

**ABSTRACT**

Typhoid fever is a common public health problem. All cases may not have typical presentation with fever, toxæmia and constipation in the first week and complications in the form of intestinal haemorrhage and intestinal perforation in the third week. Unusual presentations of typhoid fever include jaundice, abdominal lymphadenopathy, acalculous cholecystitis, splenic and liver abscess, myocarditis and pneumonitis. We report a case of typhoid fever in a 22 year old male who presented with fever, frank jaundice and thrombocytopenia. Early diagnosis and prompt treatment is the key to successful outcome.

**INTRODUCTION**

Typhoid fever is an important public health problem caused by *Salmonella typhi* and *Salmonella paratyphi*. The most common method of spread is by ingestion of contaminated food and water.<sup>1,2</sup> The ailment is quite common in developing countries like south-east Asia, China, Africa, south and central America. It has become of rare occurrence in developed countries due to improvement in safe water supply and proper disposal of excreta. It is an acute systemic ailment caused by bacterial invasion of Peyer's patches in the ileum leading to bacteremia and multiplication of bacteria in the phagocytic cells of liver, spleen, and lymph nodes. Various organs can be involved in the course of typhoid fever resulting in wide spectrum of presentations from simple fever to involvement of multiple organs, leading to multi-organ failure.

Fever, toxæmia and constipation in the first week, leading to abdominal discomfort, rose spots on trunk, splenomegaly, diarrhoea and vomiting in the second week and further leading to complications in the form of intestinal haemorrhage and intestinal perforation in the third week are the typical features of typhoid fever. However, all patients of typhoid fever do not have typical features and atypical presentations are not uncommon.

Atypical presentations include fever with –

- Abdominal lymphadenopathy
- Acute acalculus cholecystitis
- Splenic abscess
- Liver abscess
- Jaundice
- Pancreatitis
- Pneumonitis

- Meningitis
- Pancarditis/myocarditis
- Orchitis
- Osteomyelitis
- Parotitis

Complications of typhoid fever usually occur in 3<sup>rd</sup> or 4<sup>th</sup> week of illness, mostly in inadequately treated patients. Commonest complications are intestinal haemorrhage and perforation due to necrosis in the Peyer's patches of intestine requiring prompt medical or surgical intervention.<sup>3</sup> These are life threatening emergencies and carry a high mortality rate of upto 10%.<sup>4</sup> Involvement of liver is uncommon and is caused either by hematogenous seeding or contagious spread from reticuloendothelial system. Clinically, it manifests as hepatomegaly and abnormal liver function tests. Jaundice is usually seen during the course of typhoid hepatitis.

Myocarditis in typhoid fever is an underdiagnosed condition. There is inflammation of intramural vessels alongwith lymphocytic-macrophage infiltration of stroma leading to granuloma formation and necrosis of cardiac myocytes. Clinical features include chest pain, shortness of breath, fatigue, reduced functional capacity and new onset arrhythmias. The presentation with congestive heart failure and pulmonary edema in young patients especially when it is concurrent with typhoid infection, should arouse suspicion of myocarditis. The common ECG abnormalities are PR prolongation, QTc prolongation, ST segment depression, T wave inversion and sinus bradycardia. Cardiac enzymes may be elevated.

**CASE REPORT**

A 22 year old boy came to our hospital with history of fever for the last one week and jaundice for the last 3 days. He was febrile (temp 101F), icteric with hepatosplenomegaly. Laboratory investigations revealed Hb 12.2gm%, TLC 3800/cumm (N70, L25, M3, E2), platelets 40,000/cumm, ESR 12mm, total bilirubin 7.4mg% (direct 6.4mg%), ALT 234, AST 190, ALP 230, total proteins 5.8gm/dl, serum albumin 3.0gm/dl. Peripheral smear showed normocytic normochromic picture with thrombocytopenia. Serum electrolytes, prothrombin time and renal function tests were normal. Dengue IgM and leptospira IgM were negative. Ultrasound abdomen revealed hepatosplenomegaly without any free fluid in the abdomen. Widal test was highly positive (*Salmonella*

typhi H positive upto 1:320 dilutions). Blood culture grew Salmonella typhi organisms after 2 days of incubation.

Patient developed petechial spots all over the body and the platelet count dropped to 28,000/cumm on the 2<sup>nd</sup> day of admission. He was treated with parenteral ceftriaxone, ofloxacin and IV fluids. The patient became afebrile after 3 days, jaundice started improving and petechial rash disappeared. Total bilirubin came down to 2.4mg/dl on the 7<sup>th</sup> day of admission. Platelets increased to 92,000/cumm. He was discharged after 10 days on oral cefixime and ofloxacin.

## DISCUSSION

Typical presentation of typhoid fever has changed over the years. Atypical presentations can delay the clinical suspicion, diagnosis and treatment. Our patient also had atypical presentation in the form of fever, jaundice and thrombocytopenia. Initially, we considered the possibility of malaria, dengue, leptospirosis and viral hepatitis. Typhoid fever is also associated with abnormal liver function tests but frank jaundice and thrombocytopenia at presentation is rare. Rasoolinejad et al reported only 2 patients (1.86%) having frank jaundice out of a total of 107 cases of typhoid fever.<sup>5</sup> However, Dutta TK et al, did not report any case of jaundice out of 32 cases of typhoid fever.<sup>6</sup> Khosla reported liver involvement in 4.8% cases of typhoid fever.<sup>7</sup>

Typhoid hepatitis has a higher relapse rate.<sup>7</sup> Incidence of intestinal haemorrhage, intestinal perforation and overall mortality is higher in jaundiced typhoid patients.<sup>8</sup> Pohan et al, in a study involving 119 patients of typhoid fever, reported thrombocytopenia (platelets between 10,000 to 50,000/cumm) in 2.6% patients.<sup>9</sup> Prevalence of atypical presentation is high in MDRTF (Multi Drug Resistant Typhoid Fever).<sup>10</sup> Zaki et al, observed that MDRTF can mimic endemic ailments like malaria, viral hepatitis, meningitis and bronchopneumonia.<sup>10</sup>

## CONCLUSION

Clinical presentations of typhoid fever vary from case to case. Fever with jaundice and thrombocytopenia is usually seen in malaria, dengue and leptospirosis. However, differential diagnosis of typhoid fever must be kept in mind in a febrile patient with jaundice, especially in tropics as early diagnosis is crucial for a favourable outcome. This case report is aimed to sensitize the physicians that typhoid infection can present with fever, frank jaundice and thrombocytopenia.

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