Clinical Image

Blood plasmacytosis masquerading as a plasma cell neoplasm

A 67-year-old male came to the medicine clinic with low-grade fever, backache and generalized fatigue for three weeks. On examination, he had pallor, a fever of 99.4º F and tachycardia. There was no organomegaly or lymphadenopathy. CBC showed haemoglobin of 90 g/l, total leucocyte count of 26.8 x109/l and platelet count of 214 x109/l. In the white cell differential scatter plot, a large population of cells was identified in the high fluorescence region (figure 1). Blood film showed 39% plasma cells, including lymphoplasmacytoid lymphocytes (figure 2). Suspecting a plasma cell neoplasm, an extensive evaluation was planned, including bone marrow examination (BME), imaging and flow cytometry. Serum creatinine was 1.2 mg/dl, serum calcium was 9 mg/dl, and total protein was 6.2 g/dl. BME showed well-formed histiocytic and epithelioid granuloma. Flow cytometry evaluation and imaging studies were unremarkable. AFB was negative; however, the Widal test was positive for *Salmonella typhi* with a titre of >1:320. Blood culture confirmed *Salmonella typhi* infection. He was started on intravenous antibiotics with a complete resolution of fever in three days. Plasmacytosis may also be seen in infective conditions. Laboratory physicians may consider infection-related plasmacytosis in the differential diagnosis of plasma cell dyscrasia, irrespective of the patient's age, before proceeding with an extensive and invasive evaluation like BME and other expensive tests, especially in finite resource settings.

Legends

Figure 1 White cell differential scatter plot (SFL vs SSC) on a Sysmex XN- series hematology analyzer shows a large population of cells in the high fluorescence region (circle). The lymphocytes, monocytes, neutrophils, and eosinophils are depicted in clusters with respective colour coding: lavender, green, light blue, and orange. The dark blue population at the scatterplot's base represents debris.

Figure 2 Peripheral blood film shows 39% plasma cells including a few lymphoplasmacytoid lymphocytes (x1000 Leishman & Giemsa)

UNDER PEER REVIEW

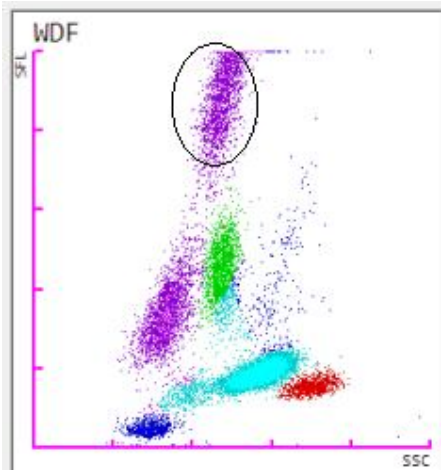

Fig. 1

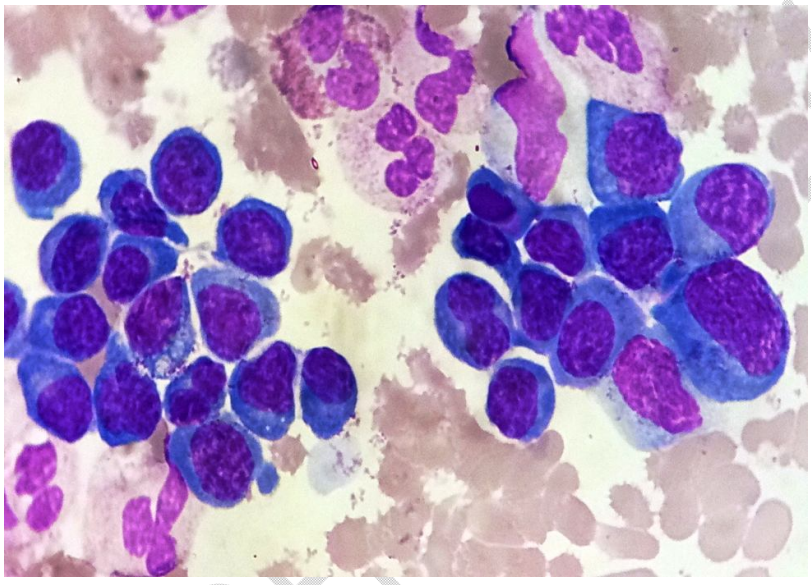

Figure 2

UNDER REVIEW