



Paravertebral extramedullary hematopoiesis in a case of myelodysplastic syndrome with ring sideroblasts and an *SF3B1* mutation

Chie Asou¹ · Tomoya Maeda¹ · Maho Ishikawa¹ · Daisuke Okamura¹ · Mika Kohri¹ · Naoki Takahashi¹ · Kunihiro Tsukasaki¹ · Hirozo Sakaguchi² · Tsugumi Satoh³ · Hidekazu Kayano⁴ · Akira Matsuda^{1,5} · Norio Asou¹

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Abstract

We present the case of a 56-year-old male patient with paravertebral extramedullary hematopoiesis (EMH) secondary to myelodysplastic syndrome with ring sideroblasts and multilineage dysplasia. In a routine health checkup over 5 years prior, he presented with asymptomatic mild anemia and a posterior mediastinal mass. Pathological and cytomorphological findings of the resected paravertebral mass were similar to those of his bone marrow specimen, and included cellularity with erythroid hyperplasia, multilineage dysplastic changes, and the presence of ring sideroblasts. A concordant *SF3B1* mutation was detected in both bone marrow and paravertebral mass samples, suggesting that the EMH cells were derived from the bone marrow.

Keywords Myelodysplastic syndromes · Ring sideroblasts · Extramedullary hematopoiesis · Paravertebral region · *SF3B1* mutation

Introduction

Extramedullary hematopoiesis (EMH) is a rare event that mainly complicates myeloproliferative neoplasms (MPNs) and chronic anemic disorders [1–4]. Few patients have EMH in association with myelodysplastic syndromes (MDSs) [4]. Although EMH usually occurs in the liver and spleen, which are the location of fetal hematopoiesis, even ectopic locations such as paravertebral and retroperitoneal tissues may

be involved [1–4]. We herein present a case of MDS with ring sideroblasts (MDS-RS) carrying an *SF3B1* mutation who developed paravertebral EMH.

Case report

A 56-year-old male with a history of hypertension, hypercholesterolemia and gall stones was referred to our hospital because of the presence of a posterior mediastinal mass. Asymptomatic mild anemia was found in his medical examinations during the previous 5 years (hemoglobin levels slightly decreased from 13.7 to 11.7 g/dL). His liver and spleen were not palpable. His chest radiography revealed a sharply demarcated mass in the left paravertebral thoracic region that had increased in size compared with that detected in a health check 5 years previously (Fig. 1A). Computed tomography (CT) scan showed a 25 mm homogenous oval mass adjacent to the 10th thoracic vertebral column (Fig. 1B). Magnetic resonance imaging (MRI) of the paraspinal mass revealed a low signal on T1- and T2-weighted images (Fig. 1C, D), and a high signal on the short-TI inversion recovery. On ¹⁸F-fluorodeoxyglucose-positron emission tomography/CT scanning, the mass had a maximum

✉ Chie Asou
achie5@saitama-med.ac.jp

¹ Department of Hematology, International Medical Center, Saitama Medical University, 1397-1 Yamane, Hidaka, Saitama 350-1298, Japan

² Department of Thoracic Surgery, International Medical Center, Saitama Medical University, Saitama, Japan

³ Department of Pathology, International Medical Center, Saitama Medical University, Saitama, Japan

⁴ Faculty of Health and Medical Care, Saitama Medical University, Saitama, Japan

⁵ Department of Medical Education, Saitama Medical University, Saitama, Japan