Myelodysplastic Syndrome: Refractory Anemia with Ringed Sideroblasts (RARS)

Authors: James W Vardiman

Category: Myeloid Neoplasms and acute leukemia (WHO 2016) > Myelodysplastic Syndromes (MDS) > MDS with Ring Sideroblasts (MDS-RS)

Number of Units: 5

Myelodysplastic Syndrome: Refractory Anemia with Ringed Sideroblasts (RARS) - 2.

Image ID: 1437

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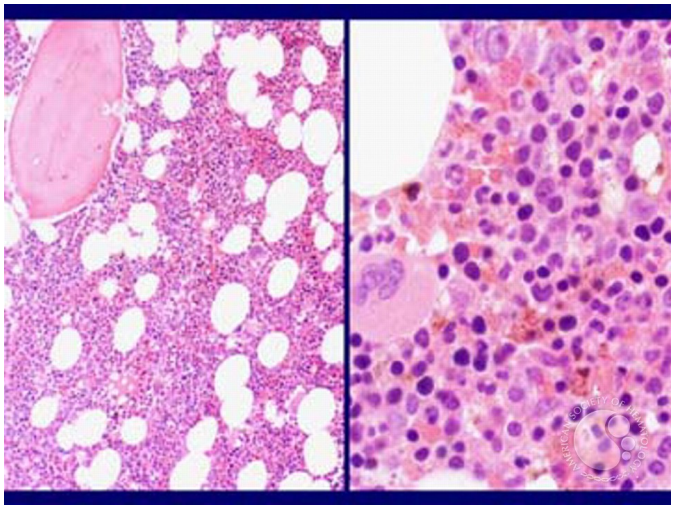
Description: Refractory anemia with ringed sideroblasts (RARS). Bone marrow biopsy specimen (H & E stain). The bone marrow biopsy is mildly hypercellular (left panel), and shows erythroid proliferation (right panel). Megakaryocytes are present in normal number, and have normal morphology.



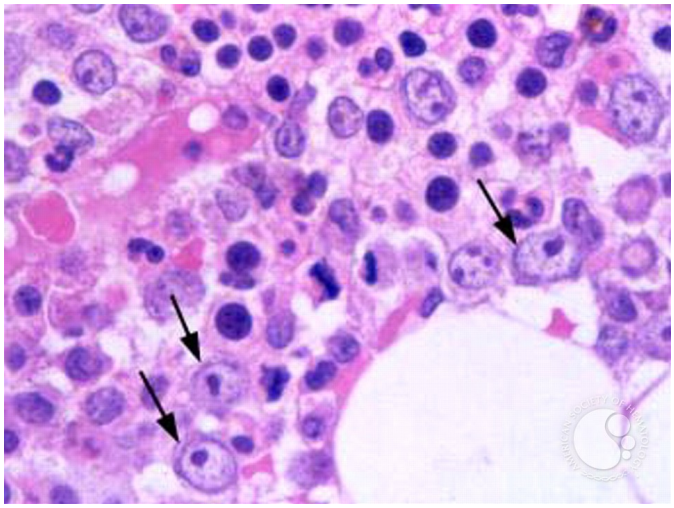
Myelodysplastic Syndrome: Refractory Anemia with Ringed Sideroblasts (RARS) - 3.

Image ID: 1438

Authors: James W Vardiman

Category: Myeloid Neoplasms and acute leukemia (WHO 2016) > Myelodysplastic Syndromes (MDS) > MDS with Ring Sideroblasts (MDS-RS)

Description: Refractory anemia with ringed sideroblasts (RARS). Bone marrow biopsy specimen (H & E stain). This high power view of the biopsy illustrates the erythroid hyperplasia. The immature cells at the arrows are immature erythroid precursors, which are characterized by a round to oval nucleus with vesicular chromatin pattern, and prominent, often comma-shaped nucleoli, and a modest rim of blue-grey (amphophilic) cytoplasm.



Myelodysplastic Syndrome: Refractory Anemia with Ringed Sideroblasts (RARS) - 4.

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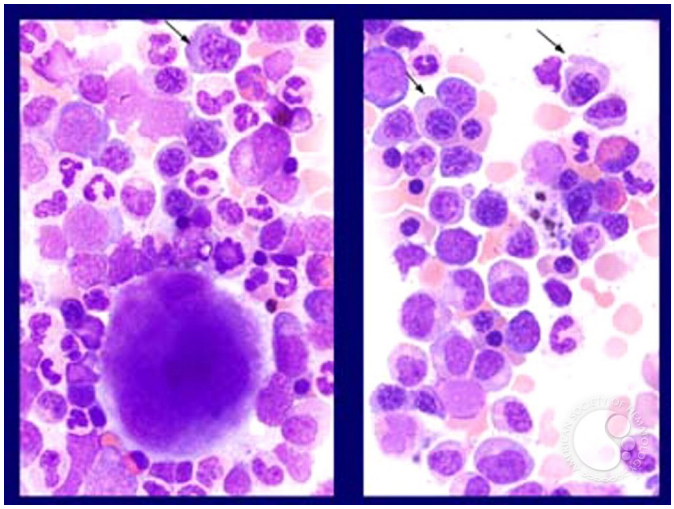
Description: Refractory anemia with ringed sideroblasts (RARS). Bone marrow aspirate smear (Wright-Giemsa stain). The two panels in this slide illustrate that the megakaryocytes and the granulocytes show normal morphology. The erythroid precursors in this slide do show some mild nuclear/cytoplasmic dyssynchrony (arrow).



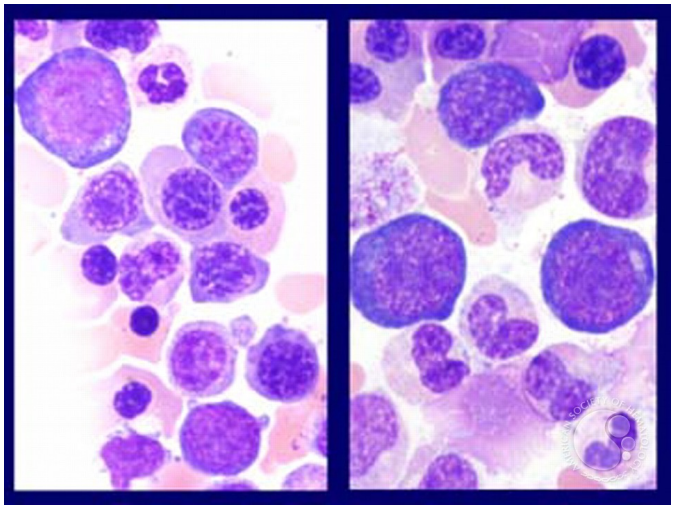
Myelodysplastic Syndrome: Refractory Anemia with Ringed Sideroblasts (RARS) - 5.

Image ID: 1440

Authors: James W Vardiman

Category: Myeloid Neoplasms and acute leukemia (WHO 2016) > Myelodysplastic Syndromes (MDS) > MDS with Ring Sideroblasts (MDS-RS)

Description: Refractory anemia with ringed sideroblasts (RARS). Bone marrow aspirate smear (Wright-Giemsa stain). In this slide, there are mild megaloblastoid changes of the erythroid precursors. The morphologic features of the erythroid cells are variable in RARS (see next slide), but the granulocytes have no dysplastic features in this case.



Myelodysplastic Syndrome: Refractory Anemia with Ringed Sideroblasts (RARS) - 6.

Image ID: 1441

Authors: James W Vardiman

Category: Myeloid Neoplasms and acute leukemia (WHO 2016) > Myelodysplastic Syndromes (MDS) > MDS with Ring Sideroblasts (MDS-RS)

Description: Refractory anemia with ringed sideroblasts (RARS). Bone marrow aspirate smear (Wright-Giemsa stain). This composite shows erythroid precursors from RARS. They vary from mildly dyspoietic cells to large, bizarre, multinucleated cells.