

Case Report**Chronic GI Bleeding as the Only Presenting Sign of AML in an Elderly Patient**Emily R-Finkelstein^{BS}¹; Shari Barro^{BA}¹; Fernando Diaz^{MD}²¹Ross University School of Medicine, Barbados, West Indies²Optum Health, Hialeah, Florida, USA**Abstract**

Episodes of bleeding are a common presenting symptom of acute myeloid leukemia (AML), frequently manifesting as petechiae, epistaxis, or hematuria. On the other hand, gastrointestinal (GI) bleeding is a rare sequela of disease, mainly being reported after disease recurrence or initiation of chemotherapy. This report highlights the clinical course of an 87-year-old Hispanic male who presented to his primary care physician for a routine visit reporting fatigue and dark stools. The patient was later found to have AML with probable GI involvement, which was his only primary manifestation of disease. We hope this case will encourage providers to include AML in their differential diagnosis list when evaluating a patient with persistent melena. Earlier identification of GI involvement in undiagnosed disease may improve the patient's clinical course and treatment outcomes.

Keywords: Leukemia, melena, AML, pancytopenia**Introduction**

While acute myeloid leukemia (AML) remains a common type of leukemia in adults, it is a relatively rare cancer diagnosis overall, responsible for only one percent of adult cancer deaths in the United States.¹⁻³ AML stems from the malignant clonal expansion of undifferentiated myeloid precursor cells, resulting in ineffective hematopoiesis and bone marrow failure.^{1,2} The production of malfunctioning white blood cells can cause cytopenias, creating downstream symptoms related to anemia and thrombocytopenia.¹⁻⁴ However, a handful of individuals may be asymptomatic upon diagnosis with isolated lab abnormalities.¹

Episodes of bleeding have historically been attributed to a patient's thrombocytopenic state, presenting as cutaneous bleeding, epistaxis, or hematuria.^{1,5} On the other hand, gastrointestinal (GI) sources of bleeding are an atypical finding in those diagnosed with AML and are seldomly a primary manifestation of disease.^{3,4} Those with AML and possible GI involvement should be investigated and treated promptly to avoid potentially life-threatening complications such as hemorrhage, infection, and necrotizing enterocolitis.³

A limited number of publications have documented the clinical course

of AML with isolated GI bleeding as the primary manifestation of disease, with even less frequent cases describing chronic melena over a period of months.³⁻⁸ We present the clinical course of an 87-year-old Hispanic male who presented to his primary care physician for a routine visit reporting fatigue and dark stools. Bone marrow biopsy later confirmed AML with probable GI involvement manifesting as chronic melena. This case illustrates an unlikely clinical presentation that should encourage providers to include AML in their differential diagnosis list when evaluating a patient with persistent melena. In addition, we hope this case will allow for the earlier identification of disease, leading to better treatment outcomes and a greater likelihood of survival.

Case Report

Our patient is an 87-year-old Hispanic male with no significant past medical history that presented to his primary care doctor for a routine visit in September of 2021. During the interview, he reported having mild fatigue and dark stools for a few weeks. Laboratory values from this visit revealed pancytopenia, with a hemoglobin (Hb) < 6.5 g/dl, hematocrit 19%, white blood cell (WBC) count $1.6 \times 10^9/L$, and platelet count $73 \times 10^9/L$. This was incongruent with laboratory values from six months prior that were within normal limits.

The patient returned to the office three days later for repeat phlebotomy, which showed similar values. It was then recommended that this patient be seen at the local hospital for a blood transfusion, in which he received two units of packed red blood cells (pRBC) before returning home. Fecal occult blood test (FOBT) performed at this visit was negative. Appointments with a hematology and oncology specialist for pancytopenia and gastrointestinal specialist for melena were scheduled.

Two weeks following the transfusion, the patient came back into the primary care office complaining of GI upset and persistent dark stools. Laboratory values were Hb of 8.0 g/dl and hematocrit 24%. He was then started on Pantoprazole Sodium 40mg by mouth daily until he was able to see a gastroenterologist. However, phlebotomy results drawn ten days later again revealed a Hb < 6.9g/dl, hematocrit 21%, WBC $2.0 \times 10^9/L$, and platelets $75 \times 10^9/L$. He was sent for a second transfusion at the local hospital with two units of pRBCs.

***Corresponding Author:** Emily Finkelstein, 1865 Brickell Ave Apt A1604

Miami, FL 33129, Phone: 4438784542

Mail : Emilyfinkelstein@mail.rossmed.edu

Received: June 07, 2022 Accepted: June 07, 2022 Published: June 15, 2022

Citation: Emily R. Finkelstein, BS¹; Shari Barro, BA¹; Fernando Diaz, MD². Chronic GI Bleeding as the Only Presenting Sign of AML in an Elderly Patient . Int Clin Img and Med Rew. 2022; 2(3): 1073.

Bone marrow biopsy was performed in the first week of November. The patient was found to be pale after the procedure and was admitted after his labs revealed a Hb below the transfusion threshold. He was transfused for a third time with two units of pRBCs, making this his third transfusion within a month's time. Results of the bone marrow biopsy were available a couple days later which showed AML with 40% blast cells.

After receiving a definitive biopsy report, the patient was stable and awaiting hematology and oncology treatment recommendations until November 26th when the patient awoke with subjective severe weakness and dark stools. His son took him to the hospital where he received another two units pRBCs. He was scheduled for a colonoscopy during his stay in the intensive care unit, however left against medical advice before the procedure could be performed.

During a follow-up appointment on December 9th at the primary care office, phlebotomy revealed a Hb of <6.7 g/dL, warranting yet another transfusion. He also complained of increased weakness and shortness of breath compared to baseline. Due to a delay in care with previously scheduled hematology and oncology appointments, the patient established care with a different hematologist at this time.

Patient was admitted to the hospital on December 14th to begin induction chemotherapy regimen of azacitadine 131mg subcutaneously daily for seven days. On admission, he complained of weakness, dyspnea of exertion, lightheadedness and over thirty pounds of unintentional weight loss. Before therapy was initiated, bone marrow biopsy was repeated, confirming AML with 40% blasts. Hospital course was significant for symptomatic anemia below transfusion threshold, necessitating two units pRBCs on December 24th.

Two weeks following this discharge, he was readmitted due to laboratory results yielding a Hb 4 g/dl and platelet count $12 \times 10^9/L$. He had minimal symptoms, denying any recent subjective fever or chills. In the emergency department, he was found to have neutropenic fever and was positive for Coronavirus Disease 2019 (COVID-19). He was started on intravenous antibiotics, remdesivir, and transfused with three units pRBCs and one unit of transfused platelets. After a couple of weeks, the patient was refusing further treatment, stating that he would like to leave against medical advice. His disease was deemed advanced and with rapid progression and therapy was discontinued based on patients and families wishes. Patient now resides in hospice care.

Discussion

Our patient is an 87-year-old Hispanic male who presented to his primary care physician for a routine physical examination when he reported having mild fatigue and dark stools upon evaluation. Over the next few weeks, the patient had persistent pancytopenia, with rapidly declining hemoglobin necessitating multiple transfusions at local hospitals before a bone marrow biopsy was performed revealing AML. This case presentation highlights an unusual presentation of disease and may assist outpatient physicians in identifying AML with isolated signs of GI bleeding. Early identification of AML as the predominant cause of GI manifestations may lead to better responses to treatment and increased likelihood of survival.

Autopsy studies predict the presence of any GI manifestation of disease in 25 percent of patients diagnosed with leukemia.³⁻⁴ Leukemic infiltrates, secondary inflammatory processes and infection are the most common culprits, with the ability to occur anywhere along the GI tract from the esophagus to the anus including the gallbladder and appendix.^{3,4} Symptoms can present as non-specific fever, abdominal pain, diarrhea, nausea, vomiting, abdominal distension or tenderness, making it difficult to isolate the cause of the patient's symptomatic complaints.³ Our patient did not possess any of these presenting symptoms and unfortunately, no relevant endoscopic studies were performed to find the root cause of GI involvement.

Furthermore, clinically significant bleeding may be found in up to 32 percent of thrombocytopenic patients with AML.⁹ The most frequent presentations of bleeding are cutaneous petechiae or bruising, epistaxis, vaginal bleeding, or hematuria.^{3,4} These manifestations have mostly been documented in cases of malignancy relapse, after chemotherapy, or following a bone marrow transplant.^{3,4,9} Rarely has GI bleeding been documented as the first manifestation of primary disease, such as in our patient.⁵ In addition, the amount of blood loss was sufficient to drop his hemoglobin count in a matter of weeks, which may have led to potentially life-threatening anemia, especially in an elderly individual.

Pathophysiology behind bleeding in patients with leukemia has historically been attributed to a patient's low platelet count, though more recent publications suggest there is no association between the two.^{5,9} Vinholt et al. found that clinically significant bleeding in AML is likely caused by reduced platelet function, due to a deficiency in platelet aggregation response and a reduced capacity for platelet activation.⁹ This may be an underlying reason for the occurrence of significant bleeding in the setting of AML with relatively high platelet counts, as seen in our patient with values consistently around $70 \times 10^9/L$. This platelet count is above the threshold that traditionally leads to clinically significant bleeding and points to another mechanism behind increased incidence of bleeding in AML.¹⁰

Most of the existing reports detailing GI bleeding in the setting of AML describe cases presenting with acute hemorrhage or cases that occurred after malignancy relapse and initiation of treatment.^{3,4,6,7} One case reported fatal GI bleeding after secondary formation of a granulocytic sarcoma.⁶ This report demonstrates a rare presentation of AML with chronic melena in an otherwise asymptomatic elderly patient.

Conclusions

Although AML commonly presents as episodes of bleeding secondary to a thrombocytopenic state or as alterations in lab values, gastrointestinal bleeding can be a presenting sign as well. We hope this detailed clinical course will prompt providers to keep AML on their list of differential diagnoses when encountering an elderly patient reporting dark stools. The early identification of GI involvement in the setting of AML could prevent otherwise severe consequences of bleeding and may improve outcomes of disease.

Reference

1. Kolitz JE. Overview of acute myeloid leukemia in adults. In: UpToDate, Post TW (Ed), UpToDate, Waltham, MA. (Assessed on January 25, 2022).
2. Vakiti A, Mewawalla P. Acute Myeloid Leukemia. Treasure Island (FL): StatPearls Publishing; 2022.
3. Ebert EC, Hagspiel KD. Gastrointestinal manifestations of leukemia. *J Gastroenterol Hepatol* 2012 ;27(3):458-63.
4. Sultan MT, Sajja KC, Gaspard GP. A Rare Presentation of Acute Myeloid Leukemia with Gastric Involvement. *The American Journal of Gastroenterology* 2021;116:S1009.
5. Raborn E, Kelts A, Stiemle C, Ali F, Valvano G, Jeng J, Mazza B. A Unique Presentation of GI Bleeding as a First Presentation of AML. *The American Journal of Gastroenterology* 2019;114:S1132
6. Saleh HA, Khatib G. Fatal gastrointestinal bleeding as the primary manifestation of granulocytic sarcoma in a patient with myelodysplastic syndrome. *J Fla Med Assoc* 1997;84(2):111-114.
7. Kmira, Z., Nesrine, B. S., Houneida, Z., Wafa, B. F., Aida, S., Yosra, B. Y., Monia, Z., Sriha, B., & Abderrahim, K. Severe hemorrhagic colitis in a patient with chronic myeloid leukemia in the blastic phase after dasatinib use. *World J Gastrointest Pathophysiol* 2013;4(3):59–62.
8. Evertt CR, Haggard ME, Levin WC. Extensive Leukemic infiltration of Gastrointestinal Tract during Apparent Remission in Acute Leukemia. *Blood* 1963;22(1):92-99.
9. Vinholt PJ, Knudsen GH, Sperling S, Frederiksen H, Nielsen C. Platelet function tests predict bleeding in patients with acute myeloid leukemia and thrombocytopenia. *Am J Hematol* 2019;94(8):891-901.
10. Weibert KE, Cook RJ, Sigouin CS, Rebullia P, Heddle NM. The risk of bleeding in thrombocytopenia patients with acute myeloid leukemia. *Haematologica* 2006; 91(11):1530-1537.