Salmonella Typhi Meningitis

Jamal Zafar,Rizwan Aziz Qazi,Salma Aziz (Department of Internal Medicine, Pakistan Institute of Medical Sciences, Islamabad.)

Salmonellosis is quite common in third world countries, being mainly due to contaminated waterand food. Usually the course is benign and dealt at primary health care level. Sometimes complications lead to significant mortality and morbidity. We report a case of salmonella typhi meningitis in a 55 years old patient who was treated with parenteral chloramphemcol, fortunately there was no residual sequel.

Case Report

A 55 year old man, resident of a village in Rawalpindi District and farmerby profession, was hospitalized in Medical Ward of Pakistan Institute of Medical Sciences in October, 1995 with 16 days history of high grade continuous fever which was low grade to start with and altered level of consciousness of 2 days duration. There was no associated headache or vomiting. However,, mild dry cough was noted with the onst of the illness. Systemic enquiry at that time was unremarkable. He had received antimalarials, co-trimaxazole and 5 days course of oral ofloxacin before reporting to us. Later injectable amoxicillin was also administered only with worsening of the clinical condition.
Examination revealed a listless drowsy man with signs of meningeal irritation. Pulse rate was 86/mm regular. Tempeature on admission was 99°F which rose to 103°F the next day. Liver and spleen were not palpably enlarged. No neurological deficit was noted and funduscopy was unremarkable.
Patient was provisionally labelled as 'Partially Treated Pyogenic Meningitis' or Tuberculous Meningitis. Lab test reports available with the patient showed normal complete blood picture with normal renal profile. Based on provisional diagnosis, i/v benzyl penicillin and chloramphenicol were started after obtaining the CSF and blood sample for culture and sensitivity. CSF revealed proteins of 160 mg/dJ and glucose of 52 mg/dl. Total cells were 1200/nun3 with 70% lymphocytes and 30% polymorphs. Grain staining and AFB did not show any organism. Unfortunately CSF culture was not done.
The patient improved dramatically and on third day fever started settling, touching the baseline on fifth day, alongwith improvement in level of consciousness. He was almost in normal state of health on seventy day. On filth day his blood culture yielded growth of salmonella typhi sensitive to chloramphenicol, ofloxacin, enoxacin, ceftriaxone resistant to amoxycillin. Benzyl penicillinn was discontinued on fifth day. A repeat CSF on tenth day was nonnal. So final diagnosis of Salmonella typhi infection with Salmonella Meningitis was made.

Discussion

Bacterial Meningitis can be caused by various organisms in different clinical settings which vary with the age, geographical distribution and underlying immune status of the patient. Typically bacterial meningitis presents with acute onset of fever, headache and vomiting with signs of meningeal irritation but it can have insidious onset with few or no clinical signs[1]. Partial treatment with anbitiobitcs can also alterthe course of events. As tuberculosis is so prevalent inour country, diagnosis of tuberculous meningitis was also entertained. But, to our surprise blood culture revealed salmonella typhi and repeat CSF examination on tenth day was normal without any antituberculous treatment.
Typhoid fever can have many complications including meningitis butsince the era ofantibioticsexceptforrelapse the other complications are quite infrequently seen now[2]. Only one case

has been reported from Sweden in which a 70 years old woman developed meningitis due to Salmonella typhi[3]. The largest study is from India in which out of 233 cases of bacterial meningitis only 8 were due to Salmonella species and 3 of Salmonella typhi[4].
CSF picture in Salmonella resembles viral meningitis also and the only way to differentiate is to isolate the organism by CSF culture[5]. In our patient CSF culture was not done due to non-availability of the facility in the Lab at that lime. But positive blood culture with CSF pleocytosis and response to chloramphenicol are infavourof Salmonella typhi meningitis. In our patient CSF showed more cells and high proteins but glucose was normal and most important differential diagnosis was partially treated pyogenic meningitis. The isolation of salmonella typhi and dramatic response to antibiotics solved the problem, although resistant strains to chlorarnphenicol are quite frequent. If any case turns out to be resistant to ampicillin orchlorainphenicol thenthe only antibiotic left which canalso penetrate CSF is ceftriaxone. One can anticipate some sequel of the disease in the form of residual seizure, hydrocephalous, subdural empyema and permanent disabilities like mental retardation, paresis, athetosis and visual disturbances but fortunately our patient did not have any of the sequel mentioned[2].

References

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