

Case Report

Acute aphasia complicating typhoid fever

Mohd Nazri A, Wan Nasruddin WI, Nor Hidayah ZA, Azhar M, Khairul Has H

Department of Anesthesiology & Intensive Care, Hospital Raja Perempuan
Zainab II, Kota Bharu Kelantan, Malaysia

A 13 years old Malay boy with typhoid fever presented with high grade fever associated with myalgia and arthralgia. While in ICU, he developed slurred speech with myoclonic jerk. CT scan of the brain reported multiple small

infarctions. This case highlights an unusual neurological complication of typhoid fever. (Rawal Med J 201;43:192-193).

Keyword: Typhoid fever, aphasia, Salmonella typhi.

INTRODUCTION

Typhoid fever is a bacterial disease caused by *Salmonella enterica* serovar Typhi (*Salmonella typhi*) via the fecal-oral route of contaminated water or food.¹ Typically, it present as an acute febrile illness often accompanied by headache, abdominal pain, diarrhea or constipation, malaise and myalgia as common presentation. It can also present with severe complications including intestinal perforation, hepatitis, myocarditis, pneumonia and neurological manifestation.¹⁻³ Neurological manifestation was reported to be in around 35% of patients.⁴ A variety of neurologic signs have been documented, including acute neuropsychiatric illness, spasticity and clonus, ataxia and aphasia.^{3,5} However, acute aphasia is a very uncommon presentation.^{2,3}

CASE PRESENTATION

We report a case of 13 year old Malay boy, pre-morbidly well with not known to have any medical illness. He presented with short history of high grade fever for five days associated with nausea, vomiting and loose stool. He also had lethargy, poor oral intake, arthralgia and myalgia. On examination, noted temperature was 38 Celsius, blood pressure of 86/48 mmHg and pulse rate of 120 beat per minute, SPO2 100% and GCS was 15/15. Generally, he looked dehydrated with dry lips but good pulse volume and capillary refill time less than 2 seconds. Respiratory, heart and abdominal finding was normal.

In laboratory investigations, Full blood count

showed bicytopenia (white blood cell count was 1.6×10^3 ; Hemoglobin 11 g/dl; Platelets was 49), sodium of 119 mmol/L. Potassium was 3.6 mmol/L; chloride 99 mmol/L; creatinine 99 umol/L. He was initially treated as severe dengue with plasma leakage in view of low WBC and platelets count, which is also more prevalence in our setting. This was quickly ruled out after Ns1 antigen, IgM, and IgG for Dengue revealed negative result. Diagnosis was revised to Typhoid fever after blood culture result came back after 72 hours of ICU admission grew *Salmonella typhi* species.

After four days in ICU, he started to develop neurological sign and symptoms. He started to have slurred speech and fluctuating GCS (14-15/15). Neurological examination showed brisk tendon reflexes and clonus with normal sensory and motor power. Urgent CT brain with contrast was arranged for him and showed multiple small infarctions at bilateral internal capsule and left centrum semiovale. Then we revised our diagnosis again to severe Thyphoid fever with neurological manifestation. He was treated with intravenous Rocephine 3 gram daily and intravenous dexamethasone 120mg (3mg/kg) stat and 40 mg (1mg/kg) OD for 2/7. Day by day, his condition improved and he was able to be discharged back home after completed antibiotic.

DISCUSSION

Typhoid is still a serious disease, with mortality that can be as high as 13% in patients with neurological manifestation.³ Therefore, immediate and

appropriate management is very important. A six years study from India found that neurological manifestation were as high as 84% of patients but there was no report regarding aphasia in their patient.⁴ In a study from Malaysia, three of most common complication were hepatitis, bone marrow suppression and paralytic ileus in which neurological manifestation were mainly acute psychosis.⁵

A study from India in 1991-1992 showed that 3.2% of study population developed aphasia.² We also found in an old study showed that aphasia occurred in 3% of patients who made a complete recovery within 8 weeks.⁶ Neurologic findings in these patients usually will resolve over time, sometimes within weeks of acute illness. In this patient, he made a full recovery in about 2 weeks.

The mechanism responsible for the neurological manifestations of typhoid is not really known.⁴ It has been postulated for various mechanisms mainly encephalitis.⁶ Other studies suggested the involvement of toxin in subject to the reversibility of this condition.^{3,6}

Lumbar puncture was not done in this patient in view of family members' refusal. However, CSF analysis in most of the cases revealed no abnormality.⁶ CT scan for this patient was reported as multiple small infarction, which is distinct compared to most of neurological manifestations such as cerebritis, encephalitis and meningitis.^{2,4}

The treatment of typhoid fever with third generation cephalosporin such as ceftriaxone is associated with higher cure rate.⁷ This patient was treated with high dose IV ceftriaxone 3 gram daily. Steroids also have been used in the case of severe typhoid with encephalopathy.⁸ High dose dexamethasone 3 mg/kg followed by 1 mg/kg was prescribed for eight doses in our patient. This patient was doing very well and was able to be discharged from our ICU to general medical ward and subsequently able to be discharged home after 10 days stay in the hospital.

ACKNOWLEDGEMENTS

We thanks Dr Anilawati Mat Jelani, MD, MMed (Medicine) Infectious Disease Physician; Dr

Noridah Nordin MD, MMed (Medicine) Infectious Disease Physician; Dr Rose Izura Abdul Hamid, MD, MMed (Medicine) Neurologist from Medical Department, Hospital Raja Perempuan Zainab II, Kota Bharu, Kelantan as part of team in managing this patient during ICU stay at Hospital Raja Perempuan Zainab II, Kota Bharu, Kelantan, Malaysia.

Author Contributions:

Conception and design: Wan Nasruddin
Collection and assembly of data: Mohd Nazri
Analysis and interpretation of the data: Nor Hidayah, Khairul Has
Drafting of the article: Mohd Nazri
Critical revision of the article for important intellectual content: Azhar M
Final approval and guarantor of the article: Wan Nasruddin
Corresponding author email: Nor Hidayah: nhza85@yahoo.com
Conflict of Interest: None declared
Rec. Date: Aug 1, 2017 Revision Rec. Date: Sep 7, 2017 Accept Date: Oct 24, 2017

REFERENCES

1. World Health Organization. The diagnosis, treatment and prevention of typhoid fever. Geneva: WHO; 2003: 7-18.
2. Biswal N, Mathvi B, Bhatia BD, Srinivasan S, Nalini P. Enteric fever-a changing perspective. *Indian Pediatr* 1994;31:813-9.
3. Sejvar J, Lutterloh E, Naiene J, Likaka A, Mander R, Nygren B, et al. Neurologic manifestations associated with an outbreak of typhoid fever, Malawi-Mozambique, 2009: an epidemiologic investigation. *PloS one* 2012;7:e46099.
4. Ali G, Rashid S, Kamli MA, Shah PA, Allaqaband GQ. Spectrum of neuropsychiatric complications in 791 cases of typhoid fever. *Trop Med Int Health* 1997;2:314-8.
5. Malik AS. Complications of bacteriologically confirmed typhoid fever in children. *J Trop Pediatr* 2002;48:102-8.
6. Scragg J, Rubidge C, Wallace HL. Typhoid fever in African and Indian children in Durban. *Arch Dis Child* 1969;44:18-28.
7. Arjunan M, Al-Salamah AA. Typhoid fever with severe abdominal pain: diagnosis and clinical findings using abdomen ultrasonogram, hematology-cell analysis and the Widal test. *J Infect Dev Ctries* 2010;4:593-6.
8. Chisti MJ, Bardhan PK, Hug S, Khan WA, Khan AM, Sharifuzzaman, et al. High-dose intravenous dexamethasone in the management of diarrheal patients with enteric fever and encephalopathy. *Southeast Asian J Trop Med Public Health* 2009;40:1065-73.