Normal BM cells morphology

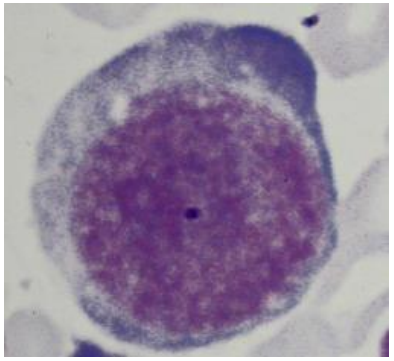
Prof Peretz Resnitzky •

Erythroid Line

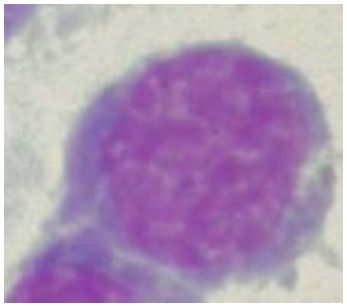
Progenitor cell compartment

Stem cell Compartment.

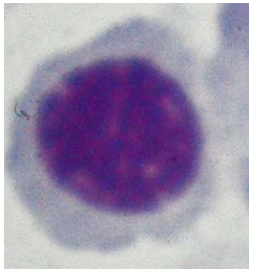
No specific morphological features

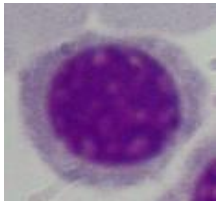


Pronormoblast



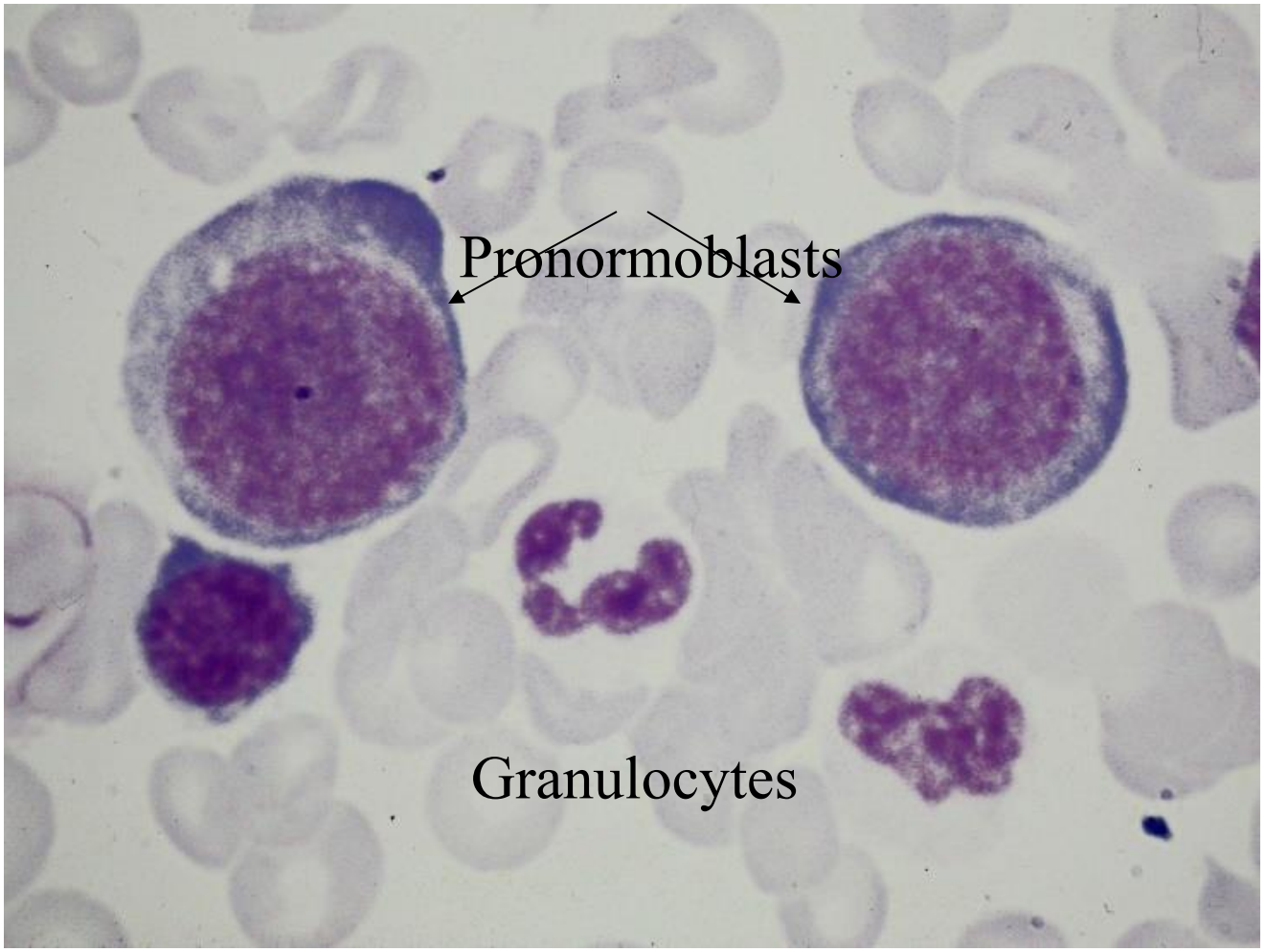
Basophilic normoblast

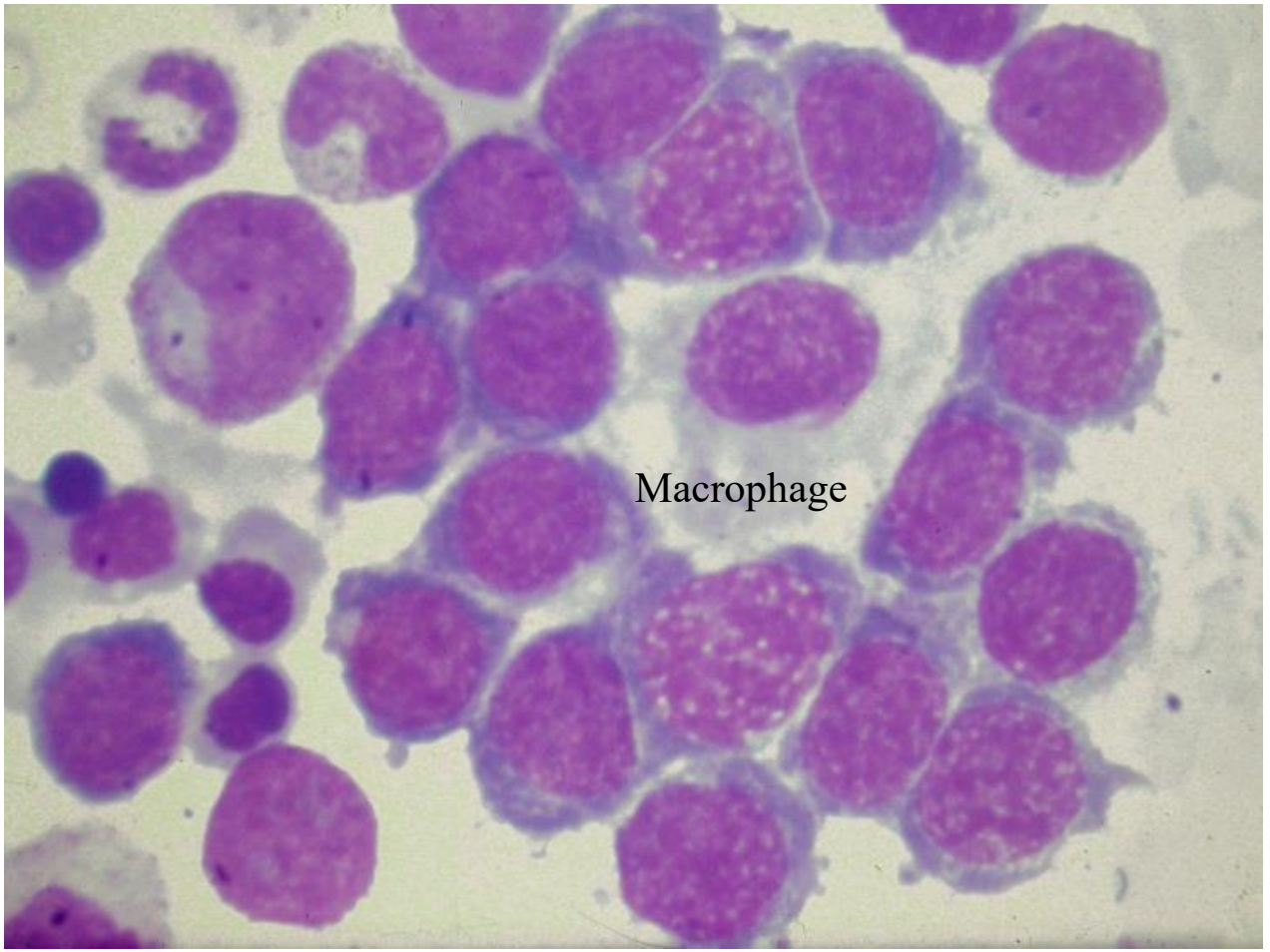




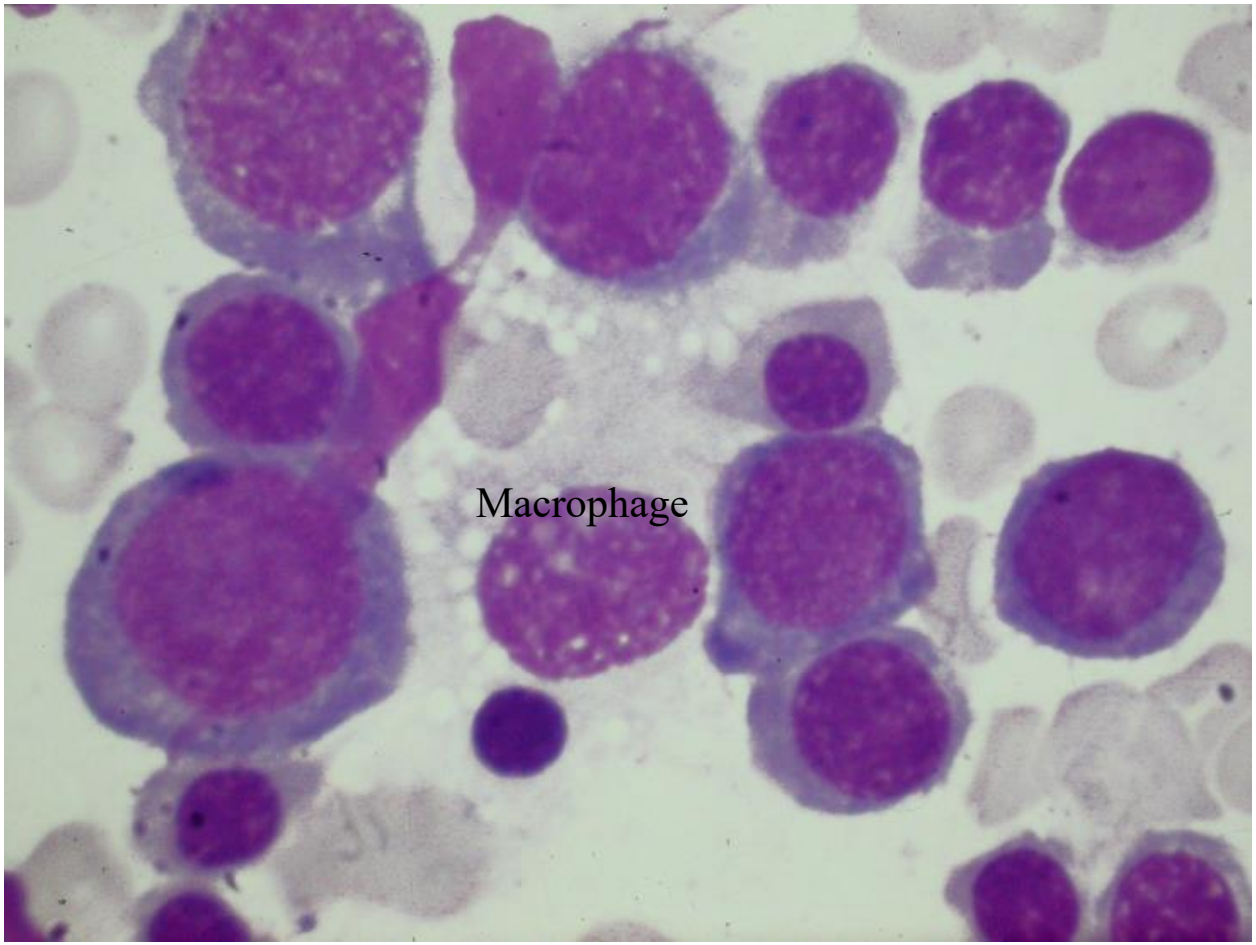
Polychromatophilic & ortochromatic (late or mature)

Reticulocyte

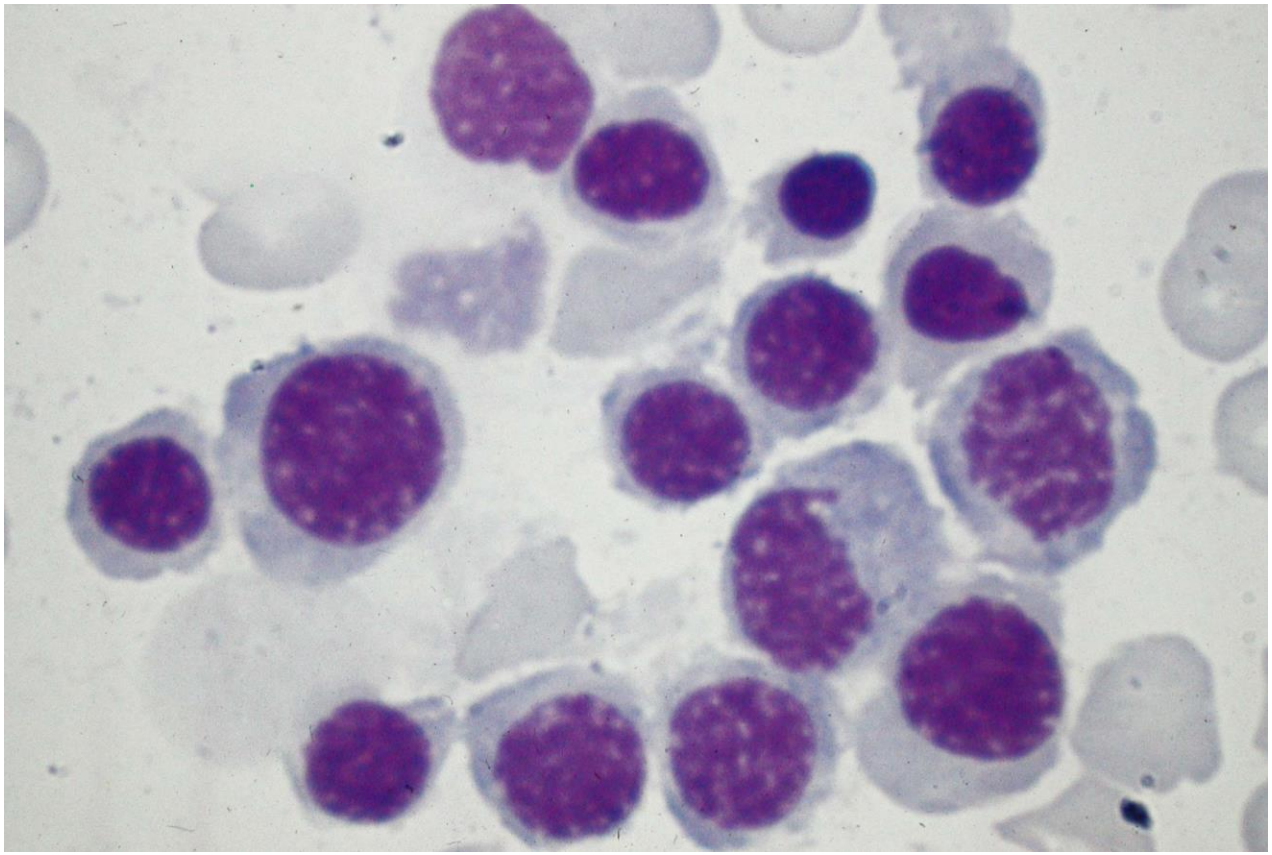

Pronormoblasts
Granulocytes



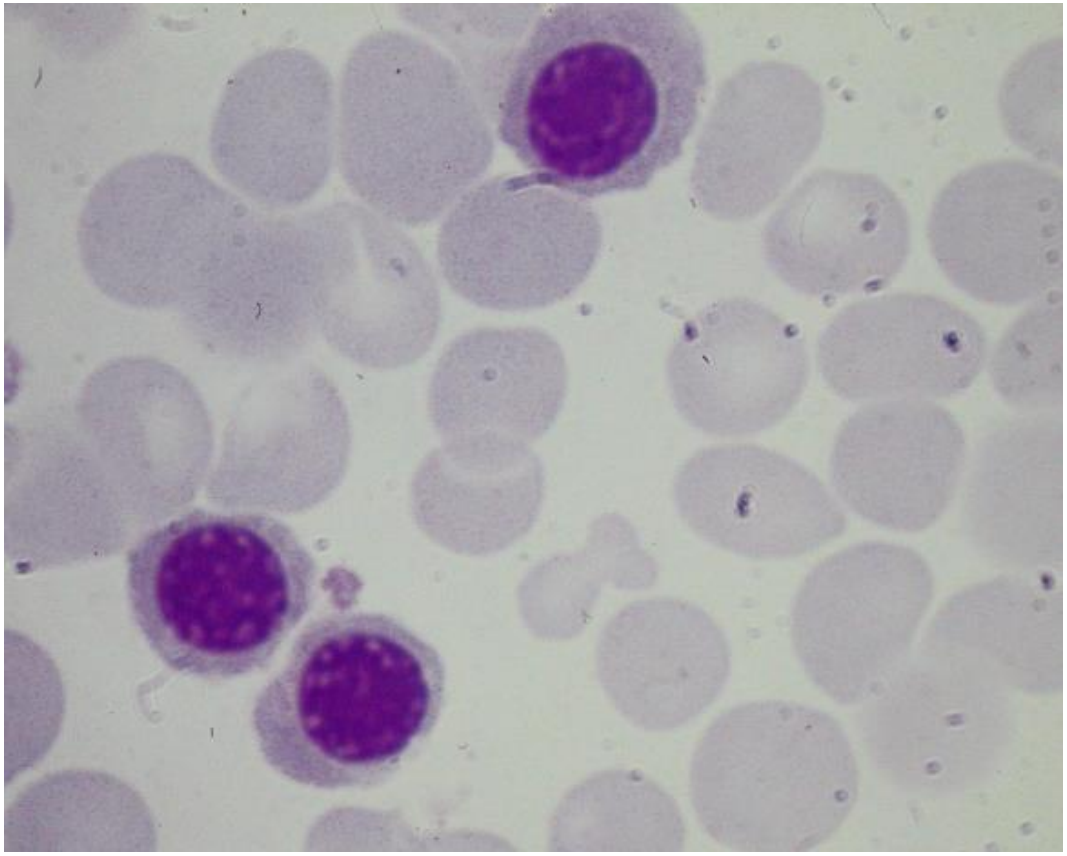
"Nest"of Basophilic Normoblasts



Normoblasts, at different degrees of maturation

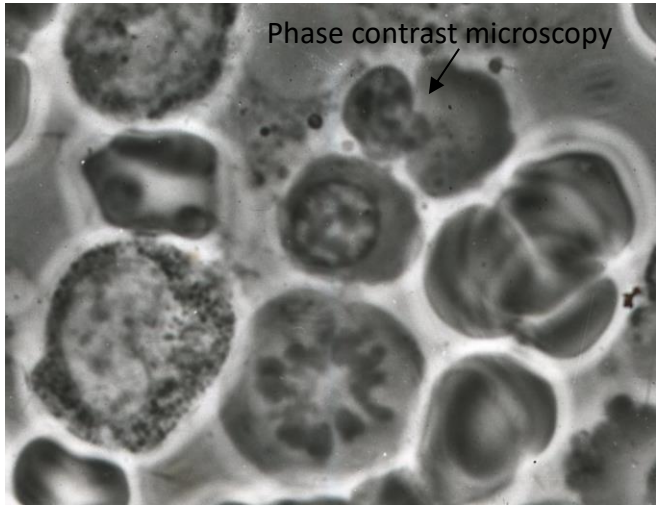


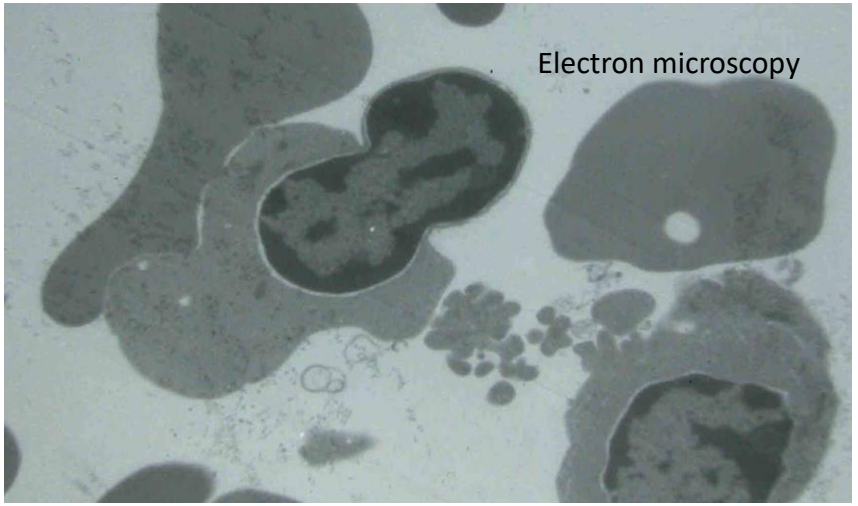
Polychromatophilic normoblasts



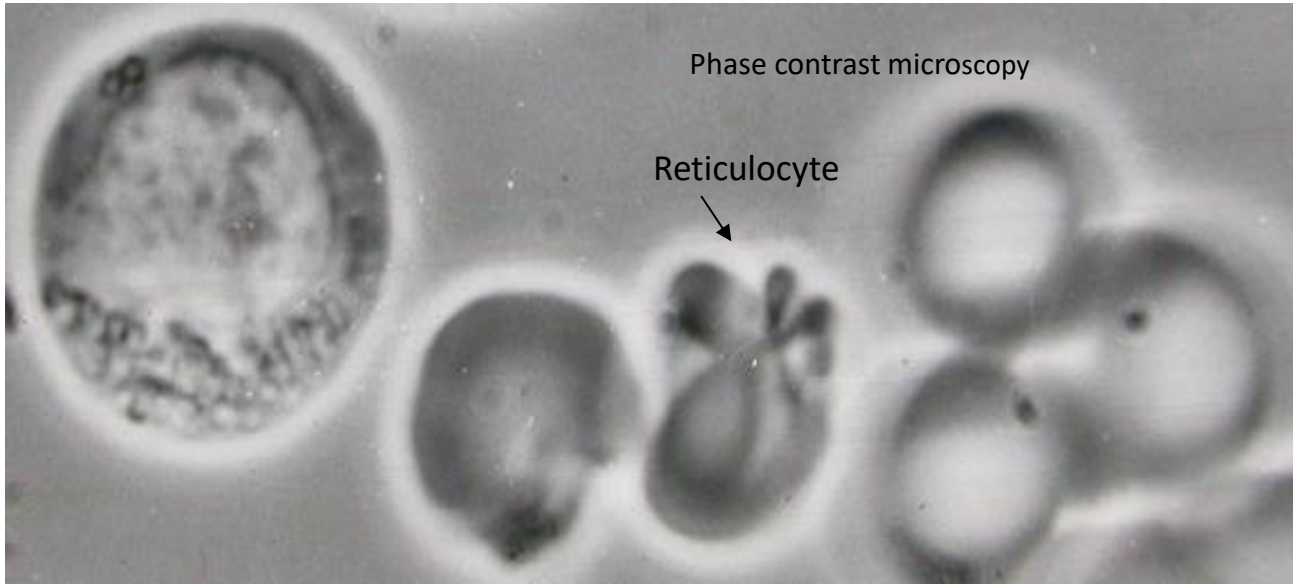
Orthochromatic (mature, late) normoblasts

Nuclear extrusion from normoblast





After nuclear extrusion: reticulocyte

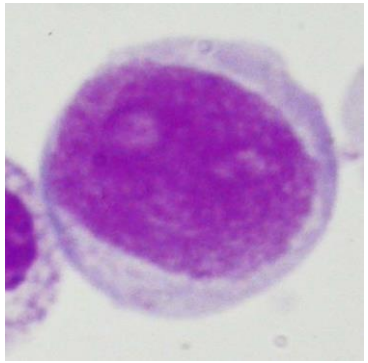


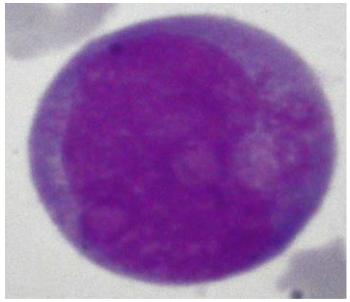
WBC Line

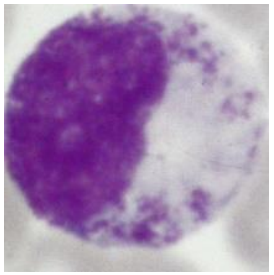
Progenitor cell compartment

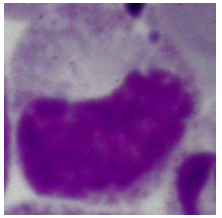
Stem cell Compartment.

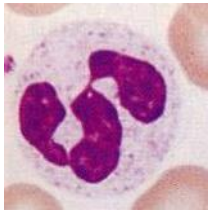
No specific morphological features











Myeloblast

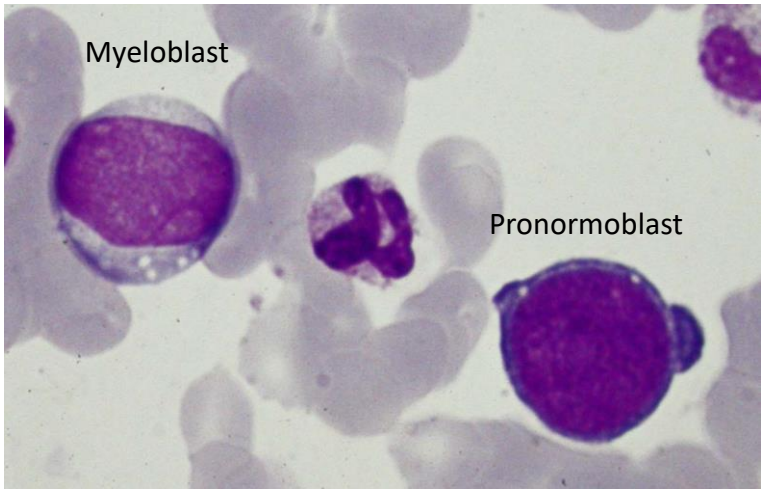
Promyelocyte

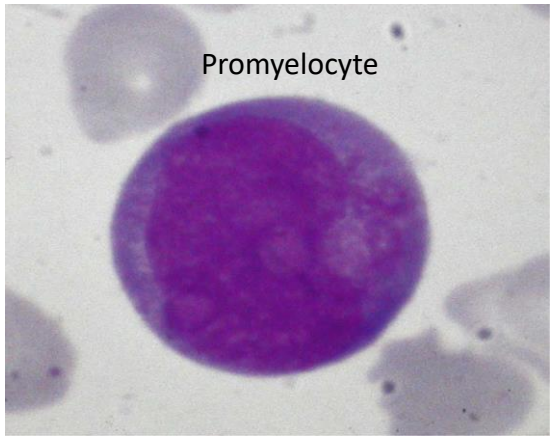
Myelocyte

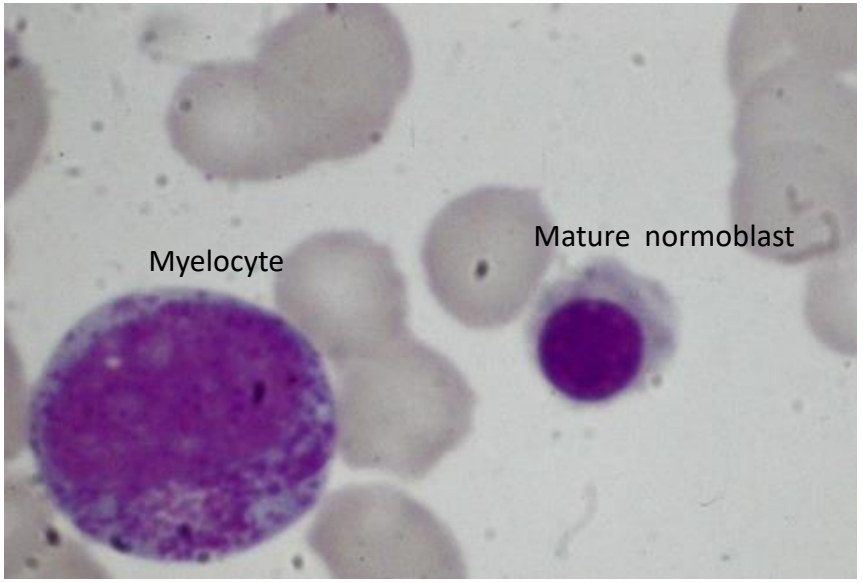
Meta-myelocyte

Mature Granulocyte

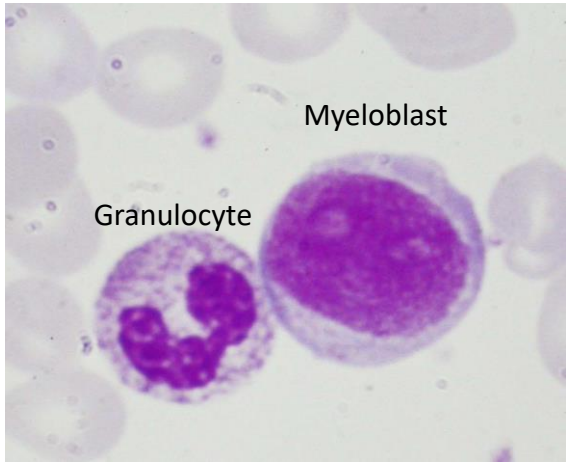
WBC line

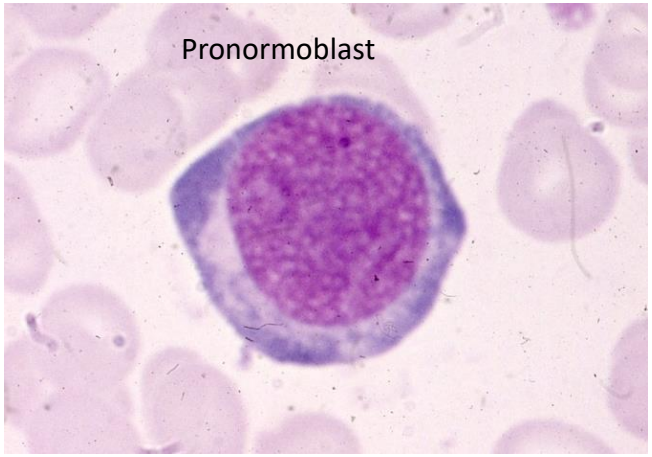

Myeloblast
Pronormoblast

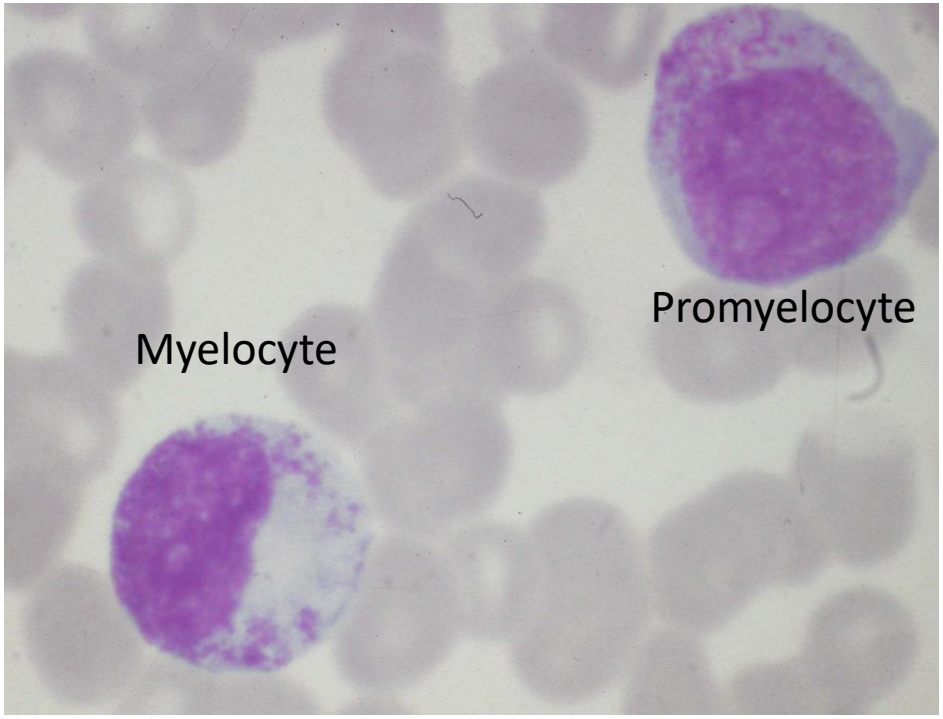

Promyelocyte


Myelocyte
Mature normoblast

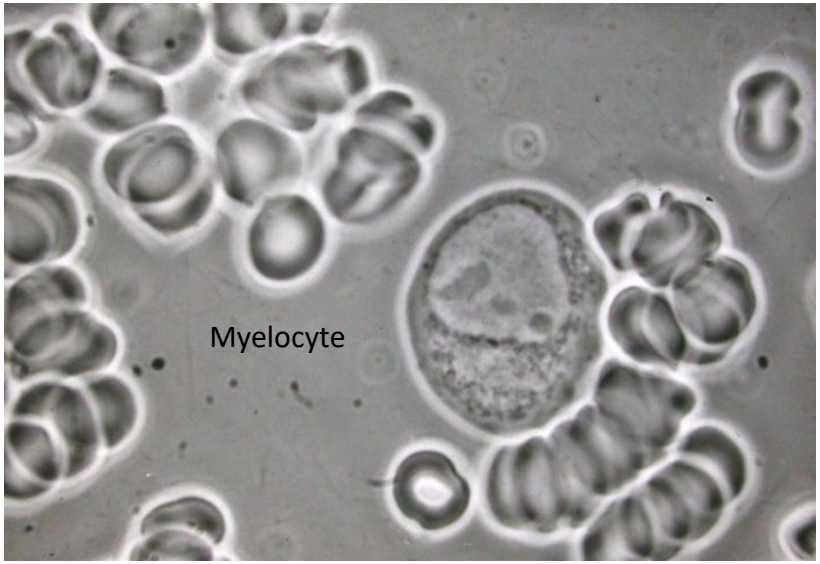
WBC line

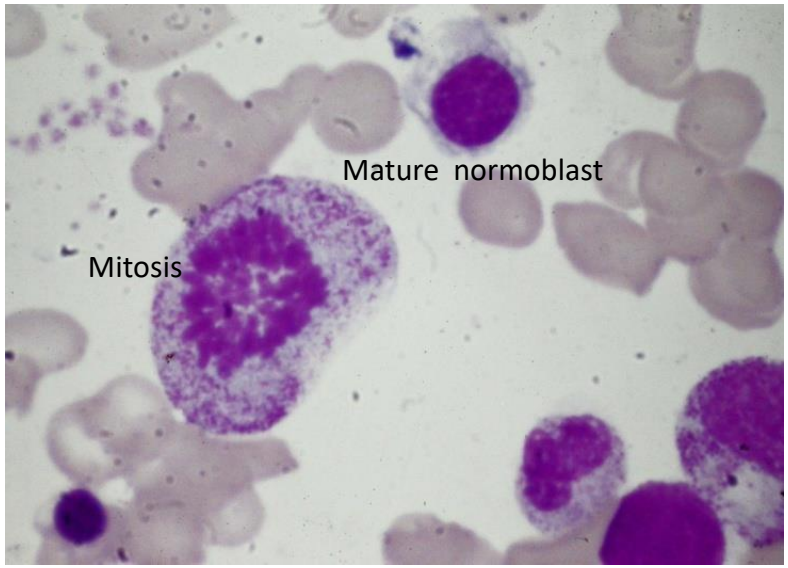

Myeloblast
Granulocyte


Pronormoblast

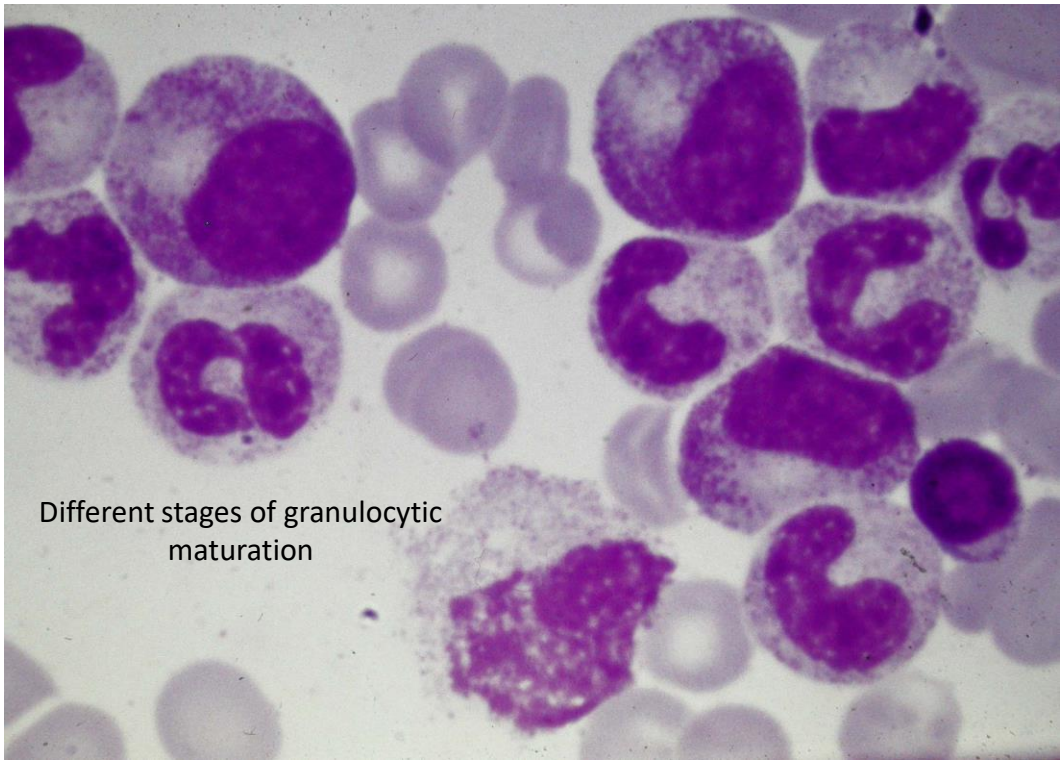

Promyelocyte
Myelocyte

Phase contrast microscopy

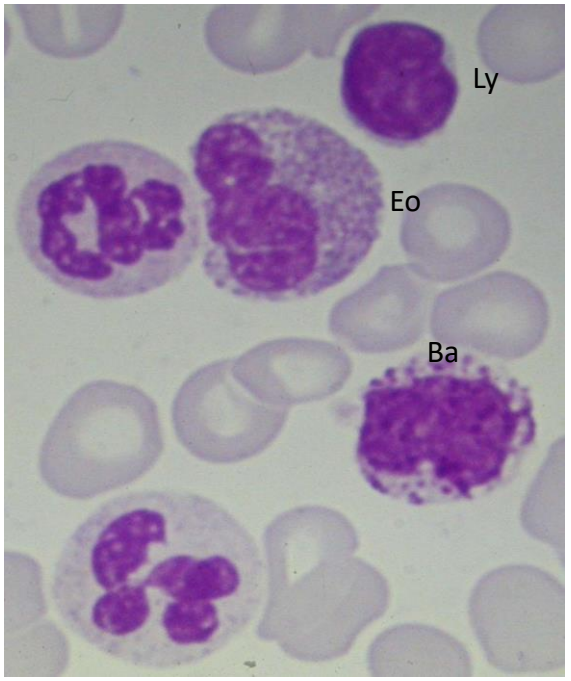




WBC line

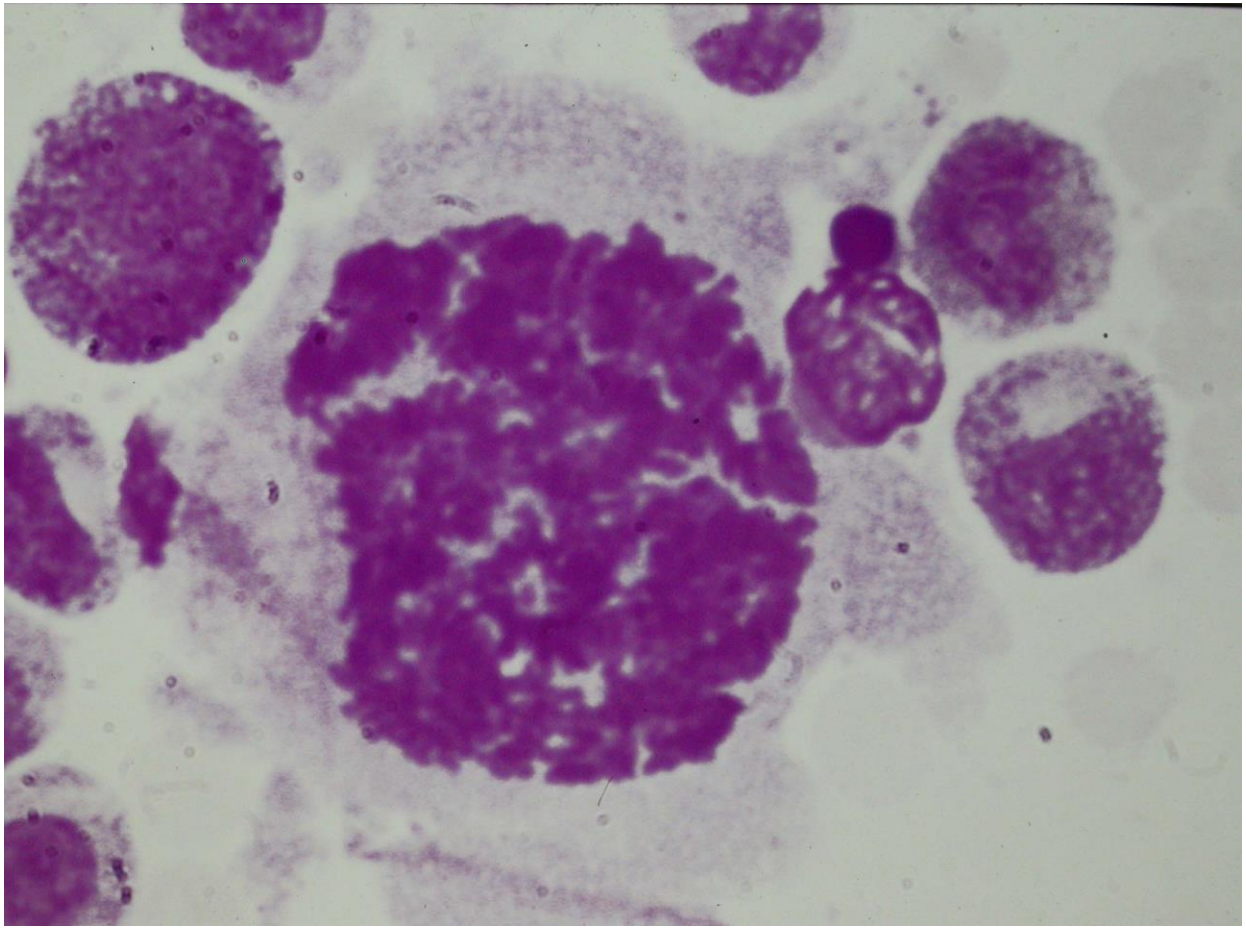


BM



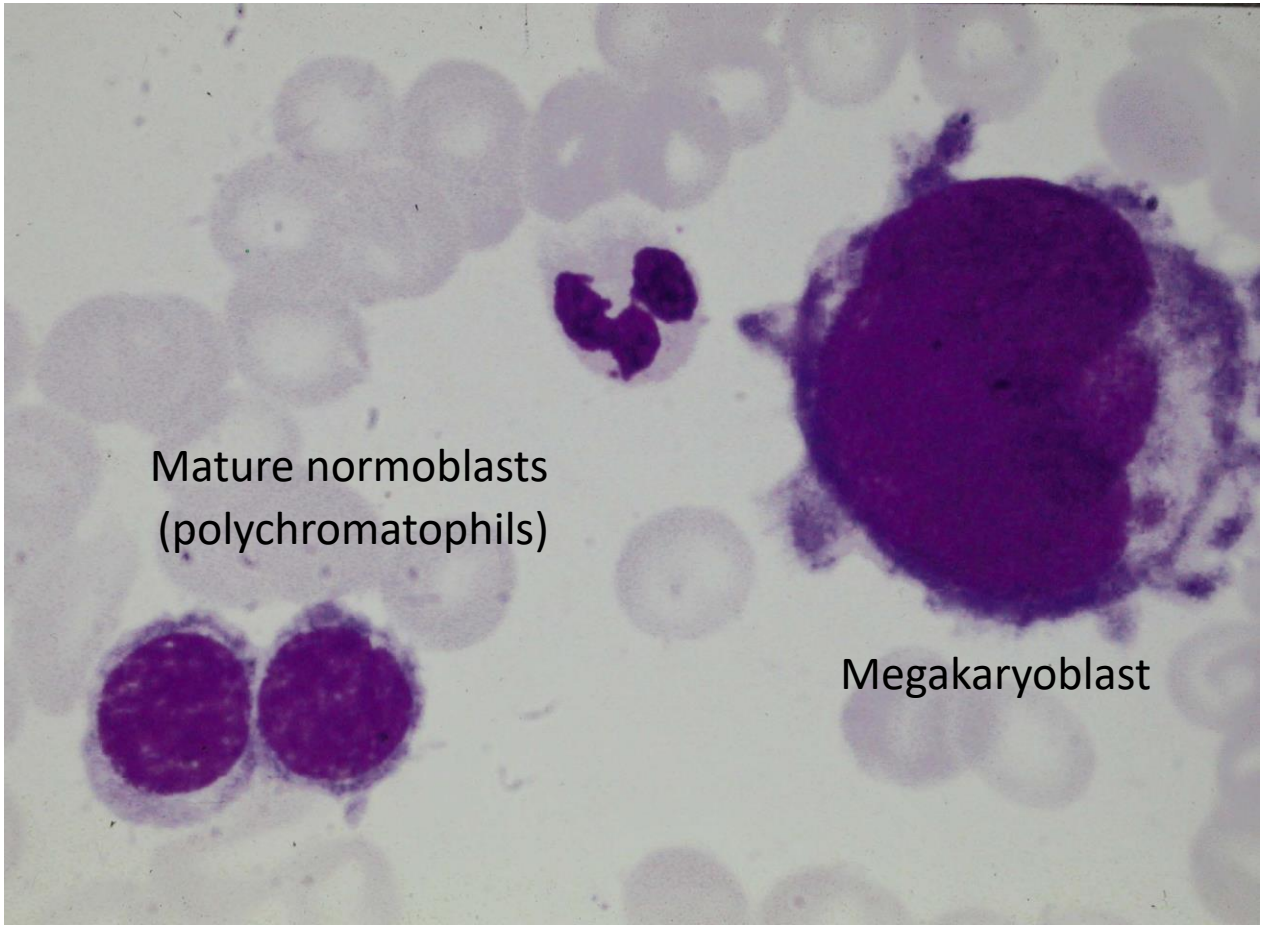
PB

Megakaryoblast at endomitosis

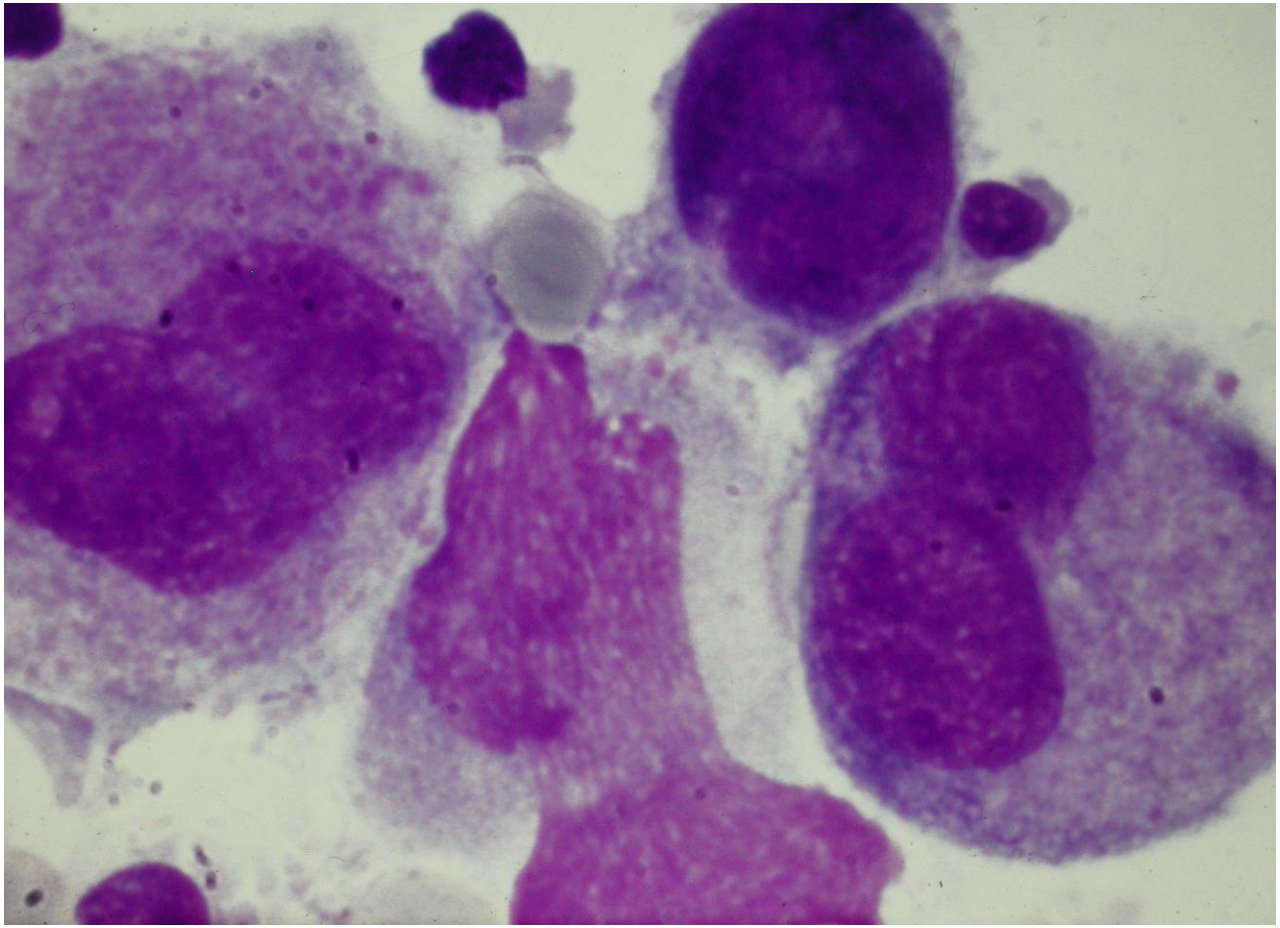


Normally from 4N to 32N (64N) – mean 16N

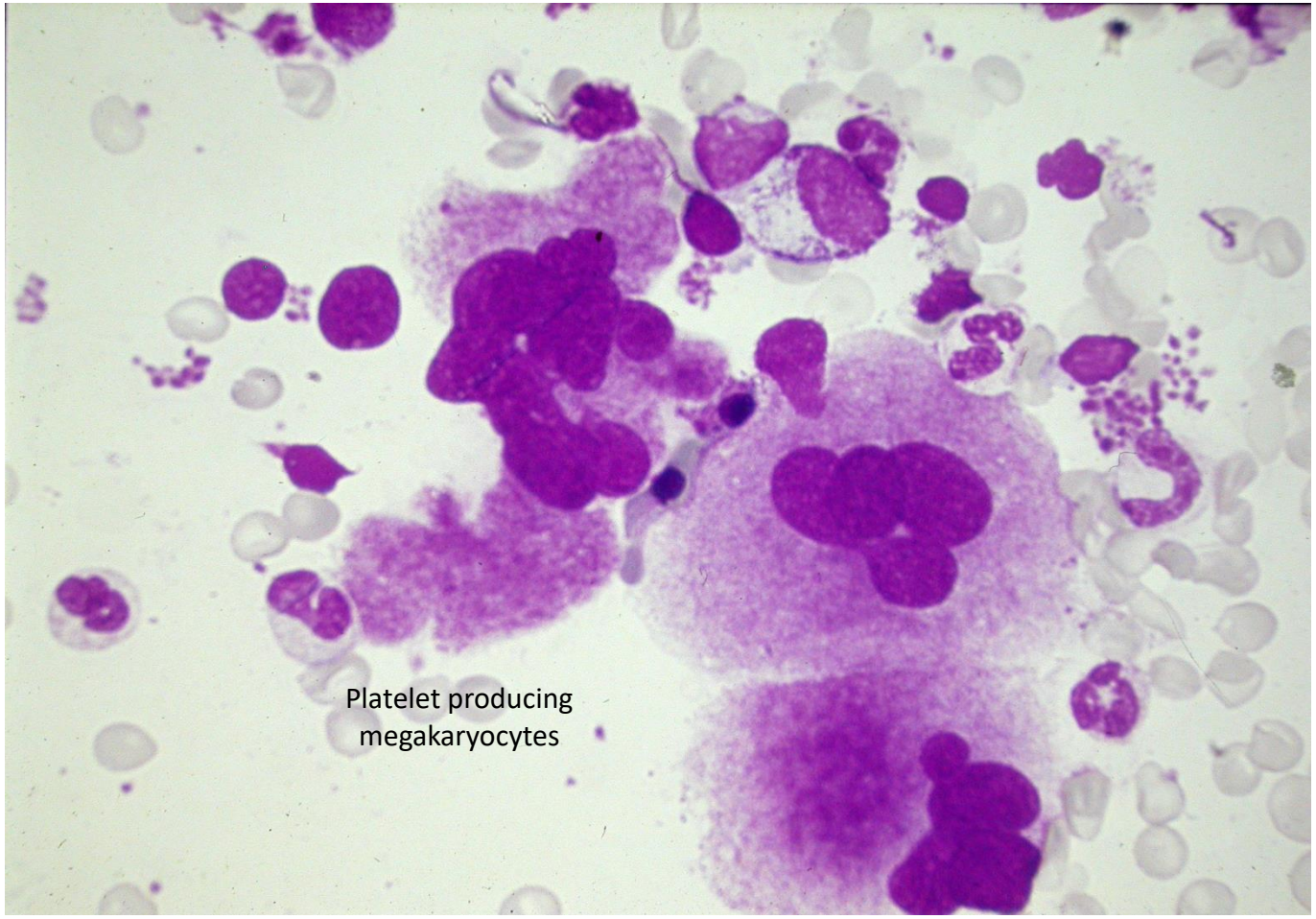
Megakaryopoiesis



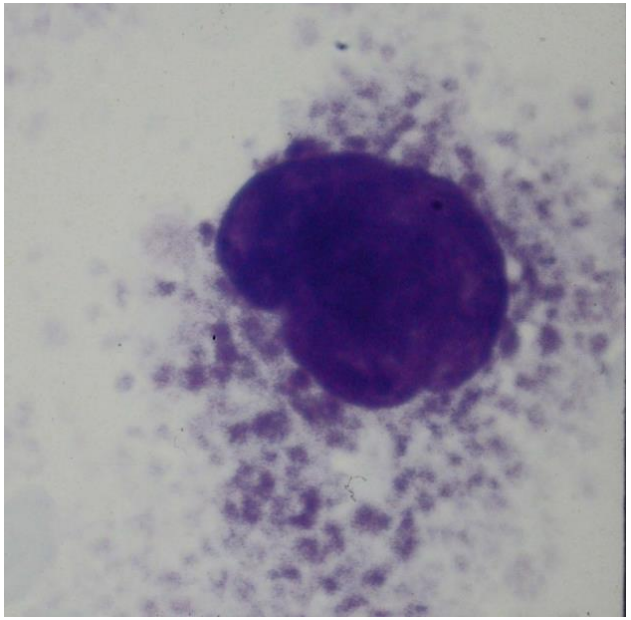
Different stages of megakaryocyte maturation



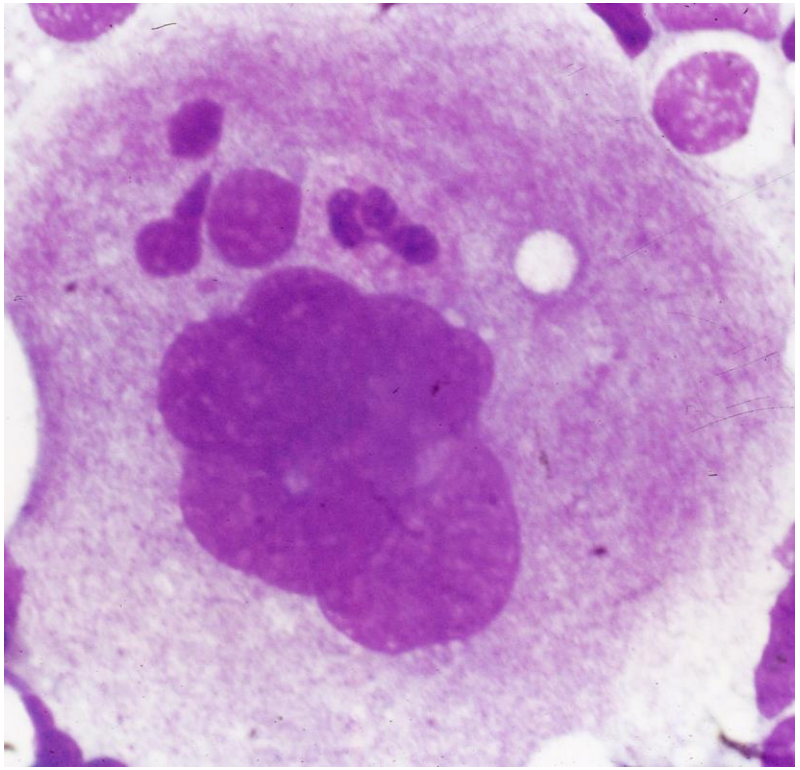
Mature megakaryocytes



Mature megakaryocytes

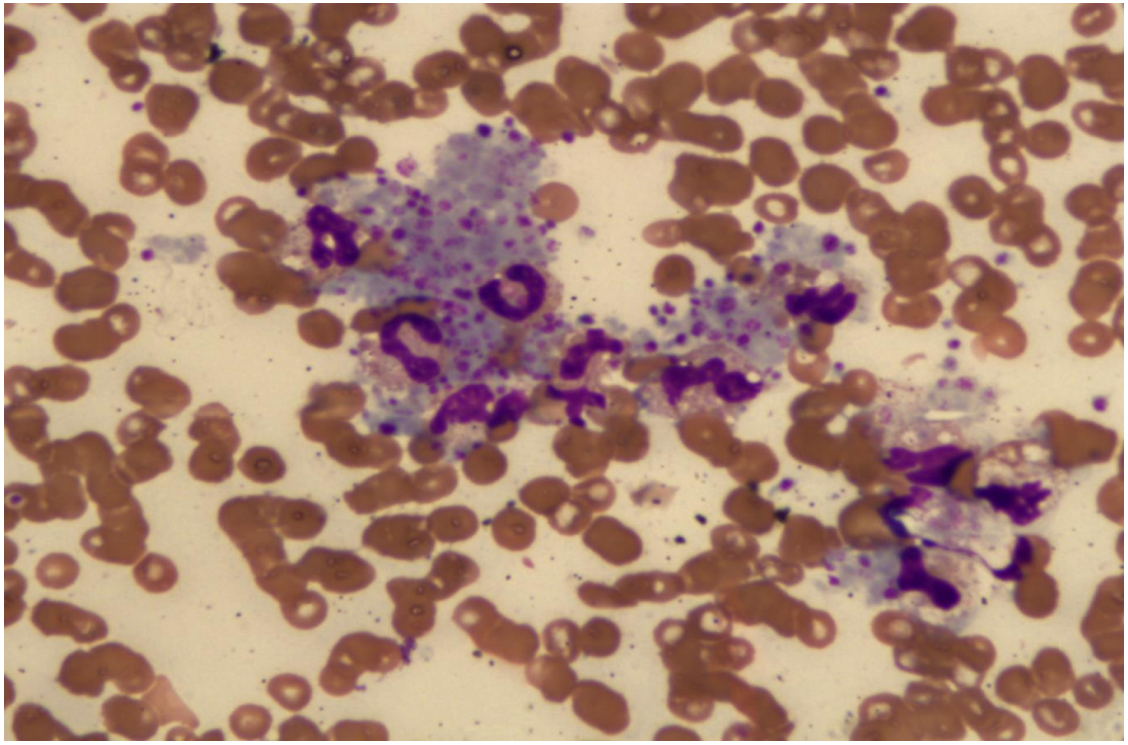


Megakaryocyte nucleus
and platelets around



“Emperipolesis” in a megakaryocyte:
engulfed viable WBC in the
megakaryocyte cytoplasm

EDTA dependent platelet aggregation



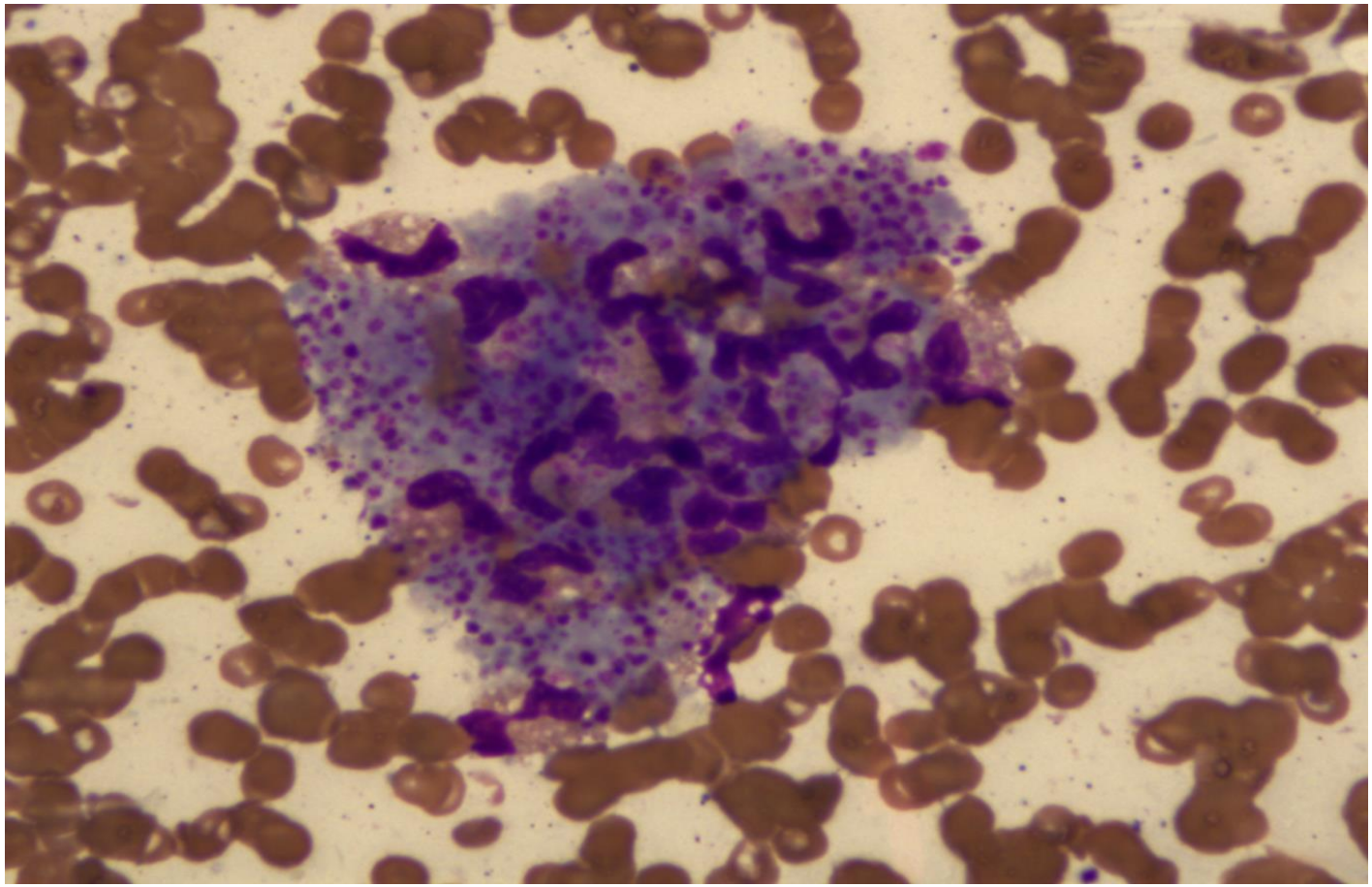
Unexpected Low platelets number by coulter

Exposure of antigenic determinants of platelet membrane gpIIb-IIIa

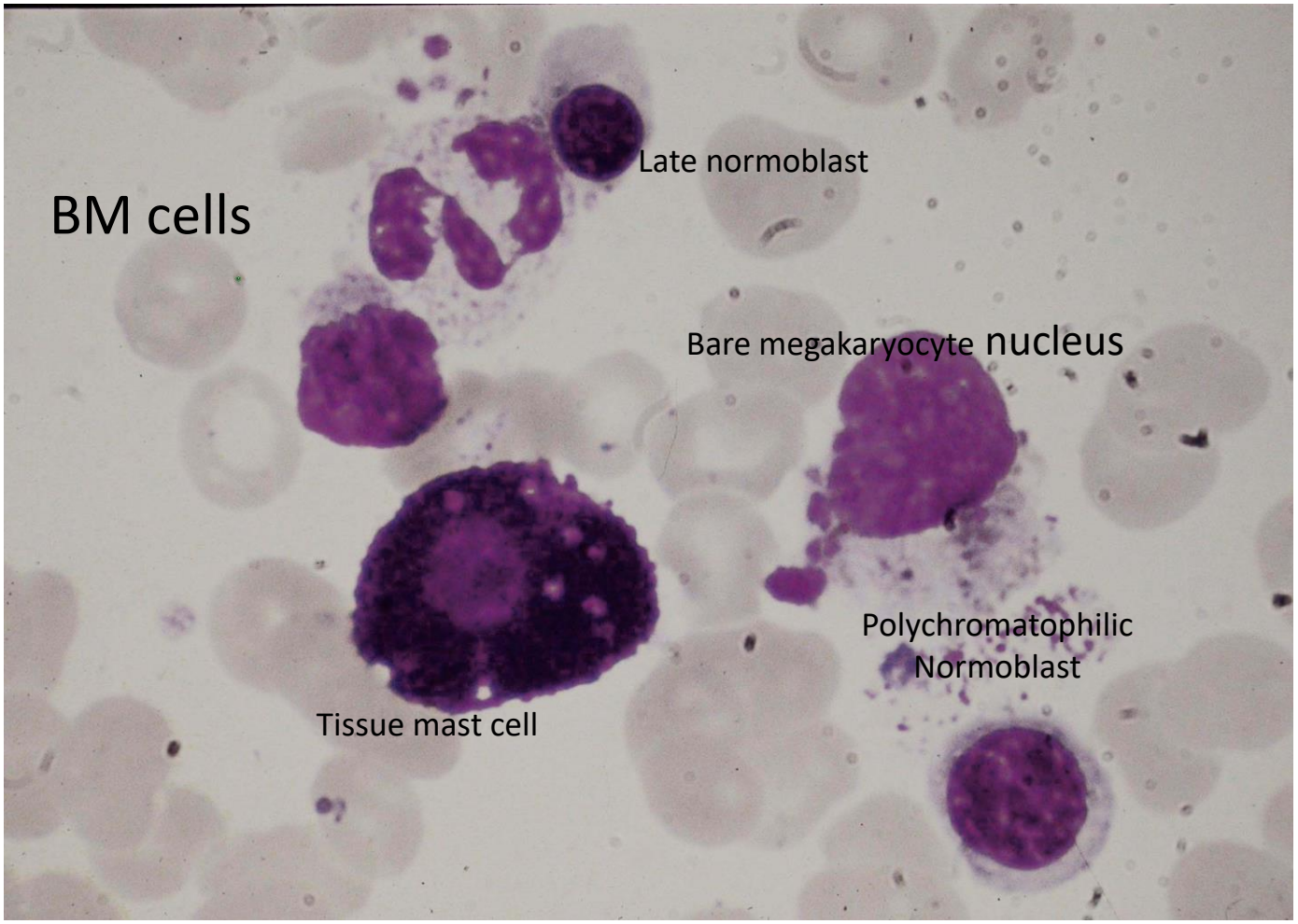
0.1% incidence in healthy general population

Higher in hospitalized people

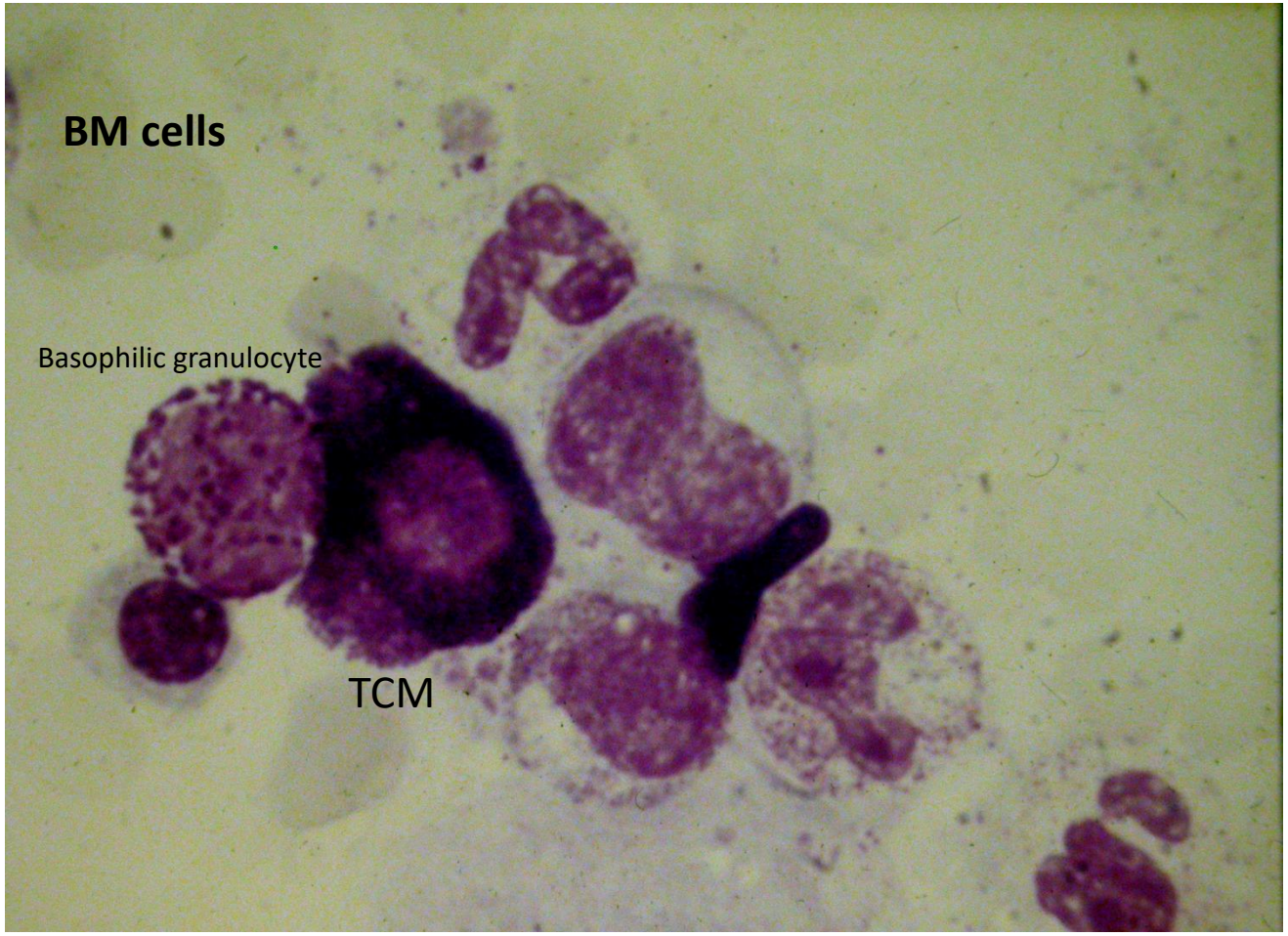
EDTA dependent platelet & neutrophil aggregation



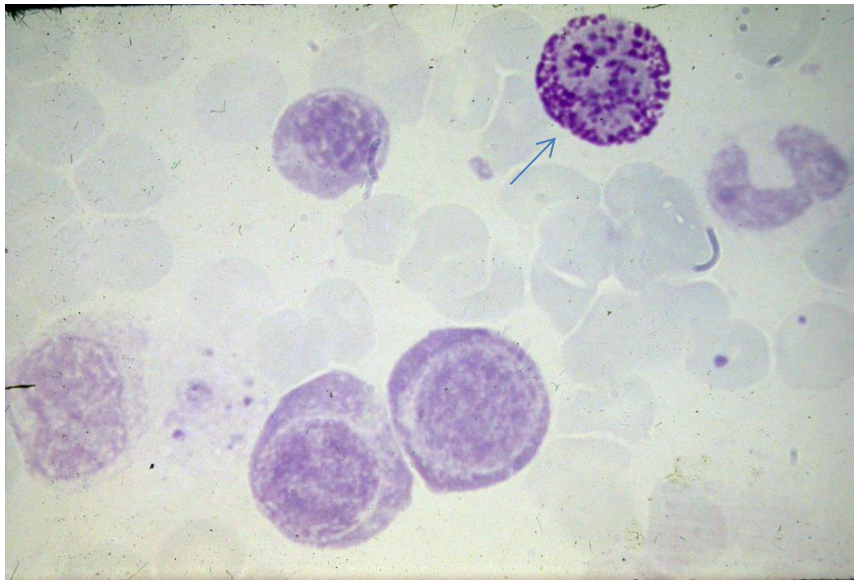
BM cells


BM cells
Late normoblast
Bare megakaryocyte nucleus
Polychromatophilic
Normoblast
Tissue mast cell

Tissue mast cell (TCM)



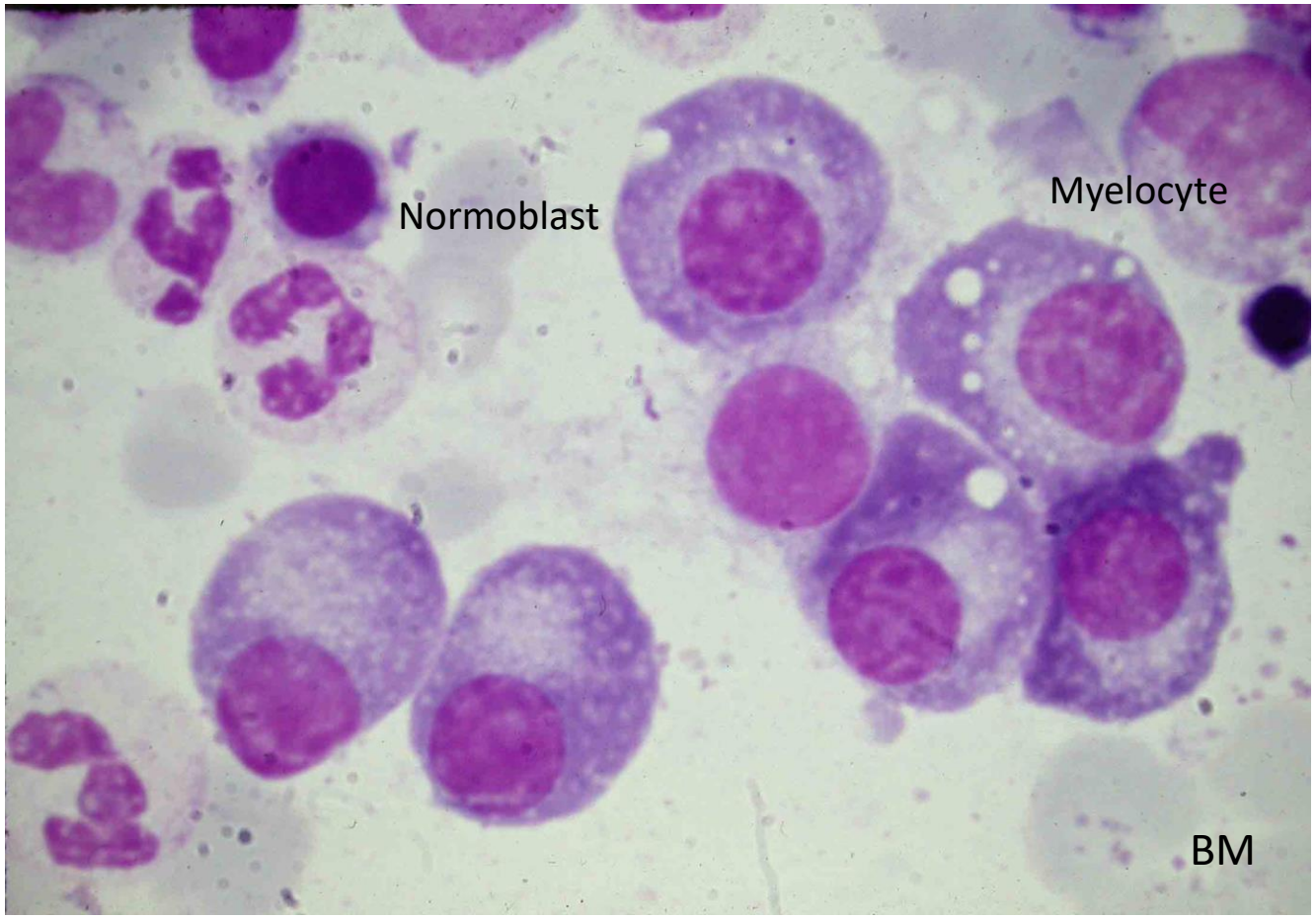
Metachromatic staining by Toluidine blue



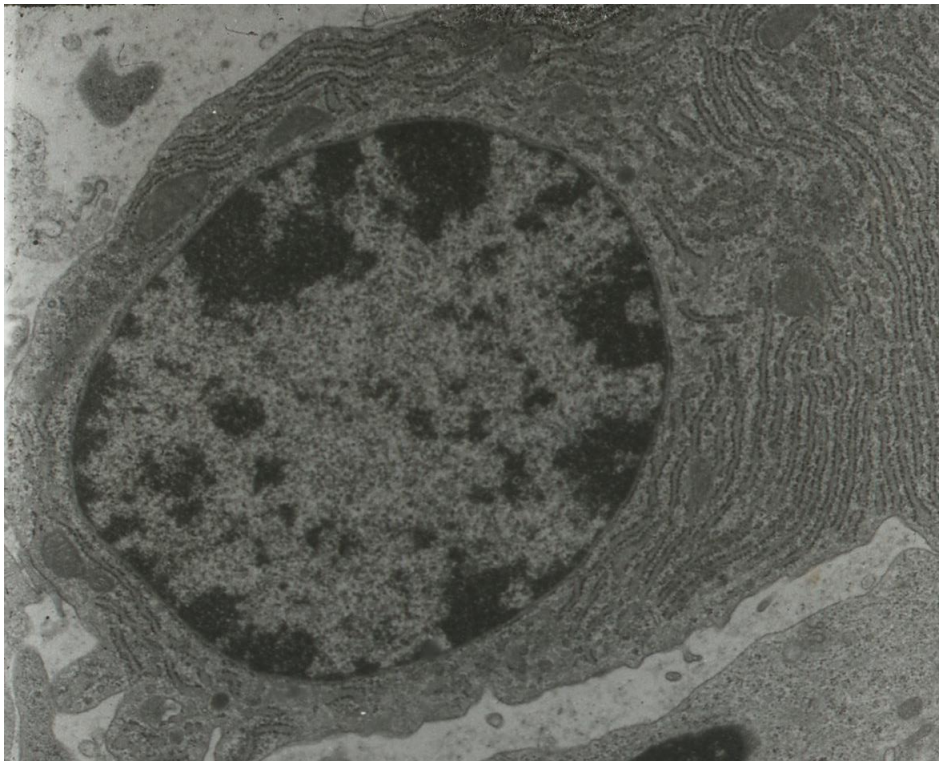
Basophilic granulocyte

Tissue mast cell

Plasmocytosis

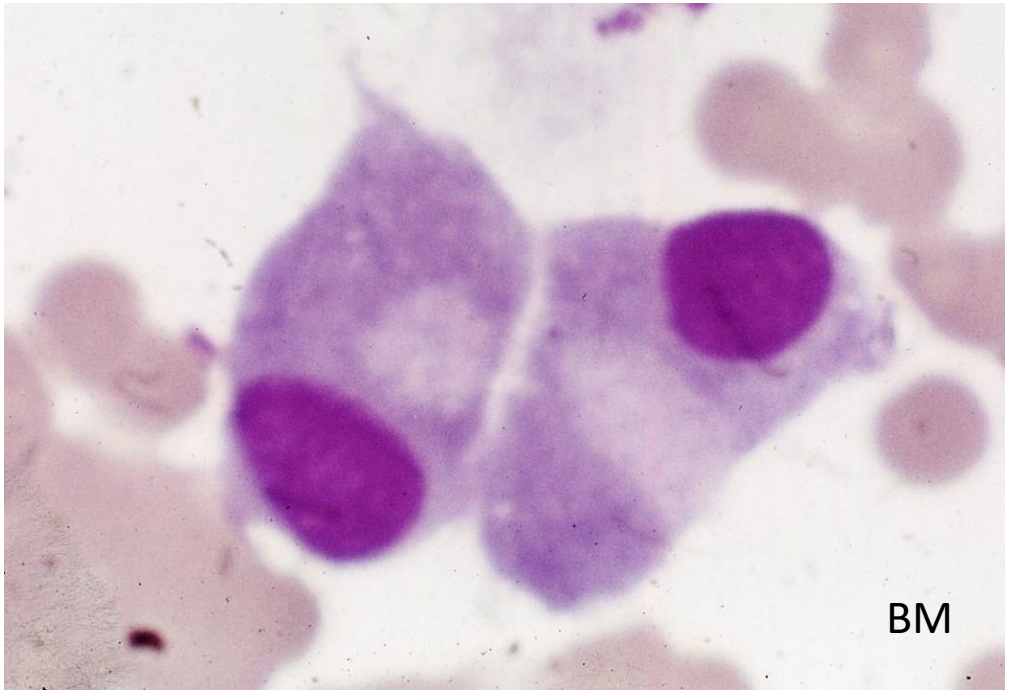


Normal plasma cell by EM

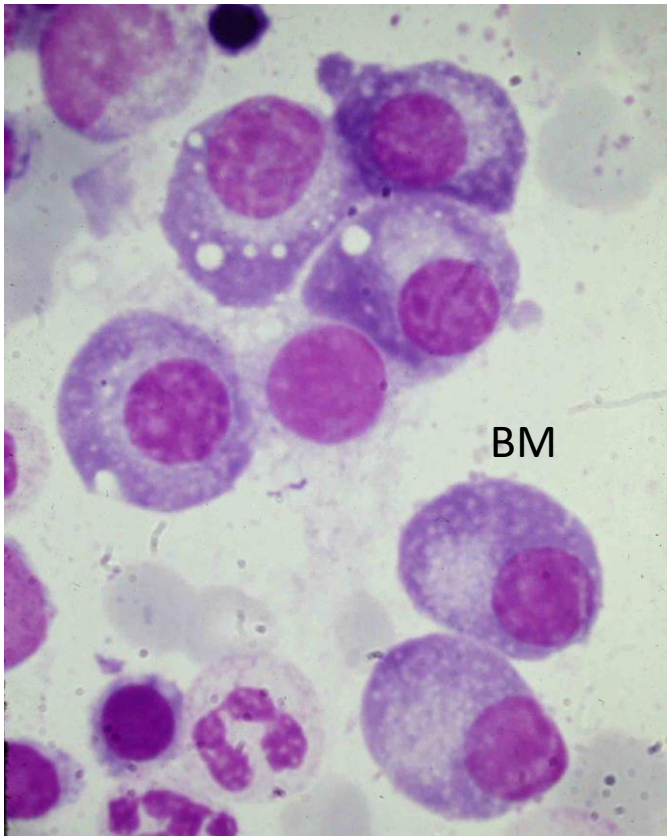


Nucleus with clumps of heterochromatin and cytoplasma filled with RER

Osteoblasts

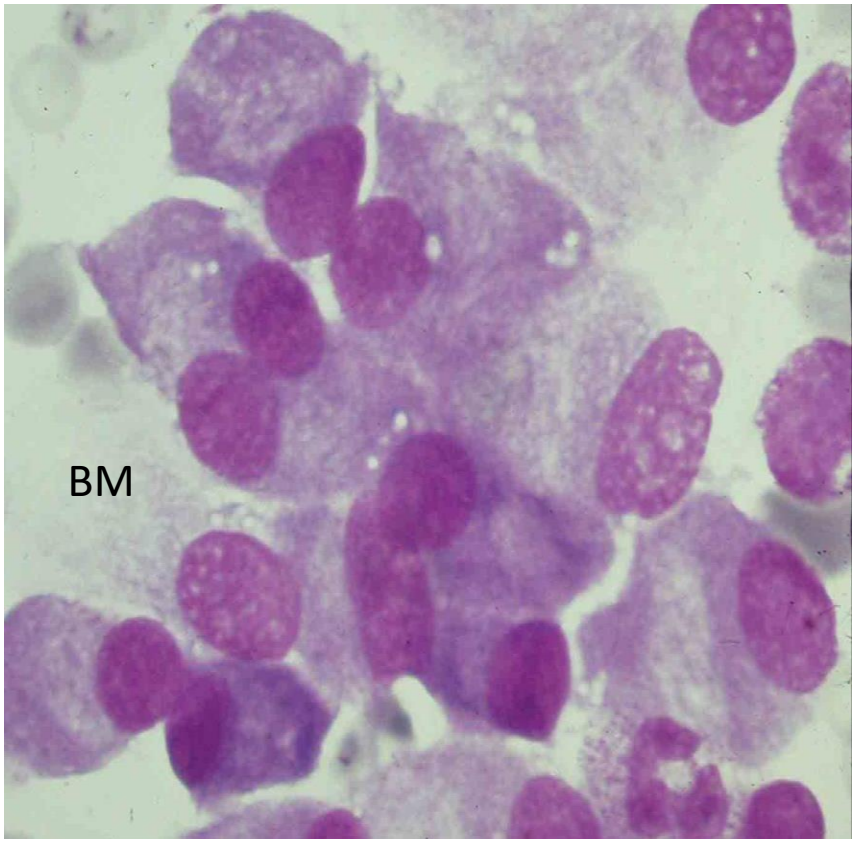


Plasma cells

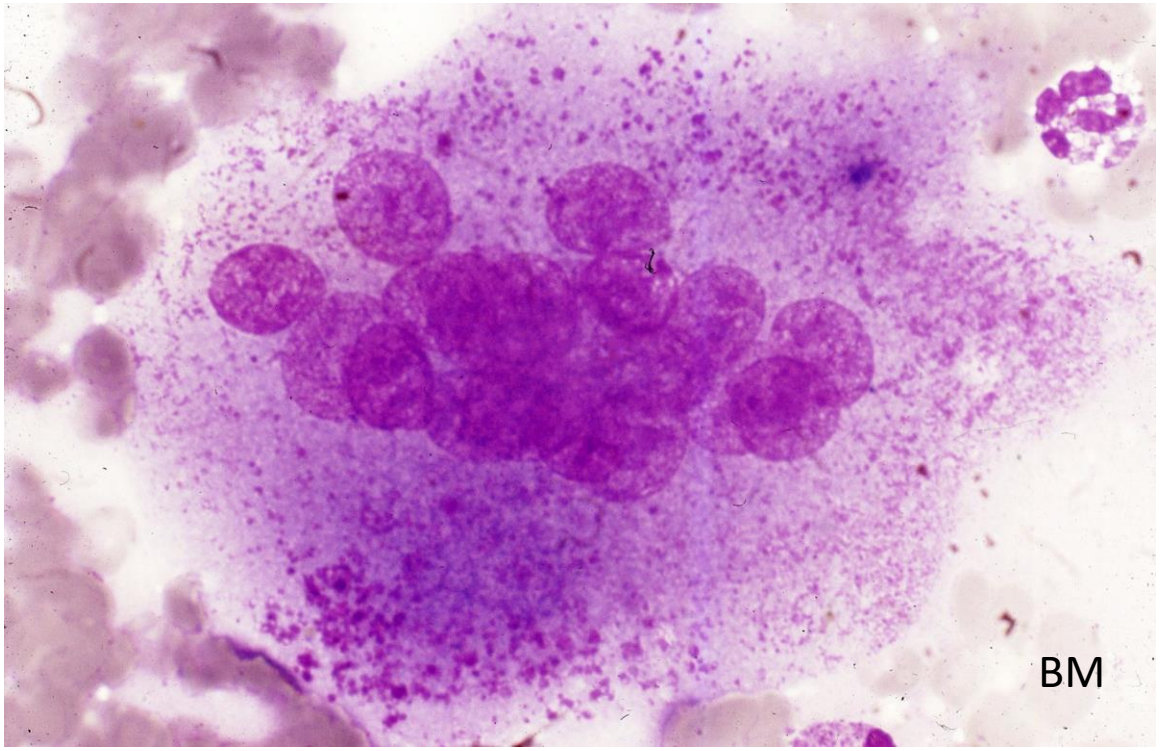


Plasma cells

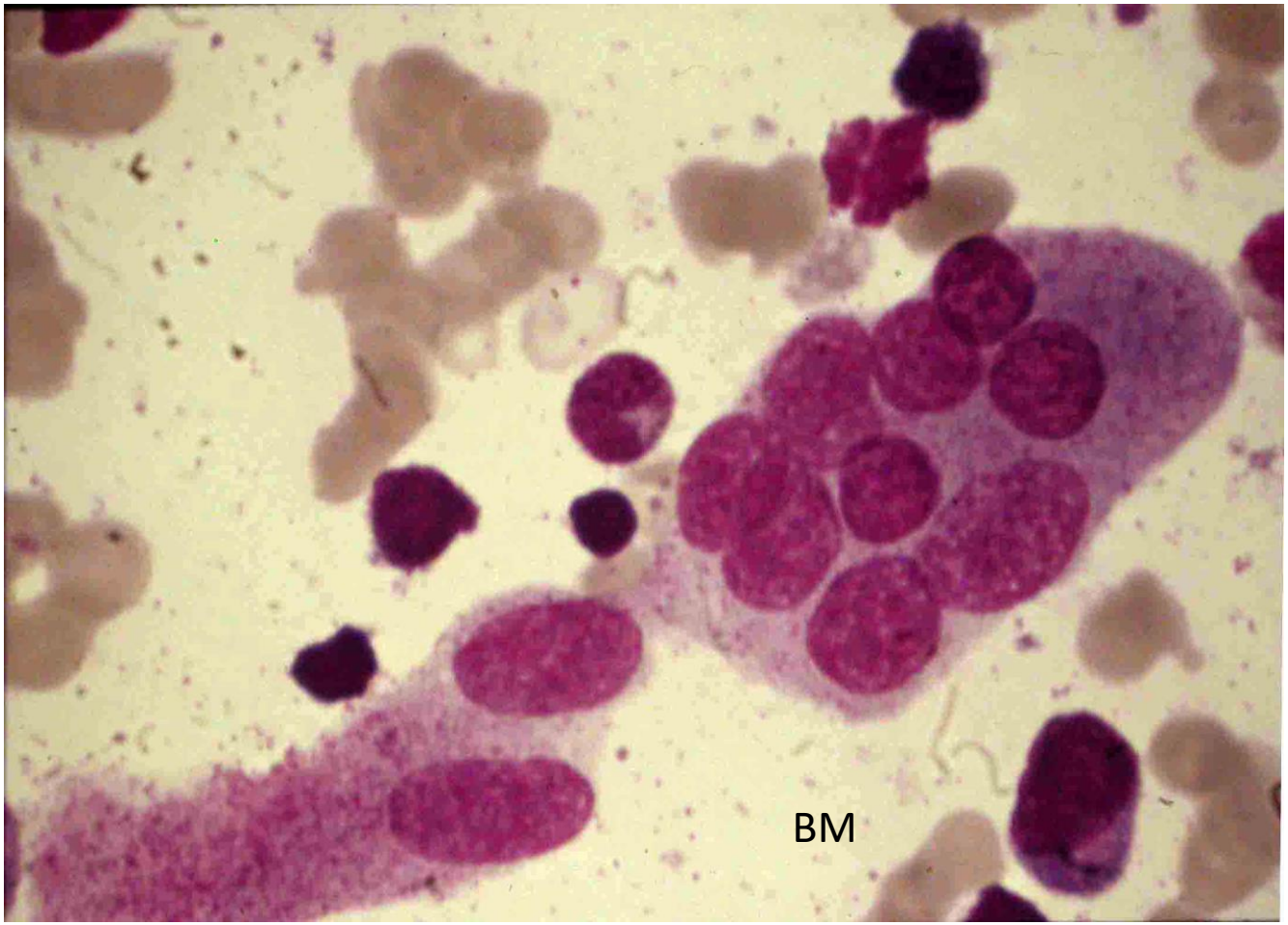
Osteoblasts



Osteoclast



Osteoclast



Very large (more than 100µm) multinucleated cell