CASE REPORT

Typhoid fever with caecal ulcer bleed: managed conservatively

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SUMMARY

Typhoid fever is caused by enteroinvasive Gram-negative organism *Salmonella typhi*. The well-known complications of typhoid fever are intestinal haemorrhage and perforation. In the pre-antibiotic era, these complications were quite common, but in the current antibiotic era the incidence of these complications is on the decline. We report a case of a patient with typhoid fever who developed haematochezia during the hospital stay and was found to have caecal ulcer with an adherent clot on colonoscopy. He was managed successfully with conservative measures without endotherapy and there was no rebleed.

BACKGROUND

Intestinal haemorrhage is one of the known complications of typhoid fever which usually occurs at the third week of illness. Bleeding occurs from the typhoid ulcers when the adjacent vessels are eroded. The frequent site of intestinal haemorrhage is the terminal ileum and bleeding from a caecal ulcer is rather uncommon. Literature regarding colonoscopic findings in typhoid ulcer bleeding is rare and especially demonstrating sign of recent haemorrhage in the form of adherent clot is extremely rare. Hence, the decision on endotherapy in patients with typhoid ulcer bleed showing an ulcer with an adherent clot is not clearly known.

CASE PRESENTATION

A 20-year-old man presented with a history of fever of 3 weeks' duration. The fever was intermittent, high grade, associated with chills and rigour. On investigation, he was found to suffer from anaemia (haemoglobin of 8.6 mg/dL), with deranged liver function test (total bilirubin 5.3 mg/dL; direct bilirubin 4.7 mg/dL, serum glutamic oxaloacetic transaminase (SGOT) 345 IU/L, serum glutamic-pyruvic transaminase (SGPT) 299 IU/L, alkaline phosphatase 813 IU/L, T protein 5.4 g/dL, albumin 2.3 mg/dL). The Widal test was significantly positive (H antigen was positive in a titre of 1:320 and O antigen in 1:160) and the blood culture revealed the growth of *S typhi* and he was started on injection ceftriaxone. Two days after admission, he developed an increased frequency of stools with haematochezia and his haemoglobin dropped to 6.6 g/dL; however, he did not have any giddiness, loss of consciousness and was haemodynamically stable except for tachycardia (98/min).

A possibility of typhoid ulcer bleed was considered, and since he was haemodynamically stable, he was managed conservatively. Two units of blood transfusions were given and antibiotics were continued following which there was no further drop in the haemoglobin and his stool frequency decreased. Colonoscopy was performed electively to know the site of the bleed and to plan further management in case there was a rebleed. Colonoscopy revealed multiple punched out ulcers of varying sizes starting from the hepatic flexure extending into the ascending colon, caecum and terminal ileum (figures 1 and 2). All the ulcers had a clean base except for an ulcer in the caecum which had an adherent clot, suggesting that the bleed was from that caecal ulcer (figure 3 and video 1). Since there was no active bleeding, endoscopic intervention was not performed. The patient then gradually improved and he was discharged after 7 days, and on the day of discharge his haemoglobin was 10.7 g/dL and liver function test (LFT) was normal.

DISCUSSION

S typhi is an enteroinvasive Gram-negative bacillus that causes typhoid fever. The orally ingested bacillus invades the small bowel mucosa and through the lymphatics and bloodstream reaches the reticuloendothelial cells. They reside in the reticuloendothelial system and then multiply and emerge after several days as recurrent waves of bacteraemia and infect various organs, which hallmark the symptomatic phase of infection. During this phase, there is hyperplasia of the reticuloendothelial system including the lymph nodes, liver and spleen. In the gastrointestinal tract, the terminal ileum is

Figure 1 Endoscopy picture showing multiple ulcers in the ascending colon.

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Figure 2 Endoscopy picture showing a large punched out ulcer in the terminal ileum.

Video 1 Ileocolonoscopy video showing multiple ulcers of varying sizes involving the ascending colon, caecum and terminal ileum with an ulcer in the caecum having an adherent clot.

predominantly involved since it has abundant lymphoid follicles (Peyer's patches). There is hyperplasia of the lymphoid follicles in the terminal ileum which may subsequently ulcerate. According to a study by Lee *et al*,¹ of seven patients with typhoid fever and lower gastrointestinal (GI) bleed, terminal ileum was involved in all the patients (100%), followed by the ileocaecal valve (57%), ascending colon (43%) and transverse colon (29%). The ulceration can penetrate the submucosa and may enlarge in size and if they erode a vessel they can cause severe bleeding. The ulcers also make the bowel wall thinner, and hence they are at risk of perforation. In the past, the incidence of lower GI bleeding was seen in about 12.5% and perforation was seen in 3.3% of the patients, but now, in the present antibiotic era, the incidence has decreased.² The terminal ileum is the usual site of bleeding in typhoid fever and a caecal ulcer bleed is rather uncommon, but a few cases of caecal ulcer bleed have been reported earlier.^{3–7} This complication usually occurs during the third week of illness.

Most of the typhoid ulcer bleeds are managed conservatively. Intervention is required when the bleeding is life-threatening and massive. In the past, these massive ulcer bleeds were managed with right hemicolectomies.^{5 8 9} With the advancement in the field of medicine, newer modalities such as angiographic localisation of the bleeding vessel with coil embolisation

were performed successfully, and currently, the endoscopic mode of haemostasis has become the standard for management of these ulcer bleeds.^{1 3 10 11} Endoscopy can identify the bleeding spot, and if there is active bleeding, endoscopic modalities of treatment in the form of adrenaline injection, thermal coagulation or application of hemoclips may be performed alone or in combination, based on the need, the latter being the better option. However, the literature regarding the use and success of these endoscopic modalities in case of a typhoid ulcer bleed is scarce. Recently, in the largest series of typhoid ulcer bleeds reported from a single centre, out of seven patients, only one showed active bleeding on endoscopy for whom endoscopic haemostasis was performed twice and all the remaining six patients were managed conservatively.¹ In our patient, endoscopy revealed multiple punched out ulcers of varying sizes involving the ascending colon, caecum and terminal ileum, with an ulcer in the caecum having an adherent clot suggesting that the bleed was from that caecal ulcer. Since there was no active bleeding, endoscopic therapy was not performed. The patient was managed conservatively with antibiotics and there was no rebleed from the ulcer.

The role of endotherapy is controversial in case of an ulcer which has bled and shows an adherent clot on endoscopy. There is ample literature available for gastric and duodenal ulcers with adherent clots, but it is not available for colonic ulcers. In case of gastric and duodenal ulcers with an adherent clot, the chance of rebleeding is 30–35% if they are managed medically without endotherapy.¹² Studies have also shown that endotherapy in such cases of adherent clot will reduce rebleeding to 5% but does not affect the mortality rates.¹³ Since there is no literature available for colonic ulcer with an adherent clot, we decided to manage the patient medically without endotherapy, considering the fact that the patient was haemodynamically stable and there was no further drop in haemoglobin. Our patient also had hepatitis with jaundice, which is seen in 12.2% of patients with typhoid fever.¹⁴ With antibiotics and other conservative measures, the LFT normalised completely in 7 days at the time of discharge. This was an additional clinical spectrum of typhoid fever seen in our patient apart from ulcer bleed and we could not find any literature showing any association between hepatitis and ulcer bleeding in typhoid fever.

Figure 3 Endoscopy picture showing caecal ulcer with an adherent clot.

Learning points

- ▶ Caecum and ascending colon ulcers are also common in typhoid fever apart from the terminal ileum.
- ▶ Early ileocolonoscopy helps in identifying the site of bleed in patients with typhoid presenting with lower gastrointestinal (GI) bleed and may provide an option for therapy if required.
- ▶ Most of the typhoid ulcers may be managed conservatively and endoscopic intervention may be required only in patients with active bleeding on endoscopy.
- ▶ Caecal ulcer with an adherent clot found on endoscopy following a lower GI bleed in a haemodynamically stable patient with typhoid fever may be managed conservatively without endotherapy. There was no rebleeding; however, further case reports/studies are required to confirm our observation.

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Competing interests None.

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