

## Terminal Ileal Bleed as Intestinal Complication of Enteric Fever – Symptomatic Management

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### Abstract

Enteric fever also known as typhoid fever is characterized by fever and abdominal pain, caused by *Salmonella typhi* and para typhi A and B and is well known for its disease course and complication. Intestinal complications are of much worrisome which might lead to mortality. Here we present a case of 50-year-old patient who presented with complaints of only fever and later developed abdominal pain, hematochezia and prompt diagnosis and timely management.

### Keywords

Fever, Abdominal pain

### Introduction

Enteric fever initially was known as typhoid fever due to its clinical similarity to Typhus fever, but later around 1860's is termed enteric fever due to its pathological association with enlarged peyer's patches and mesentric lymph nodes. It's a systemic illness characterized by fever, abdominal pain. The development of severe disease depends on host factors, strain virulence and inoculum and choice of antibiotic therapy. Gastro-intestinal bleeding and intestinal complication most commonly occur in the third and fourth week of illness, both of which are life threatening and require immediate fluid resuscitation and surgical intervention with broadened antibiotic coverage.

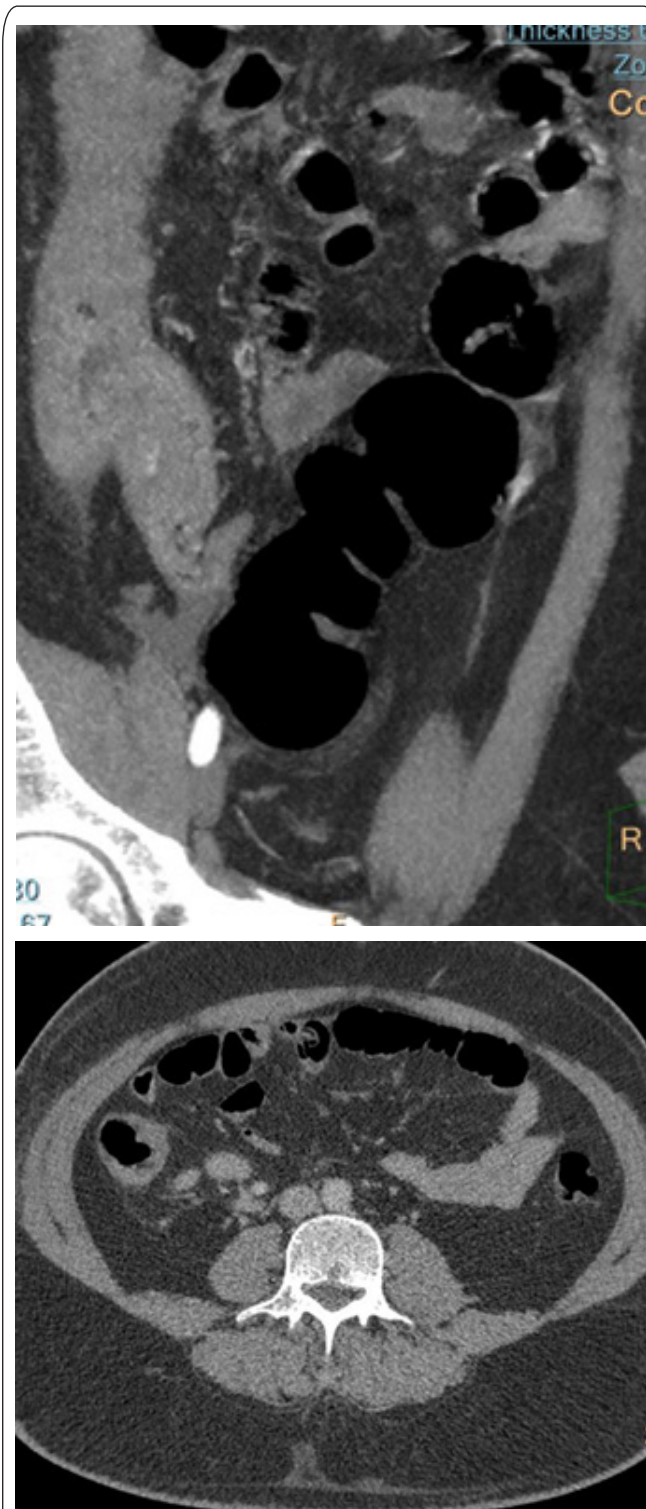
### Case Report

Here we present a case of 50 year old male with no known co-morbidities presented with complaints of fever and loose stools for 6 days, dry cough for 4 days and no other specific localizing symptoms, on general examination patient vitals were stable and initial routine investigations were within normal limits, had elevated CRP and blood culture was sent which showed growth of *Salmonella typhi* and started on iv antibiotics, probiotics, anti-pyretic, anti-tussive and other symptomatic treatment.

Complete blood picture (CBP) on subsequent days showed leucopenia and thrombocytopenia. Platelet transfusions were done as he had mild hemoptysis. Later on, 7<sup>th</sup> day of admission he had hematochezia (blood in stools) and later one episode of frank blood per rectum, prior to it he has abdominal pain. Emergency colonoscopy showed ulceration with large adherent clot (Figure 1).

### Cect Abdomen Findings

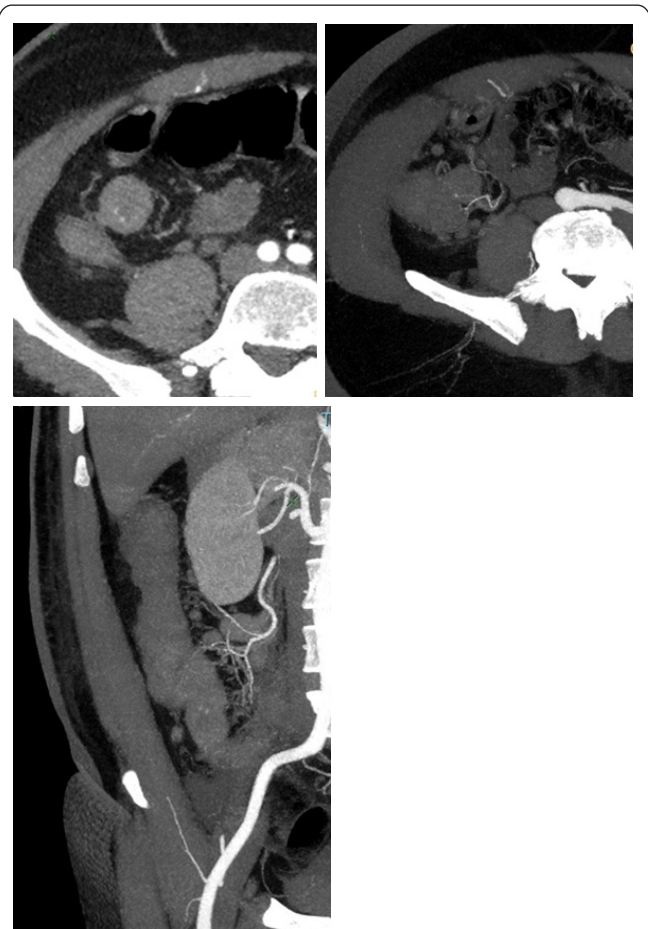
Mild circumferential thickening is seen involving the terminal ileum, the



**Figure 1:** Coronal and axial NCCT of abdomen showing circumferential thickening is seen involving the terminal ileum, the ileocecal junction and the cecum.

ileocecal junction, and the cecum. Hyperdense non-enhancing intraluminal lesion suggestive of adherent blood clot is seen within the terminal ileum measuring 1.8 x 1.8cms. Adjacent prominent enhancing artery is seen within the wall of the terminal ileum in the submucosal region (Figure 2).

Multiple enlarged discrete ileocolic lymphnodes are seen, largest measuring 2.5 x 2.0cms. Small omental enhancing soft tissue nodule is seen in the right iliac fossa measuring 8mm.



**Figure 2:** Axial contrast enhanced MIP images shows Hyperdense non-enhancing intraluminal lesion suggestive of adherent blood clot is seen within the terminal ileum measuring 1.8 x 1.8cms. Adjacent prominent enhancing artery is seen within the wall of the terminal ileum in the submucosal region.

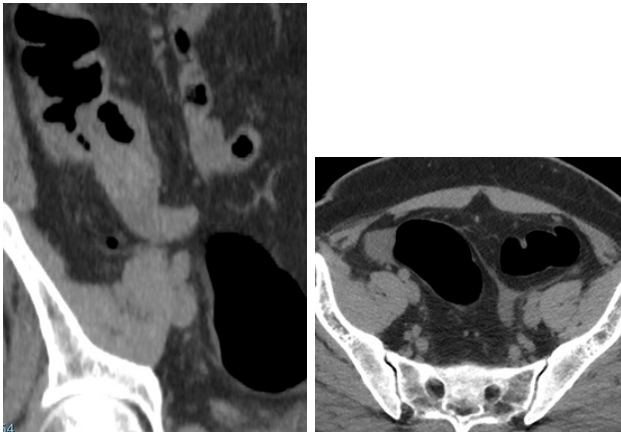
Patient was managed symptomatically with adequate fluid resuscitation and was hemodynamically stable all through the event and was kept under strict medical observation for any uneventful complications and surgical intervention (Figure 3).

Patient had hemochezia and no frank blood for 2-3 days, multiple platelet transfusions and later hemochezia subsided, and platelet count improved and was discharged later (Figure 4).

## Discussion

Enteric fever consists of typhoid (caused by *Salmonella typhi*) and para-typhoid (*S. para typhi* A and B) fevers. All salmonella infections begin with ingestion of organisms, most commonly in contaminated food or water. The infectious dose ranges from 200 colony forming units CFU to 10<sup>6</sup> units, and the ingested dose is an important determinant of incubation period and disease severity [1]. Simple measures such as washing hands before and after eating, maintaining proper sanitation measures, chlorination of drinking water decreases transmission of enteric fever.

Enteric fever complications can occur in any organ of the body [2]. The important gastrointestinal manifestations



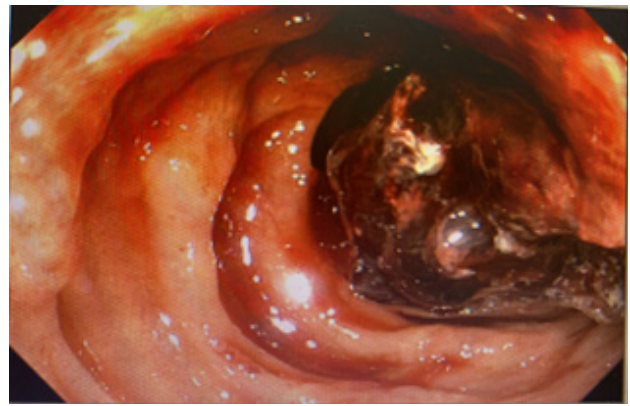
**Figure 3:** Saggital and Axial NCCT abdomen shows Multiple enlarged discrete ileocolic lymphnodes are seen, largest measuring 2.5 x 2.0cms. Small omental enhancing soft tissue nodule is seen in the right iliac fossa measuring 8 mm.

include anorexia, abdominal pain, nausea, vomiting, diarrhea more common than constipation, signs of hepatosplenomegaly, jaundice, hemorrhage, intestinal perforation and acalculous cholecystitis [1, 3]. Less commonly it causes cholestatic hepatitis, transaminitis, serositis and peritonitis. Gastrointestinal hemorrhage evolves through four classic pathologic stages: [1] hyperplastic changes, [2] necrosis of the intestinal mucosa, [3] sloughing of the mucosa and [4] the development of ulcers [3].

As the clinical presentation of enteric fever is nonspecific, the diagnosis needs to be considered in any febrile traveler returning from a developing region, especially Indian subcontinents, Philippines or Latin America. Till date positive culture is specific laboratory investigation available. Widal serologic test for febrile agglutinins is simple and rapid but has limited specificity and sensitivity, particularly in endemic regions. In some patient's leucopenia and neutropenia are seen, but leucocytosis is seen in children for first 10 days and in case of complicated by intestinal perforation or secondary infection [1].

The sensitivity of blood culture for enteric fever is around 40-80%, because of misuse of antibiotics in endemic areas and presence of very low levels of *S. typhi* in blood. Bone marrow examination can be done but has variable sensitivity and levels of *Salmonella typhi* are high compared to blood and prior use of antibiotics doesn't affect the examination much. In children there are high incidences of stool culture being positive compared to adults and mostly seen in third week of illness [4].

Treatment initially included was use of Fluroquinolones (Ciprofloxacin and ofloxacin) as the first line of drugs with curative rates of approximately 98% and relapse and fecal carriage rates <2% 1,5. However due to high incidences of fluroquinolone drug resistance in many parts of Indian subcontinent, Nepal and some parts of Africa, fluroquinolones are no longer used as empirical treatment. In such cases cephalosporins (Ceftriaxone, Cefotaxime, oral Cefixime) and Azithromycin may be used1.



**Figure 4:** Emergency Colonoscopy shows ulceration of terminal ileum with large adherent clot.

## Conclusion

Enteric fever in its mild form is manageable as op basis with prompt diagnosis and antibiotics, but should be monitored carefully in patients with persisting abdominal discomfort, pain, vomiting for the complications mostly in second to third week of illness as early management and intervention can be lifesaving.

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