Athetosis in Typhoid Fever

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SUMMARY: A case of typhoid fever with neuropsychiatric features is described. These comprised confusion and delirium, meningism, a single major convulsion and bilateral athetotic movements. Athetosis has not previously been described in typhoid fever and must now be added to the long list of neuropsychiatric manifestations of this disease.

Case Report

A 20 year old Nepalese male was admitted to the British Military Hospital, Dharan in South East Nepal with a one week history of fever. The day before admission he had a rigor. On examination he was toxic and dehydrated but well nourished. He was delirious, confused and incontinent of faeces and urine. The temperature was 39.5°C, the blood pressure 110/70 mm Hg. and the pulse 100 per minute. The spleen was palpable 2 cms below the left costal margin and the abdomen was distended. There was marked neck stiffness but Kernig's sign was negative. He showed persistent bilateral classical athetotic movements. Neurological examination was otherwise normal and in particular there were no choreiform or myoclonic movements or evidence of Parkinsonism.

Investigations showed a white cell count of $3.4 \times 10^9/l$ with 60 per cent lymphocytes. The plasma sodium was 126 mmol/l but urea and potassium were normal. *Salmonella typhi* was isolated in pure growth from three blood cultures. Urinalysis showed a trace of protein. The cerebrospinal fluid (CSF) showed a normal glucose but the protein was mildly elevated to 52 mg/dl and there were two white cells/mm³. A direct Gram stain failed to reveal any organisms and the CSF was culture negative.

Hb, platelet count, liver function tests, a Chest X-ray and electrocardiogram were all normal. Repeated examinations of the peripheral blood for malarial parasites were negative. Japanese encephalitis viral antibody titres were negative.

Immediately after admission he was started on chloramphenicol 1 g six hourly intravenously and rehydrated with intravenous normal saline. Twelve hours after admission he suffered a single generalised convulsion controlled by intravenous diazepam. Twenty four hours after admission his athetotic movements had ceased. Thirty six hours after admission he was afebrile and lucid. He subsequently made a rapid uneventful and complete recovery.

Discussion

This patient, a proven case of typhoid, showed certain neuropsychiatric features. He was confused and delirious, had meningism, suffered a major convulsion

and showed bilateral athetosis. This picture is not unlike Japanese encephalitis which exists in the same part of Nepal and the distinction between these two entities has recently been discussed by Henderson *et al.*, in this journal¹.

Neuropsychiatric manifestations are common in typhoid fever². They were present in 50.4 per cent of a series comprising 246 patients from India³ and in over 57 per cent of a series of 959 patients in Nigeria⁴. A confusional or delirious state is the commonest manifestation occurring in 25 to 50 per cent of all cases of typhoid. Meningism occurs in 5 per cent of cases but a true typhoid meningitis is rare. Convulsions vary in incidence and occur in 2 to 10 per cent of cases^{3,4}. Other manifestations are less common and include semi-coma, coma, generalised myoclonus, polyneuropathy, mononeuropathy, focal neurological deficits, spasticity, hypotonicity, tremor and basal ganglia disorders. Psychiatric manifestations include temporary amnesia, schizophrenia and rarely hypomania. Basal ganglia disorders are well described – a transient Parkinson's syndrome is seen in about 2 per cent of cases^{3,4} while choreiform movements are well described in children with typhoid^{5,6}. A literature search suggests however that athetosis has not previously been reported.

This patient showed persistent bilateral athetotic movements which lasted a full 24 hours and then ceased.

This report adds athetotic movements, occurring as a transient and completely reversible phenomenon, to the long list of neuropsychiatric manifestations of typhoid fever.

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