

## Case Report

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# Typhoid fever with multiorgan involvement: pulmonary, hepatic and renal complications with dyselectrolytemia

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## ABSTRACT

Typhoid fever is an important health problem in developing countries like India, especially among young children. It may involve a number of systems and may present with various complications specially if untreated. We report a rare case of typhoid fever with multiple complications in 4 years young female who presented with fever, toxemia, bronchopneumonia, icteric hepatitis and also developed AKI, hyponatremia. Enteric fever with its complications has been reported previously but mostly reported with surgical complications, pulmonary complication, Myocarditis, hepatitis, hepatitis with renal failure etc but this seems to be unique case as presented with multiorgan involvement e.g. bronchopneumonia, icteric hepatitis, AKI and dyselectrolytemia. Previously reported cases were usually adolescents while this case is just 4 years young child. Despite multiple complications, patient responded well to treatment of enteric fever and discharged successfully.

**Keywords:** AKI, Bronchopneumonia, Hepatitis, Hyponatremia, Typhoid

## INTRODUCTION

Typhoid fever is an important cause of avoidable mortality in regions without adequate access to safe water and sanitation. Enteric fever is a serious systemic infection caused by salmonella enteric serotype typhi and paratyphi. It is more common in the continents of Asia and Africa due to inadequate hygiene and the lack of safe drinking water. It is transmitted by feco-oral route.<sup>1,2</sup> Typhoid remains a significant burden in India, particularly among young children, despite apparent declines in prevalence. Children 2-4 years old have highest incidence.<sup>1</sup> In studies, up to one third of children with bacteriologically confirmed typhoid fever developed complications. These microorganisms colonize the small intestine, invade the gastrointestinal mucosa and then spread to the liver, spleen and bone marrow.<sup>3</sup> The severity of infection depends on the initial infective dose, virulence and the host immune response.<sup>4</sup> Children with

splenomegaly, thrombocytopenia or leucopenia were more likely to develop complications.<sup>5</sup> The authors discuss a case of typhoid fever presented with pulmonary, hepatic and renal involvement with hyponatremia.

## CASE REPORT

4 years old female patient came with c/o fever from 15 days and cough from 3-4 days. Patient did not take any treatment except antipyretics and consulted due to high grade fever and troublesome cough. On examination patient had coated tongue, toxic look, b/l crepitations, tachypnea, icterus, abdomen distension with liver palpable 4-5cm. Investigations revealed blood sugar 72, S bili T 3.5 D 2, SGOT 401, SGPT 374, ALP 585, S Albumin 3, S calcium 7.8, MP card negative, dengue serology negative, S CRP non-reactive, Widal test TO 1:320 + TH 1:320 +, TLC 8800 (L 46.7, N 41.8), Hb 8.2, plt 4.70 lac, ESR 25, CXR showed b/l infiltration with

right hilar prominence & blood culture sent. Serology for hepatitis A, B & E sent which came negative, LFT on 2nd day was SGOT 942, SGPT 622, ALP 575 while urea 17, creatinine 0.6, MP slide negative, dengue serology negative, abdominal USG s/o infective hepatitis changes. Blood culture on D3 of admission was positive for *Salmonella typhi* while rickettsial and leptospiral serology negative. On day 5, S bili T 1.5 D 0.8, SGOT 203, SGPT 213, ALP 213, S creatinine 6.5, urine protein 2+, urine showed pus cells and epithelial cells, TLC 6200 (L67.2, N23), Hb 7.8, platelet 3.5 lac. Abdomen USG repeated to see renal status, was normal. Next day S creatinine repeated and was 6, S Na 124.6, K 4.2, Cl 99.4, urine output couldn't be measured but patient developed edema and reduced urine output. Urine culture was positive for *Salmonella typhi*, but stool culture was negative. Parents were advised for nephrologist reference at higher center but due to poor socioeconomic status parents refused this and kept taking injection ceftriaxone, tab azithromycin. On day 9, S creatinine 0.8, SGPT 42, SGOT 40, Na 136, CXR became normal with treatment of typhoid fever.

## DISCUSSION

More than 20 million cases per year occur in the hygienically compromised areas of developing countries and out of them Pakistan, India and Bangladesh together bear the brunt of the attack accounting 85% of the cases occur globally.<sup>6</sup> Despite improvement in sanitation and overall health situations, enteric fever is still a deadly disease in developing countries, particularly in India.<sup>7</sup> Both typhoid and paratyphoid fever tend to present acutely with similar clinical manifestations and incubation period of 5-12 days. Symptoms may range from a mild course with fever associated to general malaise, abdominal manifestations, roseola, sweating, headache, anorexia, cough, weakness, sore throat, dizziness, muscle pain, bradycardia, hepatomegaly, splenomegaly, and neuropsychiatric manifestations.<sup>8,9</sup>

When untreated, typhoid fever persists for 3-4 weeks. Death occurs in 10-15% of untreated cases reducing to one to two percent with adequate and timely antibiotic treatment.<sup>10</sup> Though in some communities' case fatality rates may be as high as 47%.<sup>11</sup> Complications of enteric fever usually occur in 3rd or 4th week of illness, mostly in inadequately treated patients.

Commonest complications are intestinal hemorrhage and perforation due to necrosis in the Peyer's patches of intestine requiring prompt medical or surgical intervention and may lead to encephalopathy, shock.<sup>9,12,13</sup> These are life threatening emergencies and carry a high mortality rate up to 10%.<sup>14</sup>

Atypical presentation of enteric fever is fever with abdominal lymphadenopathy, acute acalculus cholecystitis, splenic abscess, liver abscess, jaundice, pancreatitis, pneumonitis, meningitis, pancarditis, myocarditis, orchitis, osteomyelitis, parotitis,

bronchopneumonia and renal failure. Involvement of other organs is uncommon and may be caused by hematogenous spread.

## CONCLUSION

Typhoid fever is a disease of high prevalence in Asia. Despite efforts to maintain adequate surveillance and improve diagnostic methods, it is not easy to recognize because of low sensitivity of both clinical and laboratory examinations. It tends to be confused with malaria, dengue, flu and other endemic febrile illnesses.<sup>15</sup> Typhoid fever may present with typical clinical features or atypical complications, so it should be kept in differential diagnosis in variable febrile disease presentations. Early diagnosis and timely treatment are keys to reduce morbidity and mortality. Enteric fever with its complications reported previously but mostly reported with surgical complications, pulmonary complication, Myocarditis, hepatitis, hepatitis with renal failure<sup>16</sup> etc but this seems to be unique case as presented with multiorgan involvement eg bronchopneumonia, icteric hepatitis, AKI & dyselectrolytemia. Previously reported cases were usually adolescents while this case is of just 4 years young child. Despite multiple complications, patient responded well to treatment of enteric fever and discharged successfully

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