www.c-jhs.com

ScientificScholar®
Knowledge is power
Publisher of Scientific Journals

Calabar Journal of Health Sciences

Case Report

Successful minimal invasive treatment of massive colonic bleeding from a pseudoaneurysm in a Nigerian with end-stage kidney disease: A case report

Aderemi Omololu Oluyemi[1], Hammed Ninalowo[2], Chris Iwuchukwu[3], Evaristus Chukwudike[4]

[1]Department of Gastroenterology, Endoscopy and Hepatology, ReMay Consultancy & Medical Services, Ikeja, [2]Department of Interventional Radiology, IRDOC Interventional Radiology Consulting Limited, Euracare Multispecialty Hospital, Victoria Island, Lagos State, Nigeria, [3]Department of Radiology, Harbor-UCLA Medical Center, Los Angeles, California, United States, [4]Department of Gastroenterology and Hepatology, Internal Medicine, University of Calabar Teaching Hospital, Calabar, Cross River, Nigeria.

***Corresponding author:**
Aderemi Omololu Oluyemi, Department of Gastroenterology, Endoscopy and Hepatology, ReMay Consultancy and Medical Services, Ikeja, Lagos, Nigeria.

remioluyemi@yahoo.com

Received : 31 March 2021
Accepted : 12 November 2021
Published : 29 April 2022

DOI
10.25259/CJHS_16_2021

Quick Response Code:

ABSTRACT

Emergency presentation of some rare causes of massive colonic bleeding with clinical hemodynamic instability often presents challenging diagnostic and therapeutic dilemmas. This is more so in a resource-limited locality such as ours where there is a dearth of technical expertise and equipment available to handle such unusual cases. This report presents a case of massive colonic bleed from a pseudoaneurysm of a branch of the ileocolic artery which had a fistulous communication with the cecum and was successfully treated with minimally invasive interventional radiology procedure in Lagos, Nigeria.

Keywords: Hematochezia, Pseudoaneurysm, Interventional radiology, Nigeria

INTRODUCTION

A pseudoaneurysm, or false aneurysm, exists where via a breach of the tunica medica there is a resultant leak of blood into the adjacent tissue. It is different from a true aneurysm in which case there is a saccular bulge in the arterial wall but all histological layers of the vessel are intact.[1] Pseudoaneurysmal dilatation of abdominal vessels is only rarely encountered and mostly appears in the territory of the celiac artery.[2] Colonic bleeding from this rare source had not, to the best of our knowledge, been previously reported in the country. This case report also documents its successful therapy with endovascular intervention.

CASE REPORT

A 28-year-old man who is on long-term intermittent hemodialysis presented overnight in the emergency department with features of hemodynamic instability from massive gastrointestinal bleed. The young man had had several episodes of passage of copious amounts of blood per rectum- much of the passed blood was clotted, which is an indication of how severe the bleed was. At presentation, he was diaphoretic, restless, and markedly pale. His vital signs were, blood pressure 76/48 mmHg, pulse rate 126 beats/minute at rest, respiratory rate of 16 cycles per minute, and oxygen saturation (SpO_2) was 96% breathing ambient air. A bedside capillary packed cell volume assay was 18%.

He was transfused with four pints of packed red cells and given supplemental oxygen and other supportive measures. He was then scheduled for a colonoscopy later in the day. However, this plan was deferred because of repeated episodes of hematochezia with consequent compromise in his clinical condition. A contrast-enhanced computed tomography (CT) was ordered and this revealed extravasation of contrast into the cecum in the delayed venous phase of a multiphasic scan [Figure 1]. Thus a specialist interventional radiology consult was requested. A selective angiogram of the ileocolic artery was performed and a sub-selection of the descending branch showed a sub-centimeter pseudoaneurysm of from this branch within the cecum with associated active extravasation. Following selective embolization of this vessel with a combination of 2–4 mm coils, no further flow was demonstrable from this arterial branch in the post-embolization images with cessation of the earlier described extravasation into the cecum [Figure 2]. There was a dramatic turnaround in the clinical status of the patient, even from the recovery room post-procedure as his vital signs stabilized. He was thus assessed for another 36 hours and discharged for outpatient follow-up. One week after the procedure, an elective colonoscopy did not detect any trace of recurrence of colonic bleeding.

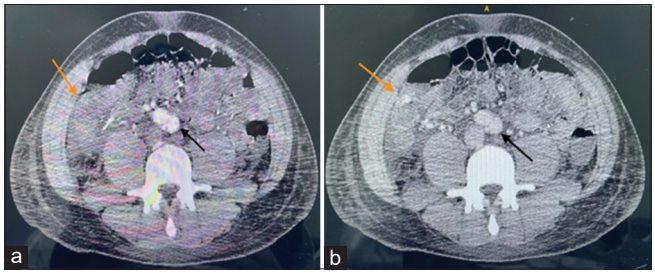

Figure 1: (a) Multiphase CT scan in the arterial phase with hyperdense contrast in the bilateral iliac arteries (black arrow). There is no hyperdensity in the cecum on the arterial phase (orange arrow). (b) CT scan in the delayed phase venous showing less dense contrast in the arteries (black arrow). There is new hyperdense contrast material within the cecum (orange arrow). This was not previously seen in the arterial phase and represents active extravasation into the cecal lumen.

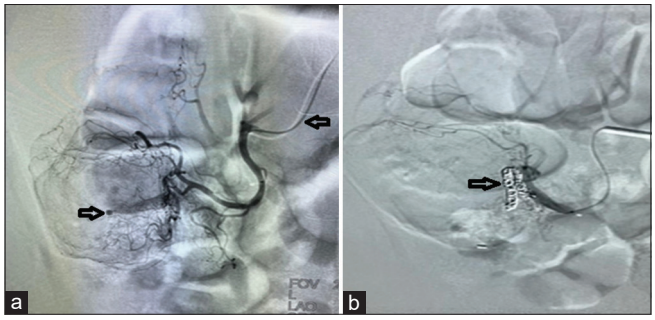

Figure 2: (a) A catheter (left arrow) is placed in the branch artery supplying the pseudoaneurysm and selective angiogram of artery shows multiple small peripheral vessels and a large pseudoaneurysm (right arrow). (b) Selective angiogram is repeated after the artery has been occluded with metallic coil (right arrow). The pseudoaneurysm is no more visualized.

DISCUSSION

Colonic bleeding is one of the leading causes of hospital admissions in gastroenterology wards all over the world. Although 80% of all cases will stop spontaneously, severe hematochezia, defined as continued bleeding within the first 24 h of hospitalization with a drop in the hemoglobin of at least 2 g/dl and/or a transfusion of at least 2 units of packed red blood cells, occurs in approximately 20% of cases and requires urgent diagnosis and intervention to control the bleeding.[3] Identification of the source of bleeding is vital to patient stratification and management.

Pseudoaneurysms remain a rare cause of colonic bleeding worldwide and their rare status within our locality is underscored by the fact that this report, to the best of our knowledge, is the first such described from the country. By far the most frequent colonoscopic finding in cases of colonic bleeding in Nigeria are hemorrhoids while the most common causes of severe hematochezia in the Western world are diverticulosis and angiodysplasias.[3-5] The prevalence of pseudoaneurysms in the population is not known but when they are detected, therapy is indicated as lack of an intact vessel wall leads to continued enlargement and subsequent rupture in nearly all cases.[1] However, in a resource-constrained environment where there is little available by way of expertise, technical and infrastructural support for such therapeutic endovascular procedures, care can be an impossibility. A resident interventional radiologist and the necessary facilities for such therapy recently became available in a private center in Lagos and we are delighted to present the successful treatment of the gentleman in this case report.

Appropriate radiological tools are usually enough to make a definitive diagnosis of pseudoaneurysm. The usefulness of abdominal ultrasound scan as an investigative tool is limited by bowel gas in these cases and thus, more advanced tools are required.[1] A multiphasic CT scan will be able to demonstrate that the aneurysm lumen attenuation follows that of other arterial lumina on unenhanced images at all phases of contrast material administration though its outline would be irregular and not like that of a true vascular aneurysm.[1] This modality will also demonstrate the extravasation of the contrast medium which is the hallmark of bleeding along with the anatomical location as was shown in the index case [Figure 1]. CT angiography is the investigative modality of choice for identification of visceral vessel pseudoaneurysmal bleeding [Figure 2]. As

well as providing for swift and accurate localization of the bleeding lesion, it also provides a window for endovascular therapeutic techniques which have reduced the frequency of emergent surgical bowel resection and its attendant morbidity and mortality.[1,6]

The exact cause of pseudoaneurysm in our index patient still remains obscure as there was no traceable penetrating trauma, connective tissue disease, vasculitis, or colorectal malignancy. Though the patient in this case report was on long-term hemodialysis therapy for end-stage kidney disease, scientific literature is silent on whether there is a link between the two disease entities. This notwithstanding, the managing interventional radiologist deployed the use of 2–4 mm coils to achieve exclusion of flow within the pseudoaneurysm- this modality is just one of a number of treatment modalities that are reviewed elsewhere.[1] The clinical and radiological results of such interventions are often dramatic both from a clinical and a radiological standpoint, as was demonstrated in our patient whose post-embolization arteriogram showed no more bleeding and whose clinical condition stabilized within the hour. As clinicians, such responses are most welcome and gratifying.

CONCLUSION

The importance of this case presentation highlights the use of specialized equipment and interventional radiology in the diagnosis and successful management of an unusual vascular cause of massive colonic bleeding in a resource-limited locality such as ours. The authors hope that the index of suspicion for such rare causes of gastrointestinal bleeding will be raised and that this article will help stimulate discussion and policy that will increase availability, access and uptake of such facilities will increase for the benefit of the Nigerian patient.

Declaration of patient consent

Patient's consent not required as patients identity is not disclosed or compromised.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

REFERENCES

1. Jesinger RA, Thoreson AA, Lamba R. Abdominal and pelvic aneurysms and pseudoaneurysms: Imaging review with clinical, radiologic, and treatment correlation. Radiographics 2013;33:E71-96.
2. Tulsyan N, Kashyap VS, Greenberg RK, Sarac TP, Clair DG, Pierce G, *et al*. The endovascular management of visceral artery aneurysms and pseudoaneurysms. J Vasc Surg 2007;45:276-83.
3. Ghassemi KA, Jensen DM. Lower GI bleeding: Epidemiology and management topical collection on large intestine. Curr Gastroenterol Rep 2013;15:333.
4. Oluyemi A, Odeghe E, Adeniyi O. Colonoscopy findings in lower gastrointestinal bleeding in Lagos: A comparative study based on age. Niger J Clin Pract 2020;23:1656-9.
5. Ray-Offor E, Elenwo SN. Endoscopic evaluation of upper and lower gastro-intestinal bleeding. Niger J Surg 2015;21:106-10.
6. Nguyen C, Baliss M, Tayyem O, Merwat S. Lower gastrointestinal hemorrhage caused by superior rectal artery pseudoaneurysm. ACG Case Rep J 2020;7:e00387.

How to cite this article: Oluyemi AO, Ninalowo H, Iwuchukwu C, Chukwudike E. Successful minimal invasive treatment of massive colonic bleeding from a pseudoaneurysm in a Nigerian with end-stage kidney disease: A case report. Calabar J Health Sci 2022;6:51-3.