

Complicated Typhoid Fever

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Abstract

Acute typhoid fever, caused by the gram negative bacterium *Salmonella typhi* may have a wide spectrum of clinical presentation. We report a young boy with typhoid fever, who developed myocarditis and splenic abscess, two of the unusual complications in the course of the disease. Judicious use of corticosteroid and antibiotic helped in achieving a favourable outcome.

Introduction

Typhoid fever, due to its varied clinical manifestations can easily be confused with a number of febrile conditions. Its presenting manifestations vary from mild illness to severe life-threatening complications.

Case Report

A 15 year old boy presented with high grade continuous fever (101°F -104°F) of 10 days duration with altered sensorium of last 24 hours duration and a dull aching pain over the left upper abdomen of 3 days duration. He was on oral amoxicillin (1.5gm/day) for the preceding 5 days without relief. Altered sensorium necessitated hospitalization. On admission the patient was febrile (oral temperature of 104°F) with mild dehydration and altered higher function (GCS: E₃M₆V₄). Neck was supple. He had tachycardia (PR 110/min) with supine BP of 100/70 mm of Hg. The abdomen was mildly distended, soft with hyperactive bowel sounds. Spleen was enlarged 3 cm below the left costal margin, tender and soft in consistency. There was left sided lower intercostal tenderness with normal vesicular breath sounds without any adventitious sounds. Examination of the other systems was non-contributory.

Complete blood count and routine biochemistry were unremarkable except for a raised sedimentation rate (50mm in 1st hour). Malarial antigens and dengue serology were non-reactive. Widal test was positive (O-1:320; H-1:320). Blood and urine were sent for culture and he was started on Inj. ceftriaxone (2gm/d) plus ofloxacin (600mg/d). USG abdomen documented splenomegaly with a hypoechoic lesion (46mm×40mm) close to its upper pole with minimal left sided pleural effusion (Fig.1). Microscopic examination of US guided aspirate from the lesion was suggestive of an abscess. On the 2nd post admission day the patient developed acute onset shortness of breath with



Fig. 1 : USG abdomen showing pleural effusion (a) with splenic abscess (LES)(b).

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retrosternal discomfort. On examination the patient was afebrile, tachypnoeic (RR: 34/mn) with a pulse rate of 116/mn and BP of 90/74mm of Hg (supine). Examination of the Cardio-respiratory system was unremarkable. ECG showed tachycardia, 1° AV block (PR: 0.24sec) and incomplete right bundle branch block (RBBB) (Fig.2). The cardiac enzymes were elevated [CK: 2277U/L (normal 55-170) and CK-MB: 104U/L (normal<25)]. Echocardiogram documented generalized hypokinesia of myocardium with compromised LV systolic function (LVEF-44%). Blood culture grew *Salmonella typhi* sensitive to both ceftriaxone and ofloxacin, but resistant to amoxycillin. With an established diagnosis of salmonella myocarditis he was put on high dose dexamethasone (3mg/kg followed by 1mg/kg QDS for 8 such). The patient improved symptomatically, became afebrile on 7th day with complete resolution of splenic abscess and AV conduction disturbance. The cardiac enzymes came down within the reference range and a repeat 2D Echo documented improved cardiac contractility and systolic function (LVEF 64%). He was discharged in a stable condition on 10th post admission day.

Discussion

Up to 10% of acute typhoid fever patients may develop serious complications, intestinal as well as extra-intestinal, depending on the clinical setting and the quality of available medical care.

The incidence of cardiac involvement in typhoid is variable. There are conflicting reports in the world literature. In a study from Iran cardiac complications were seen in only 4.6% patients.¹ Interstitial myocarditis and sometimes pancarditis complicate the illness in the 2nd week. Characteristic pathological features of typhoid fever myocarditis are inflammation of the intramural vessels, microcirculatory disturbances, edema, lymphocytic-

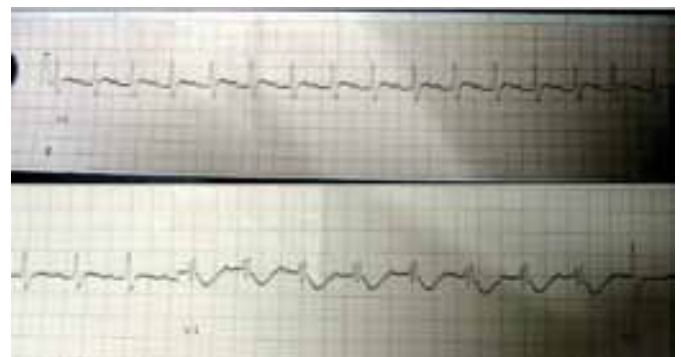


Fig. 2 : ECG showing tachycardia, 1° AV block (upper panel) and incomplete right bundle branch block (lower panel).

macrophageal infiltration of the stroma, sometimes with formation of granulomas and dystrophic or necrotic changes of cardiac myocytes. Electrocardiographic alterations bear a direct relationship to the severity of disease process, occur at the height of illness and have a bearing on the prognosis. Commonest ECG abnormalities are Q-T prolongation, ST-T changes, bundle branch block, first degree A-V block and arrhythmias. All the ECG changes are transient except the bundle branch block which may persists for a long time.² This feature was evident in this particular patient. The RBBB persisted even after resolution of the PR segment prolongation. Very few documentations of salmonella myocarditis are available till date.³ Judicious use of dexamethasone is indicated in selected cases of severe myocarditis to reduce the fatality rate.⁴

Splenic abscess associated with typhoid fever has only rarely been described in literature.^{5,6} It often produces minimal signs and symptoms, so the real incidence could well be underestimated. It has a favourable outcome if pus is evacuated under appropriate antibiotic coverage.

We suggest recording a 12 lead ECG in all cases of enteric fever and those with ECG changes must be observed carefully for clinical evidence of myocarditis

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