Typhoid Ileitis with Periappendicitis: A Case Report

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Abstract

Introduction: Typhoid fever usually presents with prolong fever associated with constitutional symptoms of headache and abdominal pain. Patients living in far flung areas often downplayed this condition with a viral infection causing delay in diagnosis. We present a case of a 30-year-old male diagnosed with typhoid fever who developed upper gastrointesitinal bleeding with intraoperative finding of periappendicitis.

Case presentation: This is a case of a 30-year-old male patient presented in the emergency room with abdominal pain and high fever for three weeks. Physical examination showed he was fairly dehydrated with dry lips and tongue and abdominal examination revealed epigastric pain on deep palpation. Initially, his laboratory tests were unrevealing. Over the course of his confinement he was given multiple transfusion due to profused hematochezia and with sudden reduction in hematocrit count thus was referred to surgical service for emergency laparotomy. Intraoperative findings showed bleeding ulcers in the ileum accompanied by histologic findings of periappendicitis which originally thought of as acute suppurative appendicitis.

Conclusion: It is important to consider in patients with three or more weeks with typhoid fever its complications of intestinal bleeding. However, the finding of periappendicits contributes a rare and not easily diagnosed pathology which is not within the context of an enteric infection.

Keywords: case report ileitis, typhoid ileitis, periappendicitis, typhoid fever, salmonella

Introduction

Enteric fever is still a major health hazard especially in developing world. The diagnosis of enteric fever on clinical presentation alone is difficult, as the presenting symptoms are likely similar with other febrile diseases. Therefore, laboratory test are necessary to support the diagnosis. According to the World Health Organization guidelines for the treatment of typhoid fever, acute typhoid fever may be severe, with up to 10% of patients developing serious complications. Yet the course of the disease may not be apparent until frank clinical findings as well as aberration in laboratory tests could compromise a patient's condition. This is a case of a 30-year-old male with typhoid fever, initially had long term febrile episodes for three weeks associated with abdominal pain, diarrhea, and body malaise, who unexpectedly presented with massive lower intestinal bleeding with intraoperative finding of acute appendicitis yet reported a histologic finding of periappendicitis. This would correlate that enteric infection can cause inflammation of the appendix as a secondary insult.

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Case presentation

A 30-year-old male was admitted at Visayas Community Medical Center Cebu City for persistent fever that lasted for three weeks. This was associated with vomiting, headache and abdominal pain. Patient had no comorbid background with no prior history of past surgery. He denies any vices and works as a warehouse labourer. He had no history of heredofamilial disease. Around three weeks ago, patient noted persistent high fever, he self-medicated with paracetamol with modertae effect. He had no record of seeking medical consult. This condition drag on for the next two weeks but he already noticed that on top of the high fever and rigors, he had been experiencing abdominal pain with increasing severity.

A week before he decided to seek confinement he noted dark colored stools with pain noticeable in the epigastric area with a pain score of seven out of 10, intermittent but not colicky in nature. It sometimes radiate in the mid umbilicus. He was then seen by a physician in a

local district hospital where he was given ciprofloxacin at a dose of 500mg twice daily together with a typhidot test which was positive for IgG. A few hours before he went to the ER, he had bouts of vomiting, increased loose watery stools but claimed there was no presence of blood. The consistent high temperature and the abdominal pain prompted the patient to get admitted.

At the emergency room (ER), he was awake, not in distress with a blood pressure of 120/70 mmhg, heart rate of 126 beats per minute with regular rhythm, respiratory rate of 21 bpm and was febrile of 38.9°C. Upon physical examination revealed dry lips and tongue. Pulmonary examination and cardiovascular findings were unrevealing except for abdominal examination showing soft epigastric tenderness (pain score–5/10) on direct palpation with radiation to the mid umbilicus, bowel sounds were normoactive. No organomegaly was elicited. Differential diagnosis would include amoebic abscess, infectious liarrhea, and intrabdominal infection. Initial laboratory tests results came back with a normal white blood cell (WBC) count with neutrophil predominance. Other biochemistry tests were unremarkable except for hypokalemia of 3.0 mEq/L. He was scheduled for an ultrasound of the abdomen the next day. Ceftriaxone 2.0g intravenously daily was started.

The following day the patient had sudden onset of melena associated with mid-umbilical to hypogastric pain. Pain was no longer appreciated at the epigastric area. This prompted a stat referral to a gastroenterologist where a colonoscopy was performed. During the procedure, presence of mucosal ulcer was seen at the ascending colon but no bleeding was ever found. A repeat complete blood count (CBC) reported a reduction of the hemoglobin of 6 g/dl, which prompted blood transfusion to correct the anemia.

A few hours after patient had five episodes of hematochezia this time was accompanied with hypotension with a blood pressure of 80/60 mmhg. Inotropic support was started on top of the RBC transfusion. With no diminution of the intestinal bleeding and the periumbilical pain the medical team resorted to refer to surgical service for possible intervention. This was decided then to proceed with emergency exploratory laparotomy.

During operation, there was obvious mucosal edema in the terminal ileum and in the ileocecal junction (see Figure 1) and noticeable enlargement of the lymph nodes on the mesentery (Figure 2). Upon inspection revealed multiple punched out ulceration in the region (Figure 3). Further findings showed of an acute process of appendicitis grossly seen to be inflamed and hypertrophied (Figure 4 and Figure 5). Specimens where taken for biopsy. The histopathologic findings reported that the ulcers in the ileum and ascending colon were consistent with typhoid ileitis showing base granulation tissue of the ulcers with lymphoplsmacytic infiltrates in the lamina propia and serosal layer. Appendiceal

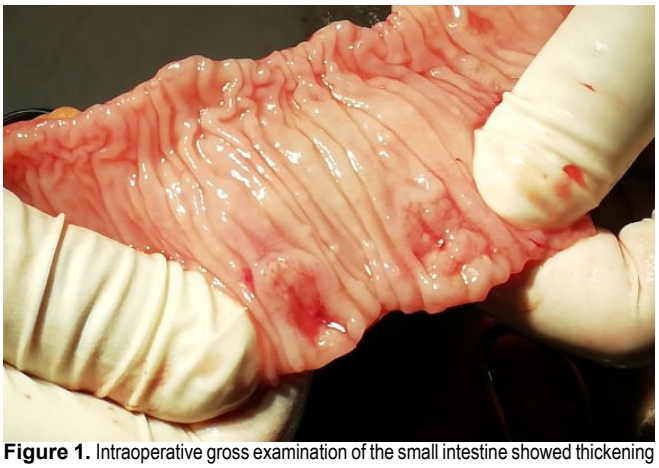

Figure 1. Intraoperative gross examination of the small intestine showed thickening of the distal ileum with multiple punched out ulcerations in the region of Peyer's patches consistent with typhoid ileitis

Figure 2. There is a 10mmx3mm mucosal punched-out ulcer noted 50mm and 10mm from the margins of resection

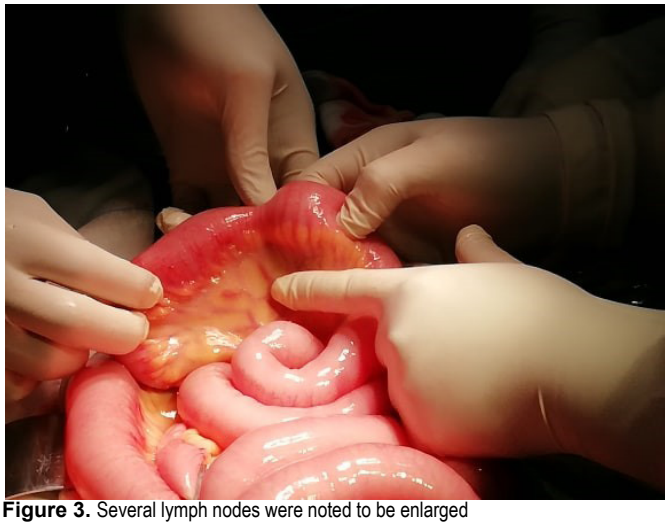

Figure 3. Several lymph nodes were noted to be enlarged

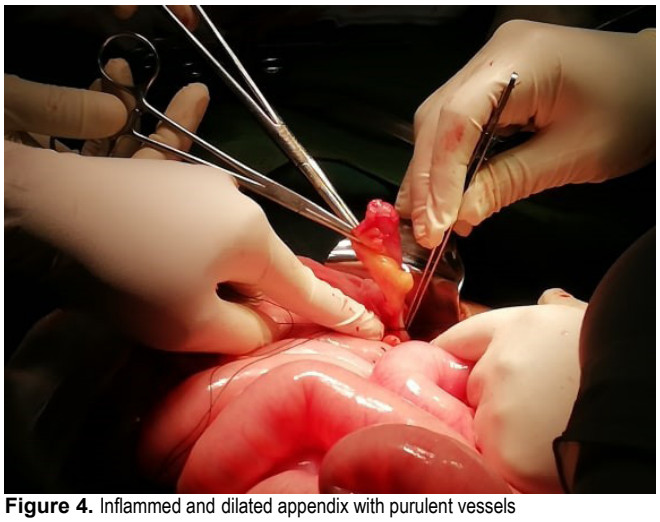

Figure 4. Inflammed and dilated appendix with purulent vessels

Figure 4. Dilated appendix with purulent vessels

histopathologic report showed findings of periappencitis. These was described as lymphoid hyperplasia and chronic inflammatory cells like lymphocytes and plasma cells in the serosal layer which would point to a periappendiceal involvement.

After his operation, there was a dramatic improvement of the patient's vital signs, his haemoglobin count was improving as well as normalization of his vital signs. He stayed for the duration of the rest of the antibiotic course and was discharged with no recurrence of fever or abdominal complaints.

Discussion

The patient was brought to the ER for the complaints of high fever and abdominal pain. The association of both symptoms can be seen in patients who have lapse with the infection by the third week of enteric (typhoid) fever with high risk of intestinal bleeding. Enteric fever by definition is a multisystemic disease caused by dissemination of salmonella typhi or salmonella paratyphi. In the Philippines, based on the Department of Health data, a total of 27,106 cases of Typhoid fever was recorded from January 1 to December 3, 2016.[1]

With such a protean presentation, fever is widely documented at presentation in >75% of cases, followed by abdominal pain about 30–40 percent of the time. Other gastrointestinal manifestations included anorexia (55%), abdominal pain (30–40%), nausea (18–24%), vomiting (18%), and diarrhea (22–28%) more commonly than constipation (13–16%) have also been documented.[2] The dilemma in considering the severity of the enteric infection and the inclusion within the differential of an abdominal insult one would only think of the more obvious complication of ileitis. Upon the manifestation of an upper gastrointestinal bleeding will allow the clinician to zoom in on the impression of a bleeding ulcer and limits its consideration on the possibility of another organ involved.

The fact of an overlapping abdominal symptoms of a typhoid ileitis and appendicitis is very difficult, it may be positively missed during physical examination. The abdominal signs of an obvious epigastric pain initially within the first few hours from admission to the migration of pain to the mid umbilicus can easily be entertained for appendiceal involvement if there was no other ominous abdominal problem was considered. Would salmonella induced appendicitis be a possibility? Salmonella infection can itself cause appendicitis by direct invasion of the appendix, or can mimic appendicitis by causing mild inflammation of the appendix, ileum, or lymph nodes. Clinical presentation and radiologic and laboratory evaluation may not distinguish the extent of underlying pathology.[3] However, as a single entity, periappendicitis by itself is found in one to five percent of appendices resected for clinically acute appendicitis.[4]

The histologic finding of periappendicitis on this case profoundly points out its unusual involvement. This finding is not fairly common with typhoid ileitis and carries an incidence of only 5.4 %. This pathology describes appendiceal serosal inflammation with no mucosal involvement. The literature states it to be a rare pathology, difficult to diagnose and carry a high burden of morbidity.[5]

It has two types of classifications, namely juvenile and secondary. The juvenile form, would come from previous episodes of appendicitis with resolution of mucosal inflammation. Secondary periappendicitis complicates concurrent intra-abdominal infections or other inflammatory conditions of which this case could be attributed to salmonella.

Looking at the largest known study of patients by Van noyen et al. on culture-proven bacterial enteritis presenting with appendicular symptoms have presented only a small fraction had histologically proven acute appendicitis around 8% for salmonella species.[6]

Treatment would always be geared towards eliminating the infection and preventing its complication. For cases such as this, urgent referral to surgical service is manadatory to curb impending vascular collapse due to hypovelomia from the bleeding intestinal ulcers. Patients with severe typhoid fever should be started with third generation cephalosporin antibiotics.

After discharge, patients should be monitored for relapse or complications for three months after treatment has commenced. Five to ten per cent of patients experiences relapse of typhoid fever after initial recover. A relapse of typhoid fever is generally milder with shorter duration than the initial illness, and between 0% and 5.9% of treated patients become chronic carriers. Therefore, after disease resolution, three stool cultures in one-month intervals should be performed to rule out a carrier state.[7]

Conclusion

This case is an example of typhoid fever seen during admission on its third week of illness with complications of unlikely consequence. Hematochezia was evident during confinement and signal the involvement of intestinal ulceration and near perforation. However the severity of the abdominal infection and overlapping symptoms of another intrabdominal pathology should never be ruled out.

Association between typhoid infection and periappendicitis are usually rare and would happen either by direct invasion of the appendix or mimics appendicitis like pain by causing inflammation of the mucosa. Either way its clinical presentation, together with laboratory test and modality does not quantify its extent of the disease. Categorized as secondary cause of appendicitis because of intraabdominal infection from a systemic involvement of salmonella infection.

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