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A Case of Paratyphoid with Diarrhea as the Only Symptom in a 5 Year Old Boy from Southern Part of India

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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Case Study

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ABSTRACT

Paratyphoid fever is a systemic bacterial infection caused by bacteria Salmonella paratyphi serovars A, B, or C. It is most associated with travel to endemic areas but can occur sporadically in non-endemic areas. While the disease is more commonly seen in adults, it can occur in children, and the presentation can be variable. It is clinically difficult to differentiate Typhoid from Paratyphoid without isolation of organism. We present a case of a 5-year-old boy, from Telangana state of South India, who presented with watery diarrhea of 8 to 10 episodes per day and abdominal discomfort for 5 days. At presentation child had some dehydration and very poor oral intake. Child did not respond to standard acute gastroenteritis with some dehydration management and continued to have persistent loose watery stools. Routine blood investigations, urine and stool microscopy revealed normal study. Further evaluation in the second week of illness revealed

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paratyphi on stool culture, and the child started to respondwithsensitive antibiotic cefotaximeinjections after 3 days of starting. However the child did not have other classical symptoms caused by paratyphi, such as fever, vomiting, or rose spots. Other classical investigations like blood culture and urine culture were negative. This case highlights the importance of considering paratyphoid as a potential cause for persistent diarrhea, even in young children, and the importance of prompt diagnosis and treatment with appropriate antibiotics, especially in the absence of classical clinical or laboratory findings.

Keywords: Paratyphi; persistent diarrhea; watery diarrhea.

1. INTRODUCTION

Salmonella enterica serovar Paratyphi is a gram-negative bacterium responsible for causing paratyphoid fever, a systemic infection with clinical symptoms similar to those of typhoid fever. It can occur in both endemic and non endemic areas [1]. Paratyphoid fever is a common infectious disease in developing countries with poor sanitation and is typically transmitted through contaminated food or water.The clinical presentation of paratyphoid fever can vary [2], but usually includes symptoms such as fever, headache, abdominal pain, and diarrhea or constipation. Generalized malaise is another common symptom of the disease [3]. In severe cases, paratyphoid fever can progress to sepsis or meningitis, making it a potentially life-threatening condition [4].

Although the aforementioned symptoms are the most commonly reported clinical presentations of paratyphoid fever, some uncommon presentations have been reported in the medical literature. These can include osteomyelitis, endocarditis, and abscess formation in various organs [5,6].

The diagnosis of paratyphoid fever is typically confirmed through laboratory testing of blood, urine, or stool samples. Once diagnosed, treatment usually involves antibiotics such as ceftriaxone or azithromycin.We report a case of paratyphoid fever in a 5-year-old boy who presented with persistent diarrhea as the sole symptom and without fever.

2. CASE REPORT

We report the case of a 5-year-old boy who presented to our hospital- Surabhi Institute Of Medical Sciences, Telangana State from Southern part of India, in the month of June, 2022with watery diarrhea for 5 days with abdominal discomfort, loss of appetite and very poor oral intake. At presentation, child had clinical features of some dehydration.The stools were watery, non mucoid and non blood stained. The child had no history of recent travel, potential consumption of contaminated food or water, or contact with sick individuals. The initial management was done as per standard guidelines for acute gastroenteritis with some dehydration, but the frequency and consistency of stools did not improve even after 3-4 days of hospital stay. On the 9^{th} day of illness, the child was re-evaluated, and further investigations were done to identify the underlying cause of diarrhea.

Stool culture was performed, and the report revealed the growth of Salmonella enterica serovar Paratyphi A. The organism was confirmed by standard microbiological culture test, and antimicrobial susceptibility testing was done as per the Clinical and Laboratory Standards Institute guidelines. The isolate was found to be sensitive to cefotaxime, ceftriaxone, azithromycin, and chloramphenicol but resistant to ampicillin and trimethoprim-sulfamethoxazole.

The patient was started on intravenous cefotaxime at a dose of 100 mg/kg/day. The child's diarrhea and abdominal discomfort improved significantly after 3 days of initiating the therapy. However the poor oral intake of child continued for few more days and hence the child was continued on intravenouscefotaxime for a total of 14 days in view of brisk response in symptoms and sensitivity pattern. Throughout the hospital stay, child did not develop any other symptoms like fever, vomiting, or rose spots, which are typical clinical features of typhoid fever. Blood culture and urine culture were negative for any bacterial growth. The child's family members were also screened for any symptoms of diarrhea or fever, and they were found to be asymptomatic. Child was discharged from the hospital in a stable condition.

3. DISCUSSION

Salmonella paratyphi infection, commonly known as paratyphoid fever, is a systemic bacterial

infection that affects children worldwide. While paratyphoid fever is generally more common in adults, children can also be affected. The incidence of paratyphoid fever in children is significantly higher in endemic areas where sanitation is poor, and contaminated food and water are the major sources of infection [7]. Transmission of paratyphoid was more frequently observed outside the home (eg, via consumption of food purchased from street vendors), while transmission of typhoid was more frequently observed within the household (eg, via sharing utensils, presence of a patient with typhoid, lack of soap or adequate toilet facilities) [8]. Some data suggest that S.paratyphi may be more likely transmitted by contaminated food whereas S.typhi via contaminated water supply [9]. In our case, child comes from an endemic area for typhoid but uncommon for paratyphi.

The clinical features of paratyphoid fever in children are similar to those observed in adults. The most common symptoms include fever, headache, abdominal pain, nausea, vomiting, and diarrhea. However, children may present with a wide range of atypical clinical features that vary in frequency from adults [10], such as hepatosplenomegaly, pharyngitis, and a rash [11]. In our case, child never had any documented fever or afore mentioned typical symptoms but presented with persistent loose watery stoolsfor more than a week and abdominal discomfort. Initially the watery loose stools made us consider only viral diarrhea as the diagnosis. But as the child entered second week of illness with persistent loose stools and poor oral intake. Hence other causes including bacterial were consideredto be evaluated.

The diagnosis of paratyphoid fever in children can be challenging, as the symptoms can be non-specific, and laboratory testing may not always be positive.The diagnosis is made by isolating the causative agent, Salmonella paratyphi, from blood, stool, or other clinical samples. The most common diagnostic tests include blood culture, stool culture, and serological tests [12]. A positive blood culture is considered the gold standard for diagnosis, but stool culture can also be useful in cases where blood cultures are negative. In some older studies, it was shown the stool cultures were positive in up to 30-40 percent of cases. Serological tests, such as the Widal test, can be used as an adjunct to diagnosis, but are not considered definitive [13]. In our case, the blood culture was sterile, widal test was negative for O and borderline positive with 1:40 of H, AH & BH titres. Other routine evaluation reports turned out to be normal. The stool culture report came to be positive for Salmonella paratyphi, clinching the diagnosis or Paratyphoid.

The management of paratyphoid fever in children includes supportive care and antibiotics. The choice of antibiotic therapy should be based on the sensitivity of the infecting strain. Third-generation cephalosporins, such as ceftriaxone, are commonly used, but other antibiotics, such as fluoroquinolones and azithromycin, can also be effective [14]. Supportive care measures, such as hydration and pain relief, are essential in managing the symptoms of the disease.

4. CONCLUSION

Paratyphoid infection is a significant health concern in children, particularly in developing countries. The clinical features of paratyphoid fever in children can be variable, and atypical presentations can occur. Unusually prolonged loose stools and non response to standard management should make one consider bacterial causes like typhoid/paratyphoid despite absence of typical symptoms. High Index of suspicion in atypical symptoms, early diagnosis and appropriate antibiotic therapy are essential in managing the disease and reducing its complications.

CONSENT

As per international standard or university standard, patient(s) written consent has been collected and preserved by the author(s).

ETHICAL APPROVAL

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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