

Caecal and Colon Rupture Due to Thyphoid Fever in A 22 Years Old Male, A Rare Complication: A Case Report

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ABSTRACT

Typhoid fever is an acute infection caused by *Salmonella typhi*, especially when it is waterborne or foodborne. The most common laboratory diagnosis of typhoid/enteric fever comprises clinical specimens such as blood, stool, urine, and bone marrow; the polymerase chain reaction; and the Widal test. The primary clinical symptoms of typhoid/enteric fever are high-grade fever, chills, stomach discomfort, tachycardia, generalized body pain, back pain, and headaches. Intestinal perforation is one of the most dangerous complications of typhoid fever and demands urgent hospitalization, diagnosis, and surgical management to reduce morbidity and prevent mortality. The mechanism whereby infection results in perforation is due to bacterial attachment and invasion, causing subsequent hyperplasia and necrosis of the immune sentinel microfold cells, anatomically visible in Peyer's patches. The usual site of perforation is at the anti-mesenteric border of the ileum; however, other sites can also be affected such as the cecum, jejunum, colon. Ciprofloxacin is a fluoroquinolone antibiotic that is the preferred treatment for typhoid fever.

Our case was a 22 years old male with fever for 10 days and referred to surgery part with acute abdominal presentation and positive Widal test. In laparotomy Caecal and Colon rupture was found and right hemicolectomy did for him and we did treatment of typhoid fever and we save his life.

A right hemicolectomy is recommended for caecal typhoid perforations especially when it is associated with extensive inflammation, necrosis and peritoneal soilage. This case report was submitted in accordance with the SCARE criteria [7].

Keywords: Typhoid Fever, *Salmonella Typhi*, Caecal Perforation, Colon Perforation, Complication

Introduction

Typhoid fever is an acute infection caused by *Salmonella typhi*, especially when it is waterborne or foodborne [1]. Typhoid/enteric fever occurs as a result of contaminated water and food caused by *Salmonella typhi* [2]. Typhoid/enteric fever is a major cause of morbidity and mortality across the globe [3]. High-grade fever, chills, headache, tachycardia, joint weakness, back pain, and abdominal pain are the main clinical manifestations of typhoid/enteric fever [4,5]. The most common laboratory diagnosis of typhoid/enteric fever comprises clinical specimens such as blood, stool, urine, and bone marrow; the polymerase chain reaction; and the Widal test [6]. For the management of typhoid fever, ciprofloxacin was initially given to treat typhoid fever by inhibiting deoxyribonucleic acid replication of *S. typhi* and preventing *S. typhi* deoxyribonucleic acid topoisomerase and deoxyribonucleic acid gyrase [7]. This case report was

submitted in accordance with the SCARE criteria [7]. Water and food contaminated with *Salmonella enterica* serotype Typhi (*S. Typhi*) are the main causes of typhoid/enteric fever [9]. Globally, typhoid/enteric fever is a leading cause of morbidity and mortality with the prevalence of culture-confirmed typhoid fever being 6.5% in the studies [10]. The primary clinical symptoms of typhoid/enteric fever are high-grade fever, chills, stomach discomfort, tachycardia, generalized body pain, back pain, and headaches [11]. Clinical samples such as blood, stool, urine, bone marrow, polymerase chain reaction, and the Widal test (obsolete now) are used in the most common laboratory diagnosis of typhoid/enteric fever [12]. Blood culture is the most specific test although time consuming. Ciprofloxacin was first prescribed to treat typhoid fever which works by preventing *S. Typhi* DNA topoisomerase and DNA gyrase from replicating DNA, which is how typhoid spreads [13]. *S. Typhi* is the agent of typhoid/enteric fever, which is primarily a bloodstream infection. Typhoid diseases have been linked to travel histories in developing nations owing to tainted food and contaminated

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water supplies [9]. Intestinal perforation is one of the most dangerous complications of typhoid fever and demands urgent hospitalization, diagnosis, and surgical management to reduce morbidity and prevent mortality [10]. Estimates of typhoidal intestinal perforation (TIP) incidence in developed and resource-poor countries vary widely from 0.8% to 39%, [11,12,13]. Intestinal perforation is a devastating complication of typhoid fever and the most common cause of death. The mechanism whereby infection results in perforation is due to bacterial attachment and invasion, causing subsequent hyperplasia and necrosis of the immune sentinel microfold cells, anatomically visible in Peyer's patches [14]. The usual site of perforation is at the anti-mesenteric border of the ileum; however, other sites can also be affected such as the cecum, jejunum, colon [14]. Caecal and colonic perforations have been documented as rare, occurring in 0.05% to 3% of typhoid intestinal perforations [15,16].

Case Presentation

This case is a 22 years old male with history of fever from 10 days before and diarrhea. We start liquid therapy and lab datas that shows Widal test is positive. Our patient has fever, generalized abdominal pain and peritonitis. We performed a surgery and we find caecal perforation (figure1). And in continuous we find that right colon is perforated too (figure2). We find necrotizing and a lot of perforation in large and small size in colon (figure3). Small parts of necrotizing is based on right colon (figure4). We did right hemicolectomy for him and start treatment of thyphoid fever for him with standard protocols that Ciprofloxacin is a fluoroquinolone antibiotic that is the preferred treatment for typhoid fever. After course of medical treatment, we discharge him healthy.

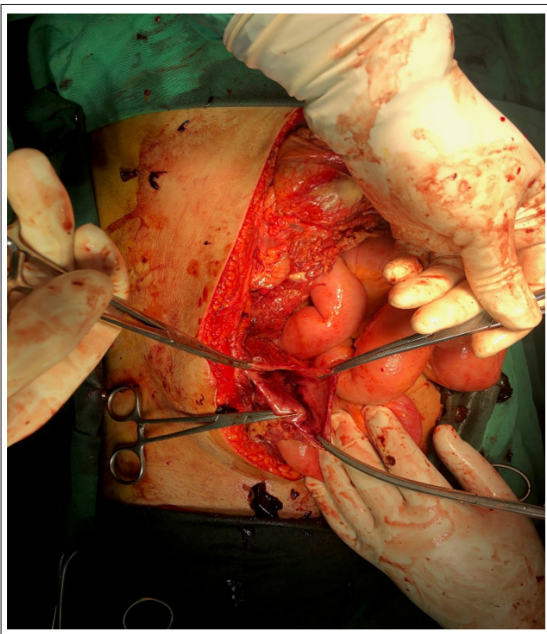


Figure 1: Caecal Perforation



Figure 2: perforation of ascending colon



Figure 3: Perforation and necrotizing in colon



Figure 4: Necrotizing parts of right colon

Discussion

Typhoid fever is an acute infection caused by *Salmonella typhi*, especially when it is waterborne or foodborne [1]. Intestinal perforation is one of the most dangerous complications of typhoid fever and demands urgent hospitalization, diagnosis, and surgical management to reduce morbidity and prevent mortality [10]. Estimates of typhoidal intestinal perforation (TIP) incidence in developed and resource-poor countries vary widely from 0.8% to 39%, [11-13]. Intestinal perforation is a devastating complication of typhoid fever and the most common cause of death. The mechanism whereby infection results in perforation is due to bacterial attachment and invasion, causing subsequent hyperplasia and necrosis of the immune sentinel microfold cells, anatomically visible in Peyer's patches [14]. The usual site of perforation is at the anti-mesenteric border of the ileum; however, other sites can also be affected such as the cecum, jejunum, colon [14]. Caecal and colonic perforations have been documented as rare, occurring in 0.05% to 3% of typhoid intestinal perforations [15,16]. A right hemicolectomy is recommended for caecal typhoid perforations especially when it is associated with extensive inflammation, necrosis and peritoneal soilage [17].

Conclusion

Typhoid fever is an infection of the intestinal tract and bloodstream caused by the bacteria *S. typhi*. Typhoid fever has been associated with travel history in underdeveloped countries because of unsafe drinking water sources and eating contaminated food [1]. The presence of H and O serum agglutinins in the patient's serum was investigated by a Widal test. In underdeveloped countries, the Widal test is frequently performed because it is cheaper, easier to perform, and does not require microbiology experts. Ciprofloxacin is a fluoroquinolone antibiotic that is the preferred treatment for typhoid fever [1]. Typhi is the agent of typhoid/enteric fever, which is primarily a bloodstream infection. Typhoid diseases have been linked to travel histories in developing nations owing to tainted food and contaminated

water supplies. The usual site of perforation is at the anti-mesenteric border of the ileum; however, other sites can also be affected such as the cecum, jejunum, colon [14]. Caecal and colonic perforations have been documented as rare, occurring in 0.05% to 3% of typhoid intestinal perforations [15,16]. A right hemicolectomy is recommended for caecal typhoid perforations especially when it is associated with extensive inflammation, necrosis and peritoneal soilage [17].

Declarations

Ethical Approval and Consent to participate: The content of this manuscript is in accordance with the declaration of Helsinki for Ethics. No committee approval was required. Oral and written consent to participate was granted by his family.

Consent for Publication: "Written informed consent was obtained from the patient's legal guardian for publication of this case report and any accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal."

Availability of supporting data: It is available.

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Acknowledgements: In abdomen you can face with verified problem and should notice to scrotum in examination of patient with abdominal pain.

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