

**Clinical Image***Open Access, Volume 2***Myelodysplastic syndrome: Discordant involvement of the marrow as observed in the bone marrow biopsy sections****\*Corresponding Author: Anwarul Islam, MD**

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Received: Feb 08, 2021

Accepted: Mar 15, 2021

Published: Mar 17, 2021

Archived: www.jcimcr.org

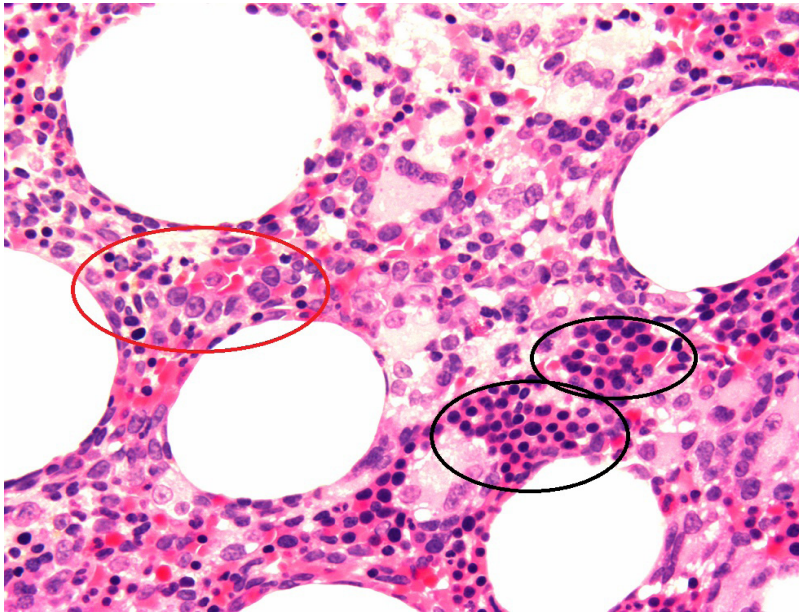
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**Clinical image description**

Myelodysplastic syndromes (MDS) are a diverse group of hematological disorders that affect the blood and bone marrow. Laboratory diagnosis of MDS is almost exclusively based on the morphology of hematopoietic cells observed in smears of peripheral blood and bone marrow and this depends solely on the presence of dysplastic changes observed in the granuloid, erythroid, and megakaryocytic cells [1,2]. Up until now evaluation of sections of bone marrow trephine biopsy specimen did not play a significant role in its diagnosis. Bone marrow is not always involved uniformly in pathological processes and morphological discordance is well known [3,4]. This is particularly true for patients with MDS. We present a case of 75 years old white male with a diagnosis of MDS. His bone marrow biopsy section showed areas of clusters of immature myeloid precursor cells (Figure 1 - red circle) and areas of clusters of immature erythroid precursor cells (Figure 1 - black circles) in different areas of the same section admixed with mature hematopoietic cells.

It is postulated that during bone marrow aspiration if the tip of the aspirating needle encountered one of the areas of clusters of immature myeloid precursor cells (Figure 1-red circle) the aspirate may have contained 15-20% or more blast cells and the patient might have been misleadingly diagnosed as high risk MDS or even de novo acute myeloid leukemia. On the other hand during bone marrow aspiration if the tip of the aspirating needle missed these areas of focal collection of myeloid blast cells and struck an area of the marrow containing clusters of erythroid precursor cells (Figure 1- black circles) such a bone marrow aspirate would have few myeloblasts and more erythroid precursors and the patient might have been considered as of low-risk MDS. Alternatively, in this situation, the case could have been misleadingly diagnosed as erythroleukemia (FAB M6). It is proposed that evaluation of sections of bone marrow biopsy should be included in the diagnosis and management of patients with MDS.

**Citation:** Islam A. Myelodysplastic syndrome: Discordant involvement of the marrow as observed in the bone marrow biopsy sections. *J Clin Images Med Case Rep.* 2021; 2(2): 1029.



**Figure 1:** Abnormal localization of immature (blasts) myeloid precursor cells – cells within red circle and clusters of erythroid precursor cells – cells within black circles.

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