

In patients with myelodysplastic syndromes, dysplasia of the bone marrow may lead to increased infection susceptibility because white blood cells are affected. A decreased innate immune response predisposes patients to infections.

Bleeding

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Bleeding disorders are characterized by defects in hemostasis that lead to an increased susceptibility to bleeding. Patients with myelodysplastic syndromes may present with thrombocytopenia, predisposing them to bleeding.

Diagnosis

Ringed Sideroblasts

Ringed Cinder-block

Ringed sideroblasts are a type of erythrocyte characterized by a perinuclear ring. This mitochondrial coloration is due to iron, so is best visualized with a Prussian Blue stain.

Howell-Jolly Bodies

Howling-Jolly Santa

Howell-Jolly bodies are seen in the blood smear of patients with myelodysplastic syndromes. They are a collection of basophilic remnants of DNA found in circulating immature RBCs that are normally removed by the spleen.

Pseudo-Pelger-Huet Anomaly

Sumo-player-duet with Animal

Pseudo-Pelger-Huet anomaly can be seen in patients with myelodysplastic syndromes. It is characterized by atypical granulocytes on peripheral blood smear, often with bilobed nuclei.

Bilobed Neutrophils

Nude-trojan with 2 Balloons

The pseudo-pelger-huet anomaly is characterized by neutrophils with bilobed or dumbbell-shaped nuclei on peripheral blood smear.

Management

Supportive Care

Supportive IV bags

Myelodysplastic syndromes are typically refractory to treatment. While bone marrow transplant may lead to remission, not all patients are candidates. This disease often affects elderly people, who are often poor candidates for such invasive treatment. As such, patients are typically managed supportively.

Bone Marrow Transplant

Bone Train-plant

Bone marrow transplant may be curative or achieve remission, but not all patients are candidates. Patients must first undergo bone marrow ablation via chemotherapeutic agents, followed by the transplantation of healthy bone marrow.

Considerations

Acute Myelogenous Leukemia (AML)

American Monkey Legion (AML)

Acute myelogenous leukemia (AML) is a malignant neoplastic disease that arises from myeloid cell lines. It is characterized by the proliferation of immature, nonfunctional cells in the bone marrow that are subsequently released into the bloodstream. It occurs with greater frequency in patients with myelodysplastic syndromes.