Typhoid Fever Presenting as Acute Psychosis

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MJAFT 2003; 59 : 252-253

Key Words : Acute psychosis; Typhoid fever

Introduction

Enteric fever presenting with atypical manifestations is challenging even to astute clinicians and is not a new occurrence in the tropics. Various authors have highlighted the protean manifestations of this common tropical infection [1-3]. The emergence of multi-drug resistant strains of *Salmonella typhi* and the HIV pandemic have altered the spectrum of the disease and made the treatment difficult due to multiple drug resistance. The classical pattern of presentation of continuous fever with "step ladder" rise and relative bradycardia is not common.

Though neuropsychiatric complications are reported in as much as 45-76% of patients during every stage of typhoid fever [4-8], the chance of misdiagnosis or delayed diagnosis of the primary illness is still quite common. Most of such cases are considered to be a part of the "Typhoid toxemia", where patients develop delirium and confusion during the initial stages of the disease along with high fever, and generally subsides within 1-2 days of defervescence [8].

Case Report

An 18 year old male developed acute onset moderate grade fever without chills or rigors along with generalised weakness on 2nd July 2001. On the second day of his illness, he began behaving abnormally by remaining aloof from his colleagues, refusing to participate in training activities, displaying delusions of persecution and passing urine and stools in his clothes without any evidence of social embarrassment.

He was admitted to our hospital on 8th July 2001 for psychiatric evaluation and management. Examination at admission revealed an averagely built and nourished male who was febrile (101°F) with a regular pulse rate of 110/min, and blood pressure of 110/70 mmHg. The abdomen was soft and he had nontender hepatosplenomegaly of 3 cm and 2 cm respectively with left sided epididymo-orchitis. He was conscious, calm and aloof, disoriented in time, place and person and would occasionally obey verbal commands. He had retention of urine for which an indwelling catheter had to be placed. There was no focal neurological deficit.

A differential diagnosis of Cerebral malaria, Typhoid

fever with encephalopathy or Sepsis syndrome was considered at the end of physical examination. His investigations revealed anaemia (Hb:9.5gm/dL) with a normal total and differential leucocyte counts. Serum bilirubin : 1.8mg/dL, ALT: 48IU/L, AST: 67IU/L, normal renal parameters. Chest X-ray and urgent CECT brain followed by CSF study were normal. The MRI brain and EEG done were normal. Peripheral smear for malarial parasite and quantitative buffy coat (QBC) for *Plasmodium falciparum* and urine for urobilinogen were negative. Blood culture was sterile. Ultrasound scan of the abdomen and scrotum revealed hepatosplenomegaly and left sided orchitis. Culture of the fluid tapped from the left testis was sterile.

He was treated empirically with Inj Ceftriaxone 2 gm IV hourly, Inj Metronidazole 500 mg IV 8 hourly, Inj Gentamicin 80 mg IV 8 hourly and Inj Quinine 600 mg IV 8 hourly while all the investigations were being carried out. He continued to remain febrile and developed catatonia and generalised rigidity with tremors on the second day of admission.

Widal test revealed a *S typhi* O titre of 1:480 and bone marrow culture grew *S typhi* which was sensitive to Chloromycetin, Gentamicin, Ciprofloxacin and Ceftriaxone. Inj Quinine and Metronidazole were withdrawn on the fifth day when the bone marrow culture report was received. The urinary catheter was removed on the 5th day of admission following which there was no difficulty in passing urine. He became afebrile on the 6th day of antibiotic therapy though altered mental state persisted for a week after defervescence, following which his sensorium improved. At present he has very minimal behavioural abnormality in the form of slow response with a Folstein's mini mental status analysis (MMSA) score of 30 out of 30.

Discussion

The usual presentation of "typhoid toxemia" is at the onset of fever. It is in the form of "muttering delirium" or "coma vigil" with picking at bedclothes or imaginary objects and it usually subsides within 2-3 days of defervescence. However, enteric fever presenting with neuropsychiatric manifestations other than "typhoid toxemia" is quite uncommon. Review of literature has failed to reveal any presenting symptom other than encephalopathy with varying stages of coma.

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Our patient had behavioural abnormality within 24 hours of fever. He had more of obtundation than delirium, which is what has been typically described by most of the authors with typhoid encephalopathy [4,5]. However, the abnormal behaviour and extrapyramidal symptoms persisted for more than a week after defervescence which is unusual in typhoid encephalopathy [8]. Stupor, delirium and coma are grave prognostic markers which are associated with >40% mortality [8].

In an extensive study of neuropsychiatric manifestations of typhoid, Osuntokun et al [4] reported toxic delirium in 57% of 959 cases; 3.5% had varying depths of coma, 3.1% had bilateral pyramidal signs, 1% had transient extrapyramidal signs, 1% had peripheral neuropathy, mononeuritis multiplex and late development of post typhoidal schizophreniform psychosis. RS Wadia et al [5], have reported cerebellar ataxia as the commonest neurological complication of enteric fever among the 28 cases that they had studied. The ataxia was the sole feature in 10 of the cases, while in the other 18 it was associated with other neurological manifestations. Nystagmus and speech disorders were the least common manifestations, while gait and limb ataxia was universal. All neurological manifestations reversed completely within 6 weeks.

The cause of the neurological manifestation in typhoid fever is not clear. Various theories have been propounded, including the role of a possible toxin expressed by the bacteria, direct infection of the central

nervous system and possible autoimmune phenomenon [8]. However, detailed serological analysis and autopsy studies of patients who died following typhoid with neurological manifestations has failed to provide any evidence to support any of the above causes and it yet remains elusive [4,5,8]. In conclusion, patients presenting with acute onset fever and abnormal behaviour in tropical countries, like our patient, should also be evaluated for typhoid fever in addition to other diseases like encephalitis, cerebral malaria etc.

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Watching Football

A man with two badly burned ears went to the emergency room for medical treatment. "What happened" asked the doctor. "Well, my wife was ironing while I was watching the football game on TV," began the man. "She put the hot iron near the telephone and when the phone rang, I answered the iron." The doctor nodded, "But what happened to the other ear?" "Well, no sooner had I hung up," said the man, "when the same guy called again."

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The Sunday Times explanation for the extinction of the dinosaurs :-

'The extinction may well have occurred when a steroid hit the Earth'.

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