Autoinflammation and Myelofibrosis: Report of a Case

Otoenflamasyon ve Myelofibrozis: Olgu Sunumu

Prasad R. Koduri[1], Amina Shaik[2], Durga Rao Vegulada[3]

[1]*Mahavir Hospital and Research Centre, Department of Medicine, Hyderabad, India*
[2]*Apollo Hospital, Division of Hematology Laboratory, Hyderabad, India*
[3]*Genes N Life Healthcare, Department of Molecular Diagnostics, Hyderabad, India*

To the Editor,

Adult-onset Still's disease (AOSD) is a rare systemic autoinflammatory disease of unknown etiology [1,2]. We describe the case of a young woman with AOSD who presented with extreme anemia and was diagnosed with secondary myelofibrosis. Treatment with prednisolone resulted in durable complete clinical and hematological response. She remains in excellent health, with normal blood counts over the course of 4 years of follow-up.

A 17-year-old girl was admitted to Mahavir Hospital in October 2018 with fever, shortness of breath, and pain in the knees, ankles, elbows, and wrists. She did not describe small joint arthralgia or photosensitivity. She had been admitted elsewhere in March 2018 with a history of fever, pain in the knees and elbows, and severe anemia. She was transfused with packed erythrocytes and discharged on analgesics, oral iron, and folic acid. She was hospitalized again in May, July, and August of 2018 with similar complaints and required transfusion support. She was well between the flares of joint pains and fever. A bone marrow aspirate in August 2018 resulted in a dry tap; a trephine biopsy was not performed. On admission to Mahavir Hospital in October, her temperature was 38.9 °C, pulse 134/min, and respiration 24/min. There was no skin rash, lymphadenopathy, or organomegaly.

Her hemoglobin (Hb) level was 1.3 g/dL, mean corpuscular volume was 82 fL, and reticulocytes were 0.2%; leukocytes and platelets were normal. Blood smear examination showed normal red cell morphology. Results of routine biochemical tests including serum total and direct bilirubin and lactate dehydrogenase were normal. An abdominal ultrasound showed mild splenomegaly. Serum ferritin was 4084 ng/mL. Results of direct antiglobulin testing, antinuclear antibodies, and rheumatoid factor were negative. Bone marrow aspiration resulted in a dry tap; a trephine biopsy showed hypercellular marrow, normal trilineage hematopoiesis, scattered non-paratrabecular aggregates of lymphocytes, and MF-1 grade reticulin fibrosis (Figure 1). Tests for *JAK2 V617F* and *CALR* mutations were negative. The patient was transfused with four units of packed erythrocytes and discharged on oral prednisolone at 40 mg daily. Eight weeks later, she was asymptomatic and her Hb was 12.3 g/dL; she had stopped taking prednisolone on her own 10 days earlier. She remains well on no medications and her Hb was 13.4 g/dL in October 2022.

The findings of this patient satisfy the Yamaguchi criteria [3] for the diagnosis of AOSD. Its rarity and lack of diagnostic biomarkers often result in a delay in the diagnosis of AOSD [2]. The marrow biopsy findings, normal red cell morphology, exclusion of alternate causes of myelofibrosis, and response to corticosteroid therapy in our case are also consistent with a diagnosis of autoimmune myelofibrosis. However, the formal diagnostic criteria of autoimmune myelofibrosis include the absence of preexisting "well-defined" autoimmune disease or autoimmune markers [4,5]. Our patient is considered to have autoinflammation-related myelofibrosis. We are not aware of prior reports of secondary myelofibrosis in AOSD. Whether the condition is underrecognized is not clear [2,6,7,8].

The occurrence of myelofibrosis in AOSD represents a bridge between autoimmunity and autoinflammation. A study of bone marrow reticulin in AOSD and other autoinflammatory diseases may help in understanding the role of systemic inflammation in bone marrow fibrosis.

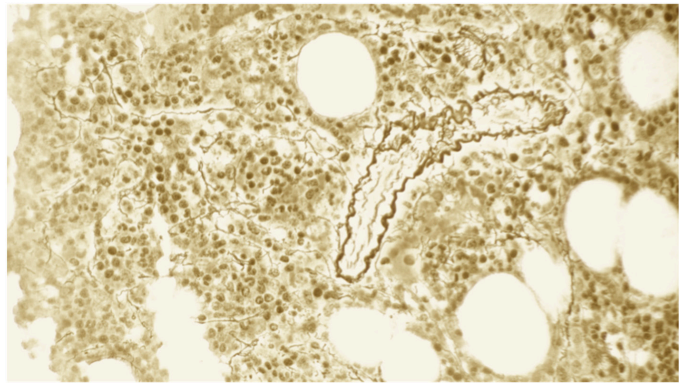

Figure 1. Marrow trephine biopsy shows grade 1 reticulin fibrosis (200^{x}).

Keywords: Autoinflammation, Still's disease, Myelofibrosis, Anemia

Anahtar Sözcükler: Otoenflamasyon, Still hastalığı, Myelofibrozis, Anemi

Ethics

Informed Consent: Written informed consent was obtained from the patient to publish the details of the medical case and the image of the marrow reticulin staining.

Authorship Contributions

Data Collection or Processing- D.R.; Analysis or Interpretation- A.S.; Writing- P.R.K.

Conflict of Interest: No conflict of interest was declared by the authors.

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Address for Correspondence/Yazışma Adresi: Prasad R. Koduri, M.D., Mahavir Hospital and Research Centre, Department of Medicine, Hyderabad, India
E-mail : prkoduri@yahoo.com ORCID: orcid.org/0000-0003-2835-7549

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