Typhoid fever with acute abdominal pain masquerading as surgical emergency!

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ABSTRACT

Typhoid fever is a common childhood infectious illness in resource-poor countries. Gastrointestinal manifestations are common presentation in this illness. We report a series of 3 cases with acute abdominal pain as presenting feature which were initially presumed to have a surgical emergency but were later on diagnosed to have typhoid fever. Confounding presentations and unusual features can sometimes pose a diagnostic dilemma even in a common illness.

Key words: Children, abdominal pain, typhoid fever

INTRODUCTION

Typhoid fever is a common infectious illness of childhood particularly in tropical countries and is a major public health problem in India. Typically, fever, malaise, abdominal pain, diarrhea with blood in stools, and loss of appetite are the common presenting symptoms. However, there may be some confounding presentations without typical features, which may lead to delay in diagnosis. We report 3 cases without any significant history of pyrexia but abdominal pain as prominent presenting complaint. These cases were initially presumed to be surgical emergencies but were later diagnosed as typhoid fever.

CASE REPORTS

Case 1
A 5-year-old boy presented to the pediatric emergency with complaints of low-grade fever for 1 day. The systemic examination was normal. With a provisional diagnosis of viral fever, he was discharged on antipyretic medications. He presented to the emergency department again on day 4 of illness with complaints of diffuse pain in abdomen and nausea which persisted despite repeated symptomatic treatment. His fever had resolved since starting of the medications. He also received oral antibiotics for 2 days before presentation to us again, but discontinued on his own. Clinical examination did not reveal any organomegaly. An ultrasound of abdomen revealed the presence of minimal interloop bowel fluid. Routine investigations of blood and urine were inconclusive including tests for malaria. A typhidot IgM test was done on day 5 of illness, which turned out to be positive.

Case 2
A 12-year-old girl presented with acute pain on right side of abdomen with nonpassage of feces for 3 days. History revealed that she had fever which was documented to be...
102°F around 4 days back, which subsided on the same day with antipyretics. She had normal vital parameters. On examination, there was no organomegaly, but there was diffuse tenderness more so on right side of the abdomen. Her oral acceptance was poor. The patient was managed on symptomatic treatment with a presumptive diagnosis of acute appendicitis. An erect X-ray of abdomen was normal. An ultrasound of the abdomen ruled out any evidence of appendicitis. However, the pain persisted with almost same intensity, but the child also remained afebrile without medications. Routine investigations along with liver function test and kidney function tests were within normal range. A typhidot IgM test done on day 6 of illness was positive.

Case 3
An 8-year-old girl was referred from the surgical emergency with complaints of persistent abdominal pain for 6 days and nonpassage of feces for 3 days. She had been admitted with a provisional diagnosis of subacute intestinal obstruction and was treated symptomatically along with injectable antibiotics. However, skiagram of the abdomen showed only gas-filled bowel loops without any air fluid levels. She had a history of low-grade fever 8 days back for which some oral medications were given for 3 days after which fever abated. The pain in abdomen started on the 3rd day of illness but was not associated with vomiting or abdominal distension. On examination, diffuse tenderness was present around the periumblical region, but there was no organomegaly. An ultrasound examination of the abdomen was normal. Her routine laboratory tests were essentially normal. A Widal test was performed which was positive with a titre of T O 1:320 and T H 1:320. Serum electrolytes, random blood sugar, liver function test, and kidney function tests were in normal range. Blood culture was negative.

DISCUSSION
Typhoid fever is a common infectious illness of childhood particularly in resource-poor countries such as India, predominantly caused by *Salmonella typhi* followed by *Salmonella paratyphi* A.[3] The World Health Organization statistics estimate over 22 million cases annually, with at least 200,000 deaths.[2] Clinicians come across a wide variety of manifestations of both uncomplicated and complicated typhoid fever. Diagnosis is based on classical symptoms and signs aided by laboratory tests. But sometimes, unusual presenting features could be misleading, posing a diagnostic dilemma.[8] Fever is the most consistent feature in cases of typhoid fever and is found in all cases. During the course of typhoid fever, the invading bacteria localize in the ileum producing focal swelling of Peyer’s patches. Furthermore, focal necrosis and ulceration occur. Although abdominal pain is a recognized feature of typhoid fever, in our cases, there was an insignificant history of pyrexia and a distinct lack of other classical symptoms and signs. In a study of profile of 136 culture-proven typhoid fever cases, it was found that abdominal pain to be present in 21% cases.[4] The gold standard blood culture positive yield is variable and is dependent on prior administration of antibiotics. In our cases also blood culture was negative probably due to the prior use of antibiotics. Tests such as typhidot IgM and Widal are commonly used for the diagnosis, but even they have limitations. Therefore, clinical suspicion is very important in such cases.[4,5] The spectrum of radiological findings in typhoid fever is variable and no particular finding can be specifically attributed only to *Salmonella* infections. Common findings may be hepatosplenomegaly, thickening of the intestinal wall, inter-bowel loop fluid, mesenteric lymphadenopathy, ascites, acute acalculous cholecystitis, gallbladder wall thickening, etc.[6]

In our cases, the diagnosis was based on typhidot IgM and Widal test. A study for the evaluation of utility of typhidot IgM and Widal concluded that these tests may be suitable when pretest probability is high and blood cultures are unavailable.[7] In a meta-analysis, the sensitivity of TUBEX-TF ranged between 56% and 95% and specificity between 72% and 95%. For typhidot test sensitivity and specificity estimates ranged from 56% to 84% and 31% to 97%, respectively.[8] Since blood culture positivity is affected by various factors such as prior antibiotic therapy, rapid tests also offer an advantage in certain situations. In a comparative evaluation, the overall sensitivity, specificity, positive predictive value, and negative predictive value of the typhidot IgM test considering blood culture as gold standard were 97.29%, 97.40%, 98.18%, and 96.15%. Among blood culture-negative patients, rapid *Salmonella*-IgM[8] tests detected 72.25% additional cases of enteric fever. Hence, the utility of these tests cannot be totally ignored.

Untreated typhoid fever can have various surgical complications such as intestinal perforation and bleeding but these usually occur in the second or third week of illness. In our cases, the initial presentation was predominantly abdominal pain presumed to be a surgical emergency. All the cases were treated with injectable ceftriaxone as per protocol along with supportive therapy. The abdominal pain resolved within 2-4 days in all cases.

The diagnosis of a common illness can be delayed due to overwhelming acute symptoms at presentation without any typical features. Clinicians should have a high degree of clinical suspicion for timely diagnosis of cases of typhoid fever with atypical manifestations. Health education plays an important
role in the prevention of typhoid fever as poor
sanitation and hygiene are associated with higher
incidence of typhoid fever.\(^{[10]}\) Vaccination also provides
considerable protection.

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There are no conflicts of interest.

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