

Agranulocytosis After Fluconazole Treatment Mimicking Acute Promyelocytic Leukemia: A Case Report

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INTRODUCTION

Agranulocytosis is an acute condition with severe neutropenia. We report an interesting case of a 40-year-old man who presented at Panama City with neutropenia and was diagnosed with acute promyelocytic leukemia (APL). The patient had several-week history of malaise, fever, and hematuria after taking fluconazole for fungal infection. A diagnosis of APL at Panama City was based on morphological evaluation of bone marrow.

MATERIALS AND METHODS

The patient was subsequently transferred to our institution for diagnostic confirmation and treatment. Bone marrow aspirate slides from Panama City were reviewed and one unstained slide was sent for FISH analysis for PML/RARA. Additional bone marrow aspirate was obtained at our institution and was sent for flow cytometry, cytogenetics, FISH and PCR for PML/RARA.

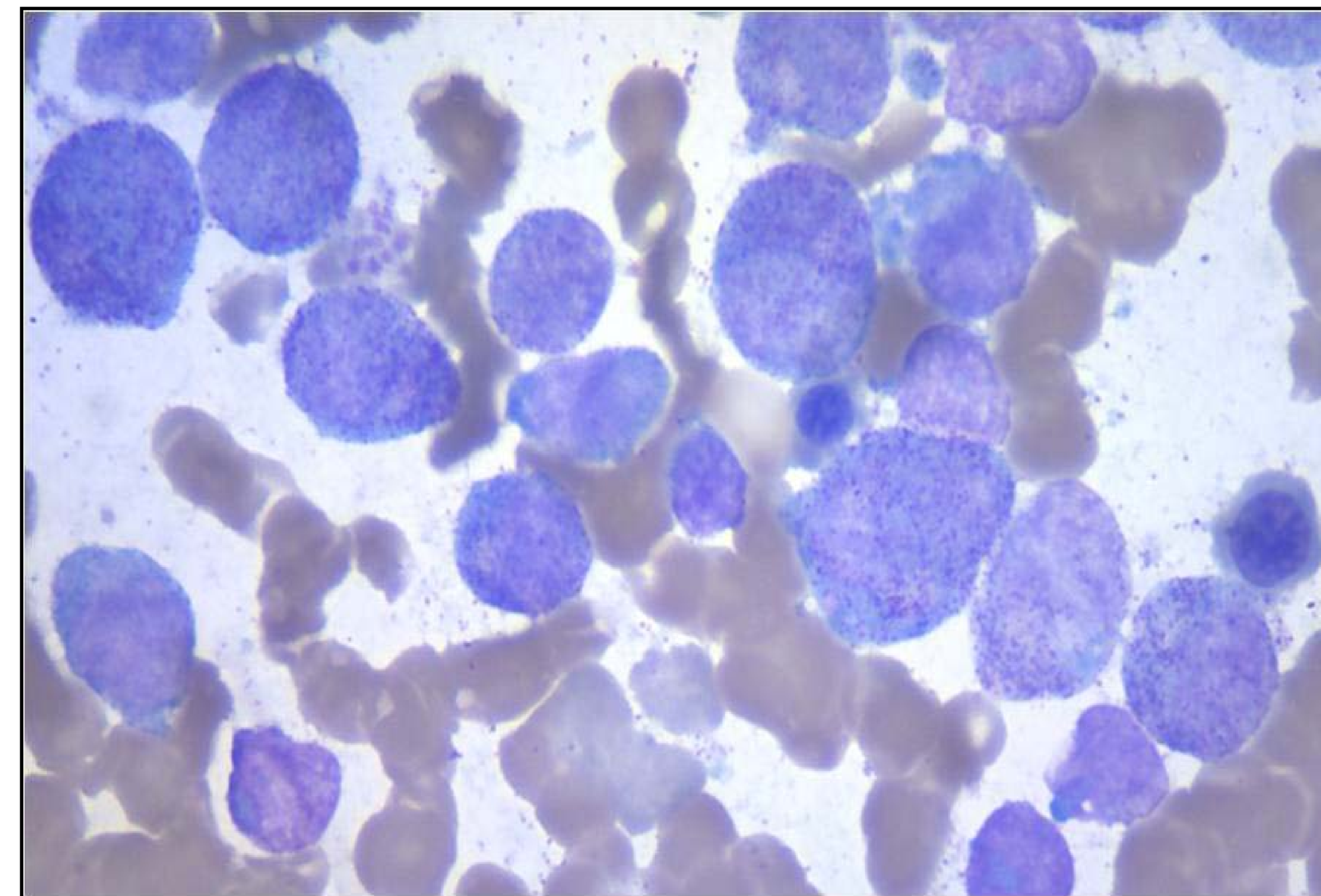


Fig. 1 Bone marrow aspirate (Panama City) reveals maturation arrest at the promyelocytic phase. Wright 100x

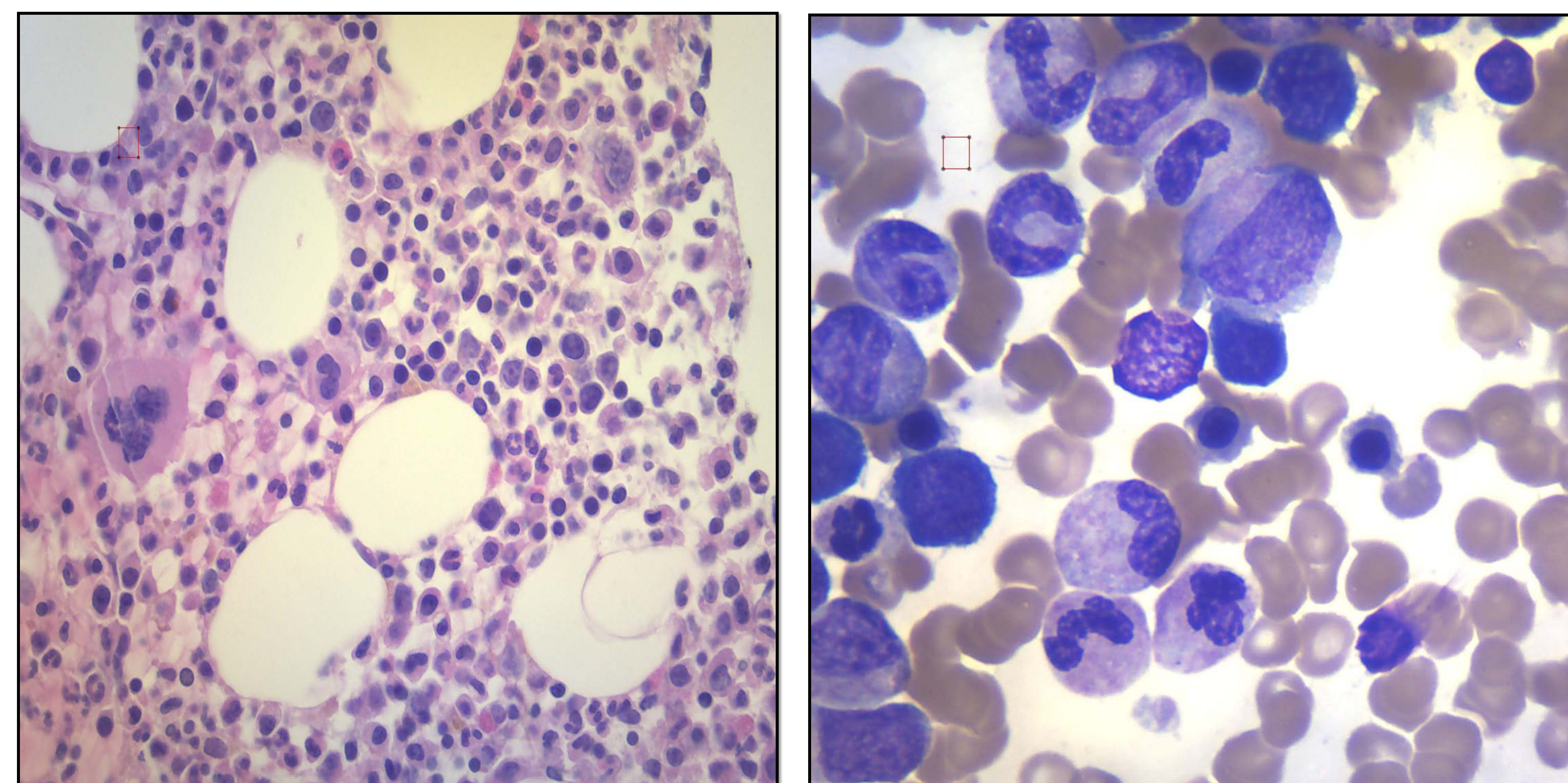


Fig. 2 Subsequent bone marrow biopsy (H&E 20x) and aspirate (Wright 50x) at our institution show normal hematopoiesis

RESULTS

Review of the bone marrow aspirate (Panama City) reveals maturation arrest at the promyelocytic phase (Figure 1). Neither Auer rods nor bundles of Auer rods are observed. Peripheral blood smear at our institution shows neutropenia with no leukemic cells. Bone marrow biopsy and aspirate show normal trilineage hematopoiesis (Figure 2). There is no evidence of APL with flow cytometry, FISH/PCR testing, or cytogenetics.

CONCLUSIONS

Agranulocytosis has been associated with many drugs including antiepileptics, antithyroid drugs, antibiotics (including fluconazole), cytotoxic drugs, gold, NSAIDs, and antifungals. Histologically, agranulocytosis can mimic APL with the presence of numerous promyelocytes containing many primary granules. However, bundles of Auer rods are typically not observed. Our case should alert the pathologists to be cautious in making a diagnosis of APL without proper investigation including flow cytometry and molecular studies to avoid misdiagnosis which may lead to inappropriate treatment.