A 66-year old male recently diagnosed with acute myeloblastic leukemia (AML) treated with azathioprine and venetoclax, on prophylaxis with acyclovir, moxifloxacin and isavuconazole and with multiple admissions for neutropenic fever:

- Presenting with 1 week of fevers, headaches, worsening fatigue and scattered erythematous nodules on the trunk and lower extremities.

**Clinical Presentation**

A 66-year old male recently diagnosed with acute myeloblastic leukemia (AML). He was treated with azathioprine and venetoclax, on prophylaxis with acyclovir, moxifloxacin and isavuconazole, and with multiple admissions for neutropenic fever. He presented with a week of fevers, headaches, worsening fatigue, and scattered erythematous nodules on the trunk and lower extremities.

**Microbiology**

- Rash consisted of several dozen 0.5-2.0 cm pink papulonodules, some with a pustular center, scattered throughout the trunk, lower extremities, and right arm (Figure 1).
- Infectious Disease and Dermatology consulted.
- Broad ddx including bacterial, fungal, atypical mycobacterial infection.
- Dermatologist performed punch biopsy of the skin (Figure 2).

**Hospital Course**

- Liposomal Amphotericin B 3mg/kg was added to the patient’s antibiotic regimen in addition to the azole.
- Susceptibility testing of the Fusarium isolates resulted 2 weeks later and showed an amphotericin MIC of 2, and a voriconazole MIC of >16.
- Amphotericin B was continued and isavuconazole was discontinued.
- Development of acute kidney injury (Cr rise from 2.1 to baseline 1.0) and focus of intraparenchymal hemorrhage in right frontal lobe during episode of confusion.

**Diagnosis**

- Pulmonary manifestations of disseminated fusariosis are common and can result in a high mortality rate. The key to diagnosis is knowledge of the disease and having a high index of suspicion.
- Fusarium can cause disseminated infection in immunocompromised patients, often resulting in a rapidly fatal outcome.
- Diagnosis in the immunocompromised patient is challenging and often requires a high index of suspicion.
- The gold standard for diagnosis is a positive fungal culture, followed by antifungal susceptibility testing.
- Biopsy findings may show hyaline hyphae and branching.
- The use of histopathologic grounds, with parallel fascicles separate cell walls and acute angle branchings. There are also numerous yeast forms. Culture would be necessary to definitively identify the fungal species.

**Remainder of Course**

- A hematopoietic stem cell transplantation (HSCT) was planned.
- Resolution of AKI and episode of confusion.
- ID planned for continuing Amphotericin for 3 months and until 1 month after HSCT.
- Resolution of skin lesions on one month follow up with ID.

**Figure 1. Rash Appearance**

A 66-year old male recently diagnosed with acute myeloblastic leukemia (AML) treated with azathioprine and venetoclax, on prophylaxis with acyclovir, moxifloxacin and isavuconazole and with multiple admissions for neutropenic fever. He presented with a week of fevers, headaches, worsening fatigue, and scattered erythematous nodules on the trunk and lower extremities.

**Figure 2. Biopsy Results & Representative Diagram**

**References**