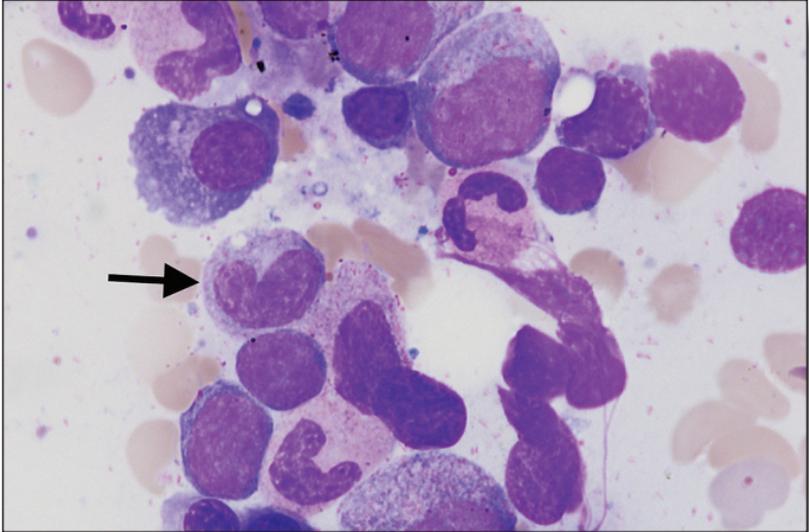


Monocyte

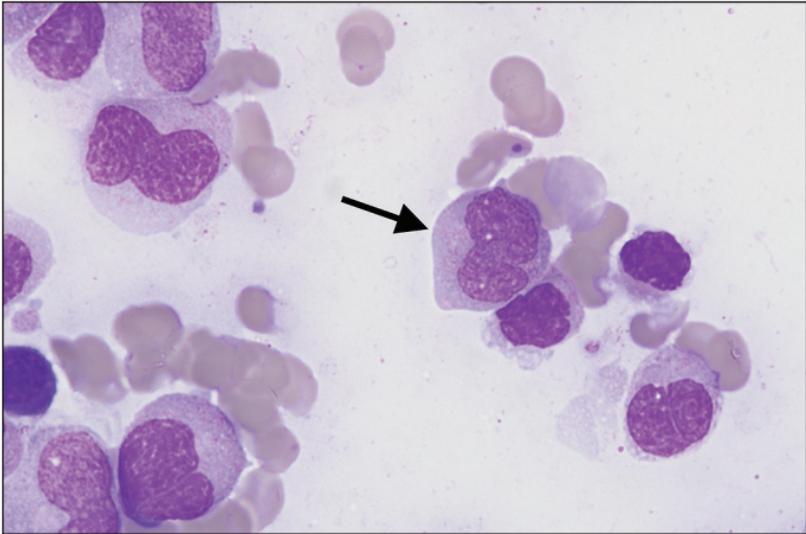


Appearance: Round to oval with abundant gray or gray-blue cytoplasm that may contain vacuoles and/or fine azurophilic granules. Pseudopod-like cytoplasmic extensions may be seen. Nucleus is often indented but may be band-like. Chromatin is only slightly clumped, and nucleoli are seen only rarely.

Size: 12-20 μm in diameter.

Special features: Monocytes are a normal component of bone marrow. Increased numbers may be seen in a variety of reactive conditions even in the absence of peripheral blood monocytosis.

Monocyte, Immature (Promonocyte)

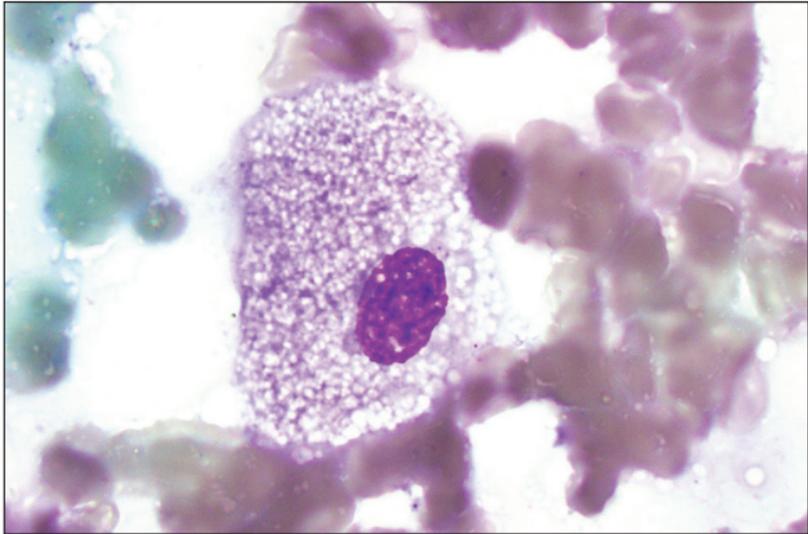


Appearance: The cell is larger than a mature monocyte, with a convoluted or folded nucleus. The chromatin pattern is fine, and nucleoli are infrequently seen. Vacuoles and granules are less numerous than in normal monocytes. Monoblasts, not shown but considered together in this category for proficiency testing purposes, have a single round to oval nucleus with finely dispersed chromatin and prominent nucleoli.

Size: Large cells ranging from 15-25 μm in diameter.

Special features: Promonocytes are considered blast equivalents and are included in the blast count when performing a manual bone marrow differential count.

Foamy Macrophage

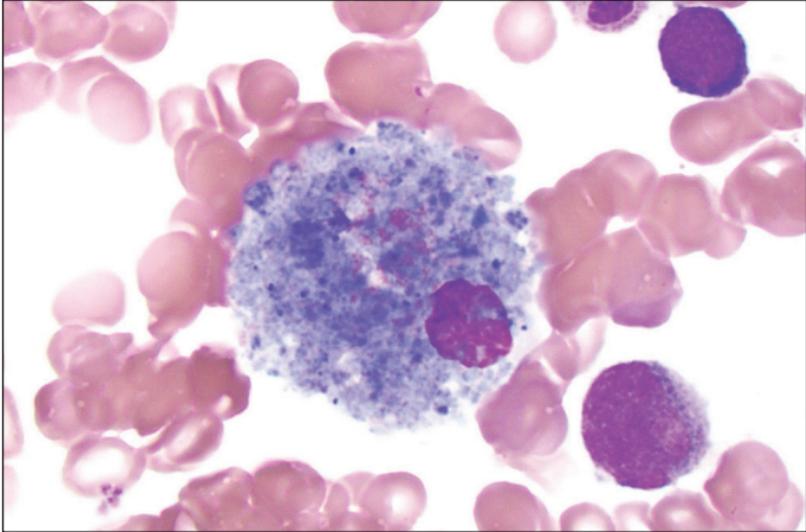


Appearance: Round to oval with abundant cytoplasm filled with numerous small vacuoles that lend a “foamy” appearance to the cell. Nuclear features are similar to those of normal monocytes or macrophages.

Size: Large cells ranging up to 90 μm in diameter.

Special features: In Niemann-Pick disease, foamy macrophages result from accumulation of sphingomyelin in lysosomes due to deficiency of sphingomyelinase. May be encountered in other storage diseases and in association with dyslipidemias, fat necrosis, and lipogranulomas.

Sea-Blue Histiocyte

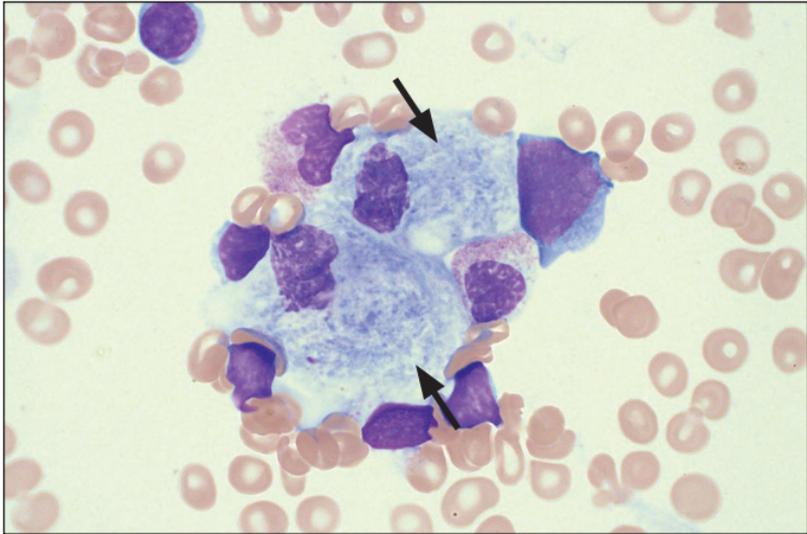


Appearance: Round to oval with abundant cytoplasm filled with numerous coarse granules that stain blue or blue-green in Wright-Giemsa–stained smears. Single small nucleus, often eccentrically placed.

Size: Large cells ranging from 20-60 μm in diameter.

Special features: May be encountered in the setting of bone marrow conditions with high cell turnover, including chronic myeloid leukemia, *BCR-ABL1* positive; other myeloproliferative neoplasms; and myelodysplastic syndrome. Also seen in association with dyslipidemias and type C Niemann-Pick disease.

Gaucher Cell

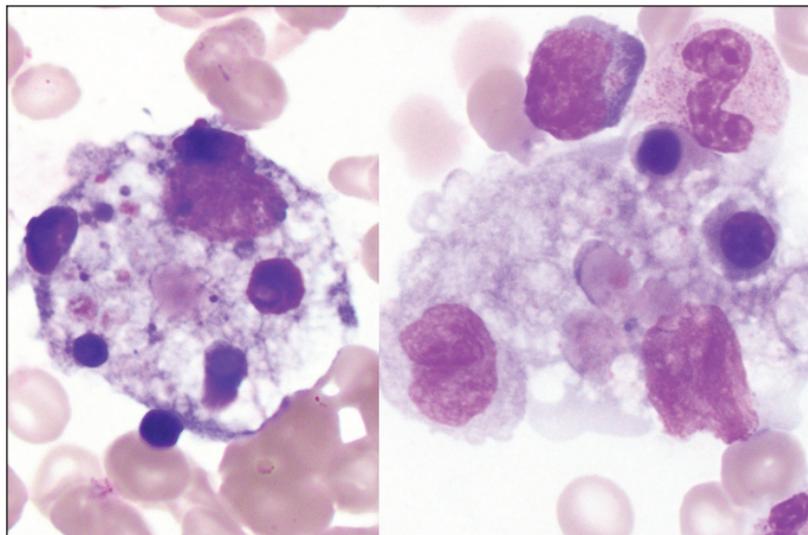


Appearance: Large round or oval cell with a small, eccentrically placed nucleus that is round or oval and variably irregular. Abundant cytoplasm that is blue or blue-gray with striations, lending a characteristic “wrinkled tissue paper” appearance.

Size: 20-100 μm in diameter.

Special features: Gaucher cells result from accumulation of glycosphingolipids in lysosomes due to deficiency of beta-glucocerebrosidase in Gaucher disease. Pseudo-Gaucher cells may be seen in the setting of hematologic neoplasms with high cell turnover, such as chronic myeloid leukemia, *BCR-ABL1* positive.

Hemophagocytic Histiocyte



Appearance: Round to oval with abundant cytoplasm containing one or more erythrocytes, leukocytes, and/or platelets. Vacuoles and cellular debris may also be seen in the cytoplasm. Nucleus is typically small and inconspicuous.

Size: 20-50 μm in diameter.

Special features: Ingested cells may include both mature and immature forms. Hemophagocytic histiocytes are seen in many cases of hemophagocytic lymphohistiocytosis (HLH), which may be either familial (primary) or acquired (secondary). Acquired HLH is typically triggered by infection (especially Epstein-Barr or other viral infections) associated with malignancies (such as T-cell or NK-cell lymphomas).