Life Threatening Bleeding Tuberculosis Cecal Ulcer Managed with Hemostatic Clipping – A Case Report

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Massive life threatening lower gastrointestinal bleeding in adolescent is rarely being reported. Although mostly all life threatening lower gastrointestinal bleeding end up with laparotomy and hemicolecotomy, however, few literatures have reported successful management using endoscopic modalities such as achieving hemostasis by endoscopic hemoclip. We are presenting a case report of a 14-years-old Sabahan girl who presented with acute life threatening massive lower gastrointestinal bleeding. We had investigated her with a computed topography scan (CT) of abdomen and pelvis which confirmed active bleeding from the ascending colon, and suspicious features of tuberculosis (TB) of the colon. The patient was treated successfully via colonoscopy with deployment of hemostatic clipping and adrenaline injection on the cecal ulcer done under a controlled environment in the operating theatre. She subsequently progressed well and completed treatment of 6-month anti-tuberculosis. The patient was stable and reported no further symptoms during follow-up time for 1 year.

Keywords: Endoscopic; Hemostasis; Gastrointestinal hemorrhage; Tuberculosis of gut; Gastrointestinal tract; Cecal ulcer; Hemoclip; Sabah; Borneo

1. Introduction

For more than 40 decades, endoscopic clipping procedure has become available worldwide with continuous improvement of the technology for used in various kind of cases. It was developed by Hachisu in cooperation with Olympus Co. Ltd. (Japan) in the 1980s for better tools in managing bleeding in gastrointestinal system [1]. Various studies have shown that clipping is effective in managing gastrointestinal bleeding. There are various causes of gastrointestinal bleeding and one of it is ulcers of the colon, particularly cecal ulcer. Cecal ulcer is an uncommon cause of gastrointestinal hemorrhage and it can be caused by many, and one of it is infection. One can present with minimal symptoms while some of them may present with life-threatening bleeding which require massive transfusion and invasive measures to control the bleeding. By considering the life-threatening event of the patient, age, and risk of bowel perforations as procedure-related complications in the young developing age, managing it using colonoscopy hemostatic endoclipping might be one of the best choices to avoid unnecessary major operation complications for a young patient. The bleeding cecal ulcer should be considered in the differential diagnosis of massive life-threatening gastrointestinal bleeding, especially in rural areas with high burden of cases such as tuberculosis and salmonella typhi.

2. Case Presentation

This patient is a 14-year-old Sabahan girl who presented with lower gastrointestinal bleed and abdominal pain for one day. Prior to that, she had a history of dizziness and pre-syncopal attacks. She had no known past medical or allergies history. She had no history suggestive of tuberculosis or inflammatory bowel disease. She also denied any family history of tuberculosis. During presentation, she had hypovolemic shock requiring initiation of massive blood transfusion protocol. Cardiovascular, respiratory, and abdominal examinations were unremarkable. Per rectal examination revealed fresh blood clots. Proctoscopy showed blood clots with no hemorrhoids or mass seen. Blood
investigations confirmed anemia with Hb of 7.7g/dL and transaminitis. Her electrocardiogram (ECG) shows sinus tachycardia. Bedside abdominal ultrasound noted no free fluid in potential place, with inferior vena cava was collapsible with more than 50%. Renal function, coagulation screening results, chest and abdomen radiograph were normal and unremarkable. COVID-19 Rapid test Antigen was negative. Computed Tomography (CT) scan demonstrated contrast extravasation within the cecum with pooling on delayed phase in keeping with active bleeding, and mild thickening of cecal wall and ileocecal valve with adjacent enlarged mesenteric nodes.

In view of persistent hypotension despite active resuscitation, the patient had undergone emergency colonoscopy. Patient was intubated and emergency colonoscopy was done. There was ulceration seen at the cecum with prominent vessel and active oozing, and patchy healed base ulceration seen at the terminal ileum. The ulcer at cecum then was secured with hemoclip and adrenaline injection of 8mls was given. Post colonoscopy, the patient was extubated and was transferred to acute surgical ward for closed observation. Subsequently, the patient progressed well.

In ward, TB workup and sputum acid fast bacilli (AFB) were negative. Her blood culture and sensitivity showed no organism growth. However, in view of CT scan and colonoscopy findings, the patient was started with antitubercular treatment (ATT) for 6 months. Upon follow up in TB clinic, the patient was well with no recurrent symptoms.

3. Discussions

Lower gastrointestinal bleeding is a common surgical emergency in surgical field, and it could be life threatening. By etiology, bleeding of lower gastrointestinal is defined as bleeding that arises distal to the Ligament of Treitz [2]. Lower gastrointestinal bleeding seldomly occur in adolescences and it is rare. The most common symptom is abdominal pain, associated with per rectal bleeding. The causes of lower gastrointestinal bleeding in children are constipation with fissures, infections, inflammatory bowel diseases, and polyps [3] and whereby inflammation and ulceration of the colon constitutes 6% to 30% according to one review done in 1999 [2].

If we focus into the causes of bleeding cecal ulcer, it is rarely reported and its occurrence in the adolescent pediatrics age group are even rarer. Journeaux et al., in 1988 has described that benign cecal ulcer may produce severe life-threatening gastrointestinal hemorrhage and correct diagnosis is needed for definitive plan to be carried out [4]. Causes of cecal ulcer can be summarizes in the table below.

<table>
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<th>Table 1. Summary causes of cecal ulcer [2], [5]–[7]</th>
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<td><strong>Infectious</strong></td>
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<td>- Viral</td>
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<td>- Bacterial</td>
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Lower GI bleeding may present as a trivial event which may be treated conservatively or it may present as a massive and life-threatening which emergency surgery may be needed in hemodynamically unstable patients. However, with emerging new treatment options such as endoscopic management, surgery is kept as the last resort especially in patients whom have developed complications such as perforation with abscess and fistula, massive bleeding, obstruction, or patients not responding to medical management. Endoscopic management can be further divided into thermal probe methods, injection sclerotherapy and mechanical haemostatic therapy [8].

Endoscopic treatment brings more benefit than harm in many ways. It reduces mortality as compared to such as limited resections [10]. Mortality rate can be as high as 30% to 57%. A study also compared the prices between various treatment options and proved colonoscopy to be more cost saving than medical, angiographic or surgical management of lower GI bleeding [2]. Endoscopy treatment also eliminates other unnecessary extra diagnostic procedures and shortens hospital stay.

Back to our case at hand, although surgery seems to be the most likely option but decision made to proceed with colonoscopy and endoscopic clipping managed to achieve a haemostasis for this child. Few studies concluded that endoscopic metallic clip placement shows a good result in lower GI bleeding such as in bleeding colonic diverticular or solitary rectal ulcers hence saving patients from unnecessary and major debilitating surgeries [2], [11], [12]. It helps and reduces risk for patient especially those of the young age from wound breakdown, anastomosis leak, short bowel syndrome and potential psychological complications in a growing child.

In this patient, we treated her empirically for tuberculosis. In Sabah, which one of the states in Malaysia, the tuberculosis (TB) equated to 20% of Malaysia’s total TB notifications despite Sabah representing only 10% of Malaysia’s population [7], [13]. The management of TB therapy with standard antituberculosis drugs is usually highly effective for intestinal TB. Compliance with treatment is the main determinant of outcome and directly observed therapy is highly recommended. Treatment success in extra pulmonary TB was 91% in one study [7]. In a
study by Mukewar et al in colonic tuberculosis majority of the ulcers (87.2%), nodules (84.6%), polypoid lesions (85.7%), luminal narrowing (76.2%), and ileo-cecal valve deformities (76.5%) resolved with anti-TB treatment after 4 weeks [7], [9].

4. Conclusion

By considering the life-threatening event of the patient, age, and risk of bowel perforations as procedure-related complications in a young developing age, managing it via endoscopic hemostatic clipping can be one of the choices for a young girl before considering other invasive surgical interventions. The bleeding cecal ulcer should be considered in the differential diagnosis of massive life-threatening gastrointestinal bleed, especially in rural areas with high burden of infections such as tuberculosis and salmonella typhi. One must consider to do the procedure of life saving endoscopic procedure in a control environment with anesthesiologist standby when perform it in a rural district hospital so a better outcome can be produced.

Declarations

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This study did not receive any grant from funding agencies in the public, commercial, or not-for-profit sectors.

Competing Interests Statement

The authors declare no competing financial, professional, and personal interests.

Consent for Publication

Authors declare that they consented for the publication of this study.

Ethical Approval

Based on institutional guidelines.

References


