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Case report

Caecal Ameboma, colorectal malignancy mimicker in young male with ANCA-associated vasculitis

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ABSTRACT

Ameboma refers to the rare development of an inflammatory, ulcerated, exophytic mass in the gastrointestinal tract that can resemble carcinoma. Typically it presents as a right lower quadrant abdominal mass, Patients may also present with diarrhea or constipation and associated systemic symptoms, including weight loss and fever. In this article we present a young man with a background of ANCA associated vasculitis, who presented with fresh lower gastrointestinal bleeding during hospital admission for severe covid-19 pneumonia which turned out to be caecal aemboma. This case is highlighted for its rarity, the diagnostic challenge, and for the major role of colonoscopy as a diagnostic tool for this pathology.

Introduction

Entamoeba histolytica is an enteric protozoan which lives in two forms: invasive trophozoites and indolent cysts. Humans are the main source of infection [1]. The clinical spectrum of intestinal amoebiasis ranges from asymptomatic carrier to severe fulminant necrotizing colitis with bleeding and perforation [2].

Ameboma refers to the rare development of an inflammatory, ulcerated, exophytic mass in the gastrointestinal tract that can resemble carcinoma. It can reach a considerable size, up to 15 cm in diameter [3]. Anatomically usual site for ameboma is the cecum, appendix, and rectosigmoid [4].

Clinically, ameboma can present as a right lower quadrant abdominal mass, Patients may also present with diarrhea or constipation and associated systemic symptoms, including weight loss and fever. The coexistence of ameboma and liver abscesses is uncommon [5], and metastatic colon carcinoma should be suspected. Other differential diagnoses include Crohn's disease, non-Hodgkin's lymphoma, tuberculosis, fungal infection, AIDS-associated lymphoma, and Kaposi's sarcoma [6].

Anti-Neutrophil Cytoplasm Autoantibodies (ANCA) associated vasculitis's (AAV) are a group of syndromes of acute and chronic Noninfectious immune mediated small sized Vasculitides predominantly involve the upper respiratory tract, lungs, kidneys, skin, and nervous system.

Treatment with glucocorticoids and cyclophosphamide (CYC) has substantially improved survival rate [7].

We present a young man with a background of ANCA associated vasculitis, who developed fresh lower gastrointestinal bleeding during hospital admission for severe covid-19 pneumonia turned out to be a caecal ameboma.

Case report

A 29-year-old man presented to the emergency department at Sultan Qaboos University Hospital (SQUH) with a 3-day history of fever, productive cough and shortness of breath. 10 days prior to current presentation, he had runny nose and tested positive for SARS-CoV-2 PCR from nasopharyngeal and throat swab.

His medical background comorbids include severe anti-neutrophil cytoplasmic antibody (ANCA) associated vasculitis (AAV) manifesting

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Table 1
Summary of the laboratory tests results upon admission.

Test	Result	Normal range
Hb (g/L)	7.6	11–14.5
Haematocrit (L/L)	0.24	0.34–0.43
Platelet count (10^9 /L)	323	150–450
White cell count (10^9 /L)	10.5 (No eosinophilia)	2.4–9.5
PT (sec)	11.4	9.8–12
APTT (sec)	65.5	25–36.4
Ferritin (ug/L)	545	30–400
D-dimer (mg/LFEU)	0.6	0.2–0.7
CRP(mg/L)	122	0–5
Urea (mmol/L)	14.3	2.8–8.1
Creatinine (umol/L)	261	59–104
eGFR (Ml/min/1.73 m^2)	25	> 90

APTT, activated partial thromboplastin time; CRP, C reactive protein; Hb, haemoglobin; eGFR, estimated gomeurlar filtration rate; PT, prothrombin time

as pulmonary hemorrhage and biopsy proven necrotizing glomerulonephritis, as well as Hemophilia A.

His regular medications were amlodipine 10 mg once daily, carvedilol 6.25 mg twice daily, metformin XR 500 mg once daily, factor VIII replacement (2500 units) three times a week, prednisolone tapering dose and co-trimoxazole 480 mg once daily for PJP prophylaxis.

On physical examination he was alert and oriented but in moderate respiratory distress. His vitals were as follows: temperature 36, blood pressure 101/60 mmHg, heart rate 90 bpm, respiratory rate 26 bpm and oxygen saturation 93% on 6 liters of face mask oxygen (75% in room air). Chest auscultation revealed bilateral crackles. Other systematic examination was unremarkable.

Laboratory findings are presented in Table 1. Results of full blood count showed hemoglobin of 7.6 g which is at his baseline as well as normal platelets counts. However, He had neutrophilic leukocytosis, and his CRP was elevated at 122 mg/l. His coagulation profile showed isolated prolongation of APTT of 65.5 s, consistent with his hemophilia A. Renal parameters were remarkable for acute deterioration in comparison with his baseline (Baseline eGFR 40 s). His chest radiograph (not shown) showed bilateral air space opacities.

At this point he was admitted with impression of COVI-19 pneumonia. Patient was started on piperacillin-tazobactam at dose of 2.25 g IV every 8 h, azithromycin 500 mg PO once daily, dexamethasone 10 mg IV once daily along with esomeprazole 20 mg once daily.

During the same day of admission, the patient started having episodes of painless fresh bleeding per rectum estimated to be around 200 ml and hemoglobin dropped to 5.6 g/dl.In view of his background of hemophilia and difficulty in performing endoscopic evaluation due to his oxygen requirements, it was decided to manage him conservatively with packed red blood cell transfusions and factor VIII replacement, in liaison with the hematology team.

Despite daily factor VIII replacement, the lower GI bleeding persisted over the subsequent days. His oxygen requirements by then were minimal. Therefore, the gastro-enterology team was consulted for endoscopic evaluation of the colon. His colonoscopy showed a caecal circumscribed ulceration with central small polypoid lesion with no signs of active bleeding. The remaining segments of the colon were normal as shown in Fig. 1. Multiple biopsies were taken from the described lesions for histopathology evaluation. In view of ongoing lower GI bleeding requiring multiple blood transfusions, a Computed Tomography (CT) angiogram of the abdomen was also performed which showed evidence of a large ill-defined, eccentrically placed, heterogeneously enhancing soft tissue mass occupying the cecum. The mass extends across the serosal surface with multi-lobulated extra luminal component having broad area of contact with anterior peritoneum, concerning for malignancy. Fig. 2A, B.

During his hospital stay the patient's COVID-19 pneumonia recovered gradually and by the second week he was maintaining saturation of 94% and above in ambient air. However, fresh bleeding per rectum persisted, albeit smaller in volume, and his hemoglobin eventually stabilized at his baseline of 7 g/dl.

The caecal lesion histopathology report showed ulcerated colonic mucosa accompanied by fragments of granulation tissue and hemorrhagic necro-inflammatory debris. Several trophozoites of amoeba -were highlighted by PAS stain- within necrosis shown in Fig. 3. There was no

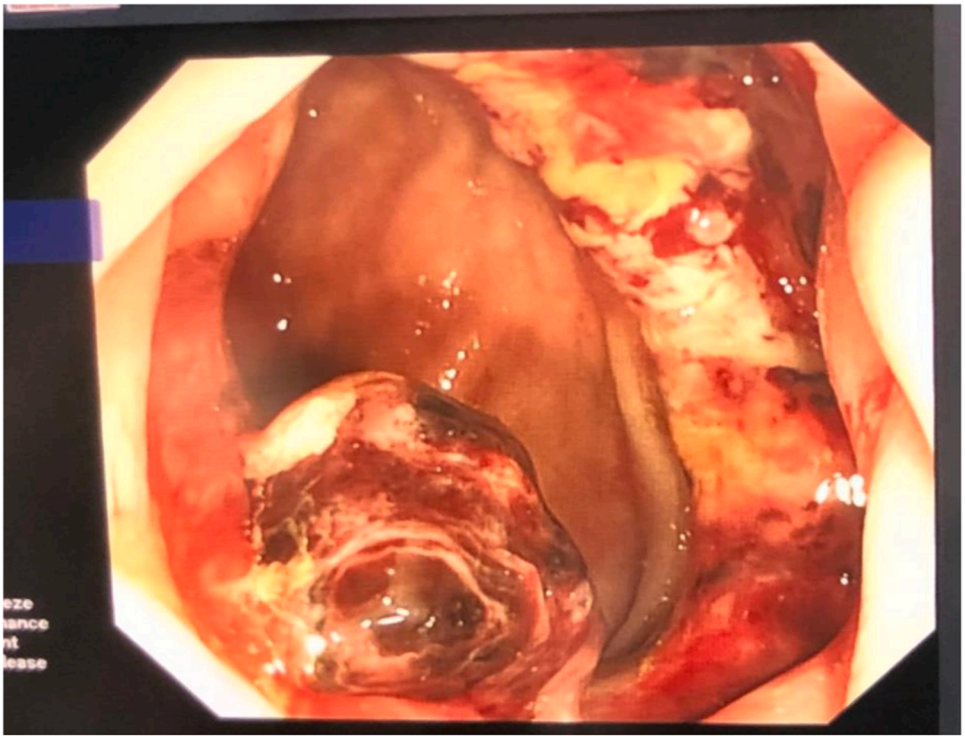

Fig. 1. caecal circumscribed ulceration with central small polypoid lesion. No signs of active bleeding and remaining segments of the colon were normal.

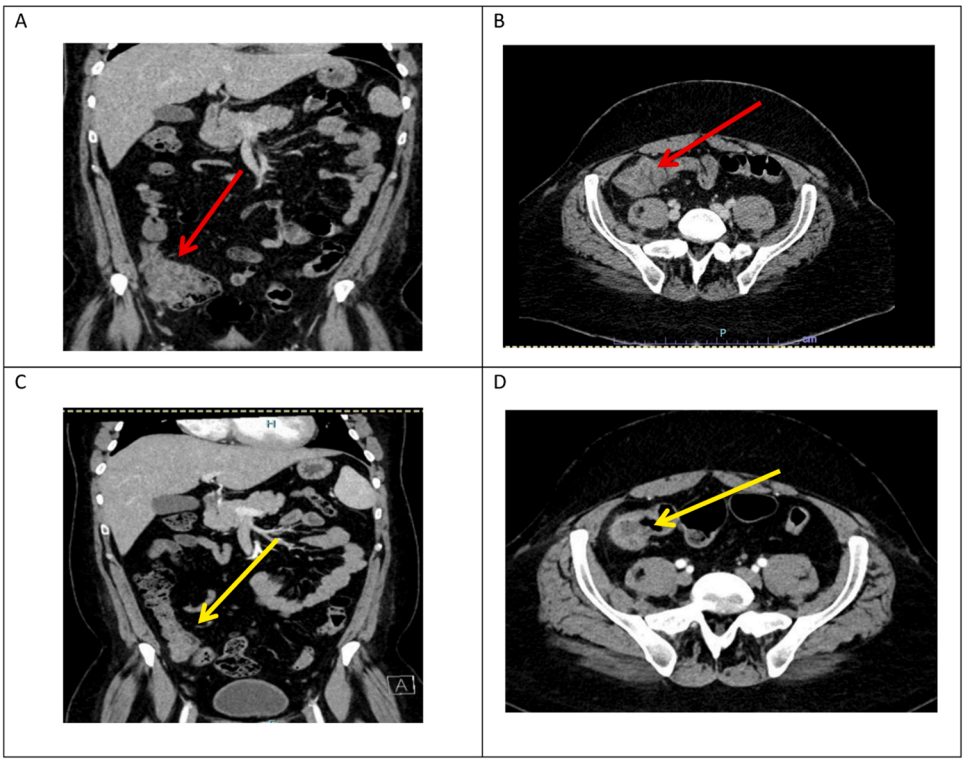

Fig. 2. A, B (Coronal and axial cross sectional images of the abdomen, respectively) demonstrating evidence of a large ill-defined, eccentrically placed, heterogeneously enhancing soft tissue mass occupying the cecum. The mass extending across the serosal surface with multilobulated extra luminal component having broad area of contact with anterior peritoneum. C, D (Coronal and axial cross sectional images of the abdomen, respectively) shows near-total interval resolution of previously visualized exophytic caecal mass. There is significant interval resolution of previously visualized ill-defined eccentric heterogeneously enhancing soft tissue caecal wall thickening.

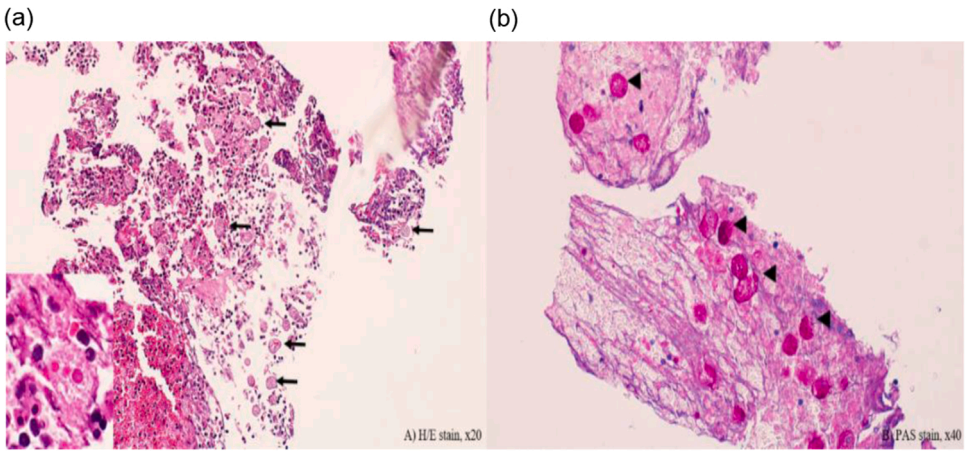

Fig. 3. (A) Several trophozites of amoeba (arrows) are present within hemorrhagic necroinflammatory debris. They contain ingested red blood cells (insets). (B) PAS stains the amoeba trophozoites magenta (arrow heads) PAS: Periodic acid-Schiff.

Table 2
Follow up labs.

Test	Result	Normal range
Hb (g/L)	9.2	11–14.5
Haematocrit (L/L)	0.32	0.34–0.43
Platelet count (10^9 /L)	223	150–450
White cell count (10^9 /L)	3.5 (No eosinophilia)	2.4–9.5
PT (sec)	10.3	9.8–12
APTT (sec)	30.8	25–36.4
Urea (mmol/L)	7.4	2.8–8.1
Creatinine (umol/L)	153	59–104
eGFR (Ml/min/1.73 m^2)	46	> 90

APTT, activated partial thromboplastin time; Hb, hemoglobin; eGFR, estimated glomerular filtration rate; PT, prothrombin time

dysplasia or malignancy. No fungi are demonstrated by GMS and PAS. Immunohistochemistry stain for CMV was negative. Entamoeba histolytica serology was sent. It came positive with IgG titer of 15.66 Nova-TecUnits (NTU). Infectious Diseases team was consulted for the caecal ameboma and he was started on Intravenous metronidazole 750 mg every 8 h for total of 10 days. Patient's general status and rectal bleeding episodes improved after that course and his vitals stabilized. Therefore he was discharged to complete 21-day course of oral Metronidazole 800 mg every 8 h followed by cysticidal treatment with paromomycin for 7 days.

Our patient was seen in the outpatient clinic after 3 weeks from the discharge. He was doing well without any further episodes of lower GI bleeding. His follow up labs shown in Table 2 demonstrated stability of his blood counts, improvement in his inflammatory markers as well renal parameters. Follow up CT (Fig. 2 C, D) showed near-total interval resolution of previously visualized exophytic caecal mass as well as

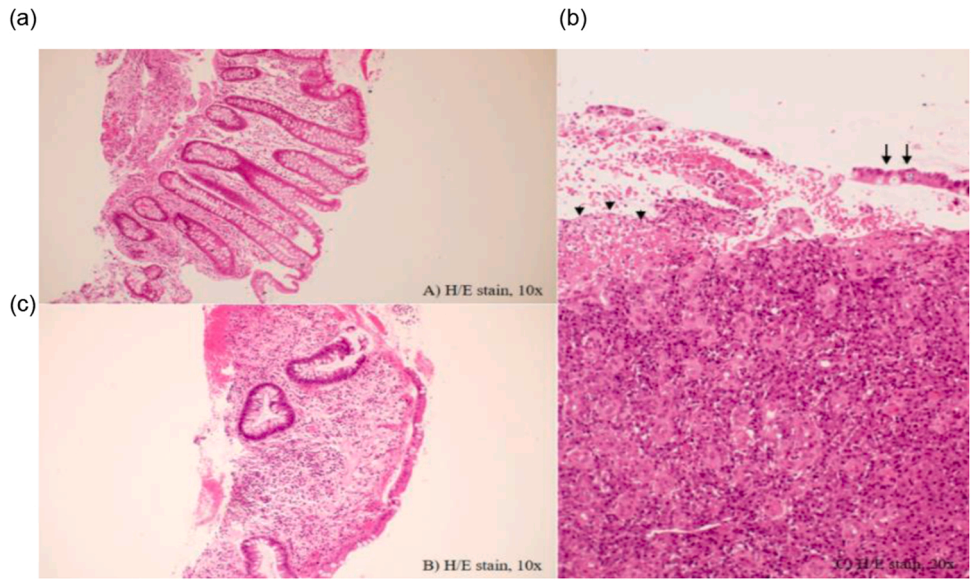

Fig. 4. (A) The inflammation in the non-ulcerated fragments had decreased. (B) With the regeneration of crypts, there is some mild architectural distortion. (C) Sloughed surface epithelium (arrows) with deposition of fibrinopurulent exudate (arrow heads) and underlying granulation tissue are shown in this picture of a persistent ulcer. There is no evidence of an amoeba.

significant interval resolution of previously visualized ill-defined eccentric heterogeneously enhancing soft tissue caecal wall thickening. Follow up colonoscopy was done (images not shown) and showed distal caecal annular ulcer of 3 cm length by 1 cm width which was biopsied for histopathological evaluation, mycobacterial tuberculosis, and cytomegalovirus evaluation. The follow up histopathology report (Fig. 4) showed no residual amoeba histolytica trophozoites and unremarkable for any other pathogens.

Discussion

An ameboma, originally described as amebic granuloma by Gunn and Howard, is a mass of granulation tissue with peripheral fibrosis and a core of inflammation related to chronic amebic infection [8]. Ameboma of the large bowel is a rare condition that only occurs in 1.5% of all cases with invasive amebiasis [6]. Risk factors for entamoeba infection include malnourishment, advanced age, living in endemic areas and immigrants from and travelers to endemic areas. Our patient was not known to have any of these risk factors however he was on intensive immunosuppressive therapy for his underlying ANCA associated vasculitis.

An ameboma may present with nonspecific abdominal pain, constipation, bloody diarrhea or even an abdominal mass [9]. In this case, the patient had episodes of fresh per rectum bleeding as the only symptom which is a rare presentation of caecal ameboma, however underlying hemophilia A may have contributed to this unique presentation.

Inflammatory bowel disease, appendicular abscesses and colonic cancer are important differential diagnosis of caecal ameboma [3,10,11]. Therefore, colonoscopic evaluation, despite being nonspecific, is a crucial step in the diagnosis of colonic ameboma with a yield of over 60% to obtain mucosal samples for histopathological evaluation [12]. The colonoscopy in our case showed a caecal circumscribed ulceration with a small central polypoid lesion similar to what was previously described in several case reports [8,10,12][12, 14, 16].

In general, trophozoites are round or oval having more of vacuolated cytoplasm with round nuclei. Staining with PAS or immunoperoxidase and anti-lectin antibodies aids in the visualization of amoebae as shown in the presented case.

The treatment of ameboma consists of anti-parasitic agent followed by cysticidal agent to eliminate intestinal cysts. Overall the outcome is favorable with approximate cure rate was reported to be 90% [13]. Our patient was managed with metronidazole for four weeks followed by paromomycin for one week with satisfactory clinical and radiological response. This was further supported by histopathological resolution from samples from follow up colonoscopy.

Conclusion

In immunocompromised individuals with gastrointestinal bleeding or colorectal lesions that resemble malignancy, aemboma should be considered in the appropriate clinical context and it is a treatable cause of GI bleed with an excellent success rate.

Declaration of patient consent

The patient has given his consent for his images and other clinical information to be reported in the journal. The patient understands that his name and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Ethical approval

Not required for a case report

Author contribution

All authors mentioned in the manuscript have contributed in writing of this case

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Conflict of interest

None declared.

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