Myelofibrosis, a cytokine mediated process of bone marrow stroma and its replacement with fibrous connective tissue, has been associated with neoplastic conditions, autoimmune disorders, and granulomatous diseases among other etiologies. Although Epstein-Barr virus (EBV) infection has been associated with pancytopenia, its rare association with myelofibrosis has only been reported in few pediatric patients.

A recent case of a 21 year old female who presented with 3 week history of fever and anorexia and was found to have pancytopenia and acute EBV infection, and upon examination of the bone marrow, reticulin fibrosis and gelatinous atrophy of the bone marrow is reported. Her symptomatology and blood counts normalized upon institution of antiviral treatment.

Wright-stained slides of the peripheral smear, bone marrow aspirate, in addition to the Hematoxylin and Eosin-stained slides of the bone marrow biopsy and clot sections were evaluated. Iron, Acid fast bacilli (AFB), Gomori Methenamine Silver (GMS), and reticulin stains of the bone marrow biopsy and the clot sections were examined.

The peripheral smear showed hypochromic anemia with slight polychromasia. White blood cells and platelets were normal in morphology but decreased in number. There was no increase in schistocytes. Bone marrow aspirate and touch preparations showed normal trilineage maturation and no increase in blasts. The bone marrow was hypocellular for age (40%), with no evidence of granuloma or malignancy, but with focal areas of serous atrophy. Iron, Acid fast bacilli (AFB), Gomori Methenamine Silver (GMS), and reticulin stains showed increased iron stores with no ringed-sideroblasts. AFB and GMS stains were negative. However, the reticulin stain showed moderate reticulin fibrosis with diffuse increase in reticulin fibers, occasional denser strands, and with many intersections, most consistent with grade 2 myelofibrosis.

The patient’s pancytopenia was most likely secondary to bone marrow hypocellularity with reticulin fibrosis. Etiologies of hypocellularity in this patient were considered to include viral infections, immune disorders, and medications, which remained uncompensated for due to failure of bone marrow. Subsequent serologic testing confirmed the diagnosis of acute EBV infection. The patient was started on valacyclovir, with resolution of her symptomatology and improvement of her complete blood count after 5 days of treatment. To the best of our knowledge, this presentation of acute EBV infection has not been previously described in adult patients.