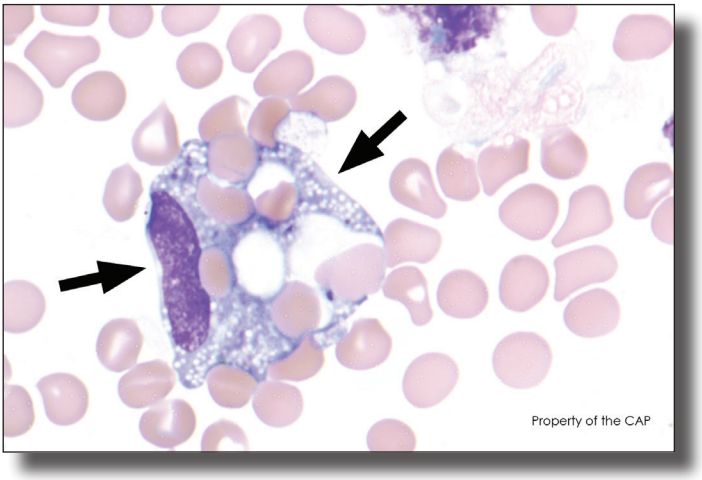
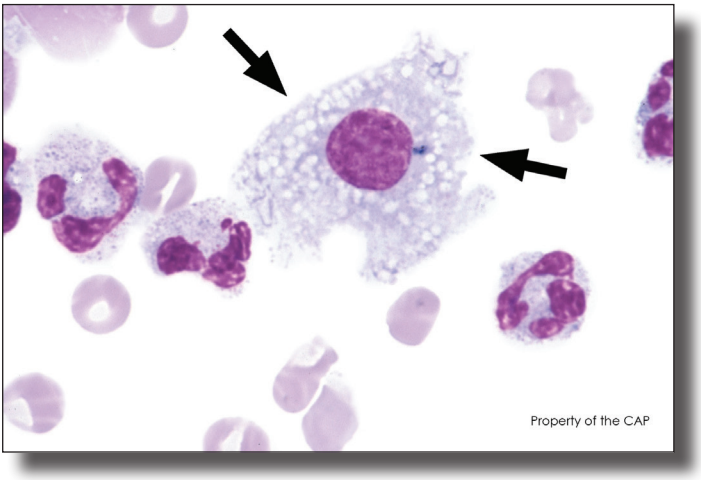


Macrophage Containing Erythrocyte(s) (Erythrophage):

Appearance: The erythrophage is a macrophage that has ingested red blood cells, usually due to hemorrhage from trauma or a bleeding disorder.

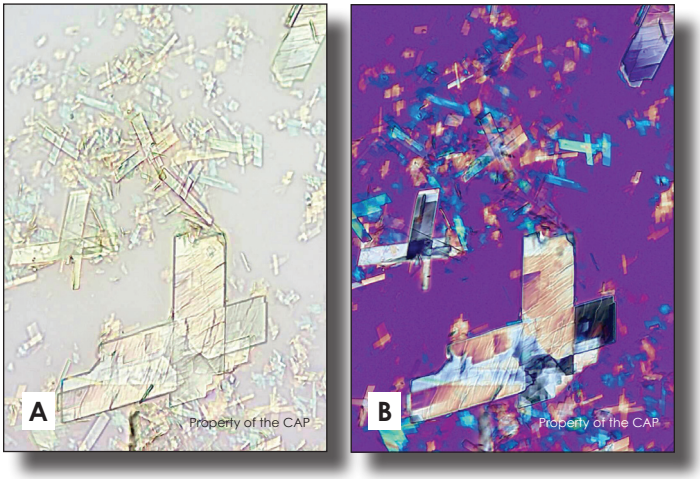
Special features: As phagocytic activity may persist following acquisition of the specimen, the presence of erythrophagocytosis does not always imply in vivo erythrophagocytosis. However, it can be an important clue to prior hemorrhage. Erythrophagocytosis is also seen in hemophagocytic syndromes where it is usually accompanied by leukophagocytosis.



Macrophage Containing Abundant Small Lipid Vacuole(s)/Droplet(s) (Lipophage):

Appearance: The lipophage is a macrophage containing uniform, small lipid vacuoles that completely fill the cytoplasm. These fat-filled inclusions may originate from extracellular fatty material or from the membranes of ingested cells.

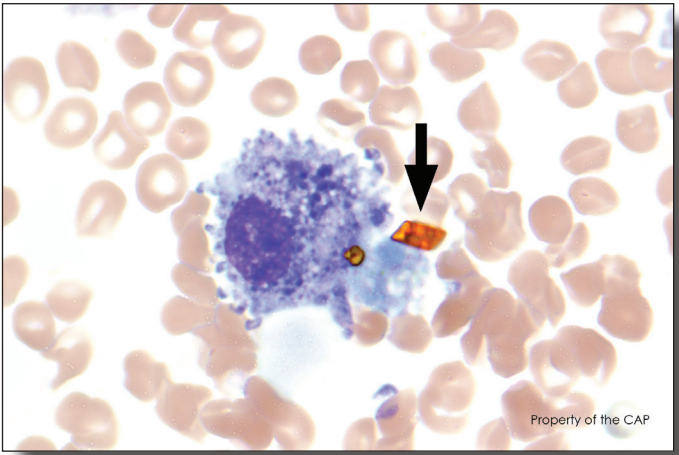
Special features: Lipophages may be present in CSF following cerebral infarcts, injections of intrathecal chemotherapy, or post-irradiation. In pleural fluid, lipophages are associated with chylothorax or with extensive cell membrane destruction.



Cholesterol Crystals:

Appearance: These crystals are extracellular and are one of the larger crystals found in fluids. The most common form is flat, plate-like with a notch in one corner (Figure A). Occasionally they may be needle-like. They are transparent and appear as a negative impression.

Special features: They are strongly birefringent when viewed with polarizing filters (Figure B) and are found in chronic effusions, especially in rheumatoid arthritis patients. They are believed to have no role in causing the arthritis.



Hematin/Hematoidin Crystals:

Appearance: The crystals are bright yellow and have a rhomboid shape.

Special features: Hematin and hematoidin crystals both result from the breakdown of hemoglobin in tissue. Hematin is a porphyrin compound. Hematoidin is similar to bilirubin. The crystals may be found anywhere in the body approximately two weeks after bleeding/hemorrhage. The crystals may be either intra- or extracellular. They do not stain with iron stains.