Myelodysplastic syndrome versus idiopathic cytopenia of undetermined significance: the role of morphology in distinguishing between these entities

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Myelodysplastic syndrome (MDS) is a heterogeneous group of diseases characterized by ineffective and dysplastic hematopoiesis and pancytopenia in the peripheral blood[1]. Minimal diagnostic criteria for MDS have been discussed by several working groups. The term idiopathic cytopenia of undetermined significance (ICUS) has been proposed to define patients who do not fill minimal criteria for MDS but present with persistent cytopenia not attributable to a hematological or non-hematological disease[2]. In medical services where immunohistochemistry, cytogenetics and studies of progenitor cell assays are still not available, the morphologic parameters may be the center of the diagnosis of ICUS. Several working groups have also discussed minimal morphological criteria for 'bone marrow dysplasia'. Based on these discussions, at least 10% of all cells in a given lineage should produce signs of dysplasia to fill this important criterion[3]. Patients with ICUS present mild dysplasia in one or more hematopoietic lineages. Figures 1 & 2 illustrate the myelogram of one patient with ICUS and one patient with MDS showing the levels of dysplasia in both settings. Distinguishing between these entities is important to understand the similarities and differences in pathologic mechanisms of the two hematologic diseases and so to direct the correct management of patients.

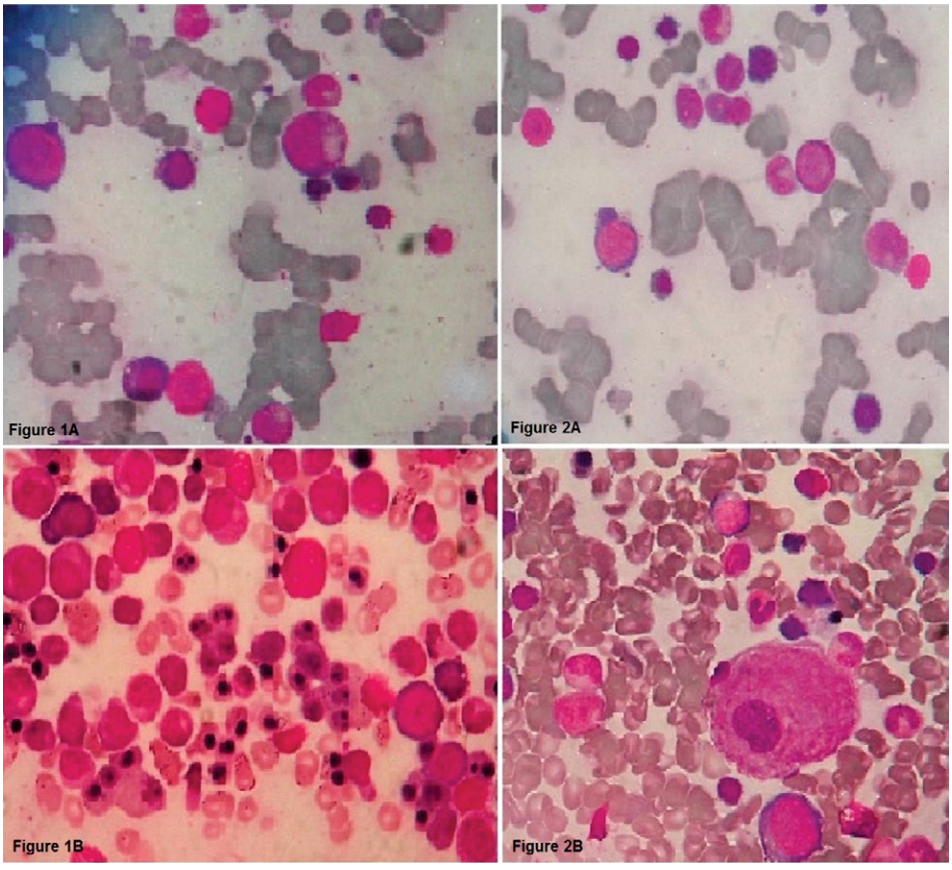

Figure 1A and 1B – Mild dyserythropoiesis (<10%) in patient with ICUS; presence of blabs
Figure 2A – Dyserythropoiesis (>10%)
Figure 2B – Dysmegakaryopoiesis; presence of blasts in patient with MDS (magnification: 1000x; HE stain)

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