data is warranted. The purpose of the present note is to add a series of negative findings. The present study was "blind," in that spinal fluid samples were obtained from the Multiple Sclerosis Clinic, Dept. of Neurology, Hospital of the Univ. of Pennsylvania, Philadelphia, through the courtesy of Dr. Melvin Thorner, who sent them designated by code numbers, without name or diagnosis, to the laboratory. Cultural and other studies on all samples were done with no knowledge of the clinical source from which they were derived. Following completion of the series, the results obtained on each numbered fluid were combined with the appropriate name and diagnosis, then supplied by Dr. Thorner.

The *materials and methods* used were identical to those described by Ichelson(1), except that doubly distilled water, made in this laboratory, was used in place of the bottled distilled water recommended by Ichelson. The 2 distillations were done in 2 Stokes stills operating in tandem.

Results of culture studies are shown in Table I.

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TABLE I.

	Spinal fluids	Positive cultures	Negative cultures
Controls	32	0	32
Probable multiple sclerosis	3	0	3
Multiple sclerosis	22	0	22
Total	57	0	57

The table shows the completely negative results. They indicate that no spirochete was found associated with the multiple sclerosis cases in this series.

All cultures have been held a minimum of 18 months. All primary cultures were periodically checked by means of phase contrast microscopy, as were all subcultures. Had a delayed growth occurred, it would have been found. Our results support those of Needham and associates(3), and Martin *et al.*(5), and contradict those of Ichelson(1,2) and Myerson *et al.*(4).

Summary. Spinal fluids from 32 patients not having multiple sclerosis, 22 patients having multiple sclerosis, and 3 patients having probable multiple sclerosis, were cultured according to the method of Ichelson except that the distilled water used was made in our laboratories. All cultures, carried a minimum of 18 months, were negative for spirochetes.

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