

CEREBELLAR ATAXIA COMPLICATING PARATYPHOID FEVER – A CASE REPORT

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ABSTRACT

Enteric fever is a common systemic infection in developing countries. The presentation may be atypical particularly when associated with neurological complications like delirium, ataxia etc, when the diagnosis may be missed or delayed. Cerebellar ataxia is a less often reported complication. We present a case of cerebellar ataxia associated with *Salmonella paratyphi* 'A' infection in a young male who responded well to ceftriaxone.

KEY WORDS

Cerebellar ataxia, Paratyphoid, Ceftriaxone.

INTRODUCTION

Enteric fever is a widely prevalent disease in the tropics. Enteric fever is a systemic infection presenting with a multitude of manifestations resulting in a variety of complications. Neurological manifestations constitute an important & often under diagnosed or misdiagnosed complication of Enteric fever.[1] The well known neuro-psychiatric manifestations include confused state, encephalopathy, meningism, convulsions and focal neurological deficits. [2] Acute cerebellar ataxia as a presenting complication is rare although involvement of central nervous system is not uncommon. [3]

A case of isolated cerebellar ataxia complicating paratyphoid fever in a young male is reported for its rare occurrence.

CASE REPORT:

A 20 year old male presented to the medical outpatient department with history of fever of 7 days duration, vomiting on & off in the past two days, unsteadiness of gait for the past two days. The patient was not a known diabetic or hypertensive or alcoholic. There was no H/O seizures or other neurological problems in the past.

On examination the patient was drowsy. Pulse rate was 76/min, Blood pressure was 120/ 90 mm Hg and core temperature was 100⁰F. Examination of cardiovascular, respiratory system and abdomen was normal. There was no organomegaly. Neurological evaluation revealed gait ataxia, finger nose past pointing to left, dysdiadochokinesia, tandem walking positive and mild dysarthria. There were no signs of meningeal irritation or signs of motor weakness. Examination by ENT & ophthalmic surgeons ruled out any local abnormalities.

Laboratory investigations done at admission include total and differential count of WBC, Hb%, ESR, RBS, urea, creatinine, serum electrolytes, LFT, Widal ASO and ABG all of which were within normal range. HBsAg, HIV, Dengue Ag and Ab were negative. Malaria antigen, peripheral smear were negative for parasites. Chest X – ray was normal. Urine culture showed no growth.. Platelet count at admission was 1.1 lakhs / cumm. Two of the three samples of blood for culture yielded a pure growth of *S. paratyphi* 'A'. A repeat WIDAL test done 10 days after admission showed a titre of *S.typhi* 'O' 1 in 160, *S.typhi* 'H' 1 in 40, *S.paratyphi* 'AH' 1 in 320 and *S.paratyphi* 'BH' <1 in 20 dilutions. MRI scan of the brain was normal.

Patient was empirically put on inj.ceftriaxone 1 gm bid at admission along with other supportive treatment and continued till day eleven of admission. The patient became afebrile on day four and gait improved steadily over the next one week. The patient was discharged at request with advice to substitute ceftriaxone with oral cotrimoxazole d.s for ten days before coming for review. There was only mild ataxia at the time of discharge. The patient was lost for follow-up.

DISCUSSION

Enteric fever is a systemic illness caused by species of *S.typhi* most often and *S.paratyphi* A, B and C less often. The typical clinical manifestations of fever and abdominal pain may not be seen in all cases. Neurological manifestations can occur in enteric fever. The common manifestations include toxic delirium, encephalitis and psychosis. Osuntokun et.al. Reported toxic delirium in 57% of cases in their study.

[4] Besides other neurological manifestations but no case of cerebellar ataxia.

Cerebellar ataxia was observed in 2-3% of cases in a study by RS Wadia et.al and isolated cerebellar ataxia in 10 out of 28 cases of cerebellar ataxia associated with enteric fever. [5] Most cases (87 %) of enteric fever who where to develop neurologic signs had a toxic delirium in the earlier stages of illness in their study. Cerebellar ataxia appeared in the first week of fever in 25%, second week in 61% and in third week in 14% of cases in their study. [5]

Isolated acute cerebellar ataxia is a rare neurological manifestation associated with enteric fever and usually occurs in the second week of illness. [6] The first description of cerebellar ataxia in enteric fever was by Westphal in 1872.[7] A few isolated cases have been reported in the Indian literature subsequently. [8,9] In the study by Joshi the prevalence of cerebellar ataxia was 3.5%. [10] The explanation for the neurological manifestations is not clear. Most of the authors have seen nonspecific oedema and vascular changes as their only finding in fatal cases.[11] The diagnosis of enteric fever in this case was based on isolation of salmonella paratyphi 'A' from two of the three blood culture samples collected at one hour intervals and also by a high titre of antibodies to *S.paratyphi* A.

Enteric fever with its classical features is easy to diagnose but when patients present with atypical features particularly in the absence of clinical laboratory results viz isolation of organism & markedly raised titer in WIDAL test [12] the diagnosis may be difficult. Although neurological complications have been reported their incidence varies from 5 – 35% in different series of studies. A high index of suspicion is necessary for early diagnosis of enteric fever presenting as cerebellar ataxia for initiation of appropriate treatment.

REFERENCES

1. Manoj Lakhotia, R S Gehlot, Pravesh jain, Sanjeev Sharma, Amita Bhargava. Neurological manifestations of Enteric fever. *JACM* 2003; 4 (3): 196-9
2. P Kaira, NK Agrawal, S Agarwal. Acute reversible cerebellar Ataxia in Typhoid fever. *Journal Indian*

- Academy of clinical Medicine*, vol 3, No.1, January – March 2002. 97
3. Dewan P, Poonya V, Kaushik JS, Gomer S, Singhal S. Isolated cerebellar ataxia : an early neurological complication of enteric fever. PMID. 1968 98 64
 4. Osuntokun BO, Bademosi O, Oguneemi K, Wright SG. Neuropsychiatric manifestations of typhoid fever in 959 patients. *Arch. Neurol* 1972; 27: 7-13
 5. RS Wadia, NR Ichaporia, RS Kiwalkar, et al. Cerebellar ataxia in enteric fever. *J. Neurol Neuro surg Psychiatry* 1985 48: 695 – 697
 6. I.M.S. Sawhney, S. Prabhakar, U.K. Dhand, J.S. Chopra. Acute cerebellar ataxia in Enteric fever. [http:// dx.doi. org/10.1016/0035-9203 \(86\) 90202 – 6](http://dx.doi.org/10.1016/0035-9203(86)90202-6)
 7. Westphal C, quoted by Weiss S, Guberman A. Acute cerebellar ataxia in infectious diseases. In. Vinken PJ, Bruyn GW. Eds. Handbook of clinical Neurology. Amsterdam: Elsevier North Holland. 1978. 34. 619 – 39
 8. Ukadgaonkar NG, Talib SH, Kharker RA, Ekbote SP. Acute reversible cerebellar syndrome in Enteric fever. *J. Assoc. Physicians India* 1981: 29: 781 -2
 9. Siraslewalla R, Pardiwalla BS, Shah JM, Dastur FD. Typhoid fever presenting as cerebellar ataxia. *J. Assoc. physicians India* 1981: 29: 227-8
 10. Joshi HD. Complications, Prognosis and relapse in Typhoid fever. *J Indian Med Assoc* 1963 : 41: 67-73
 11. Aita JA. Neurological Manifestations of General Diseases 2nd Ed, Charles C Thomas, Springfield, Illinois. 1972.
 12. RC Parmer, SB Bavdekar, R Houilgol, MN Muranjan. Nephritis and cerebellar ataxia: rare presenting features of enteric fever. *J Postgrad Med* 2000, 46: 184



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