TRAINING UPDATE

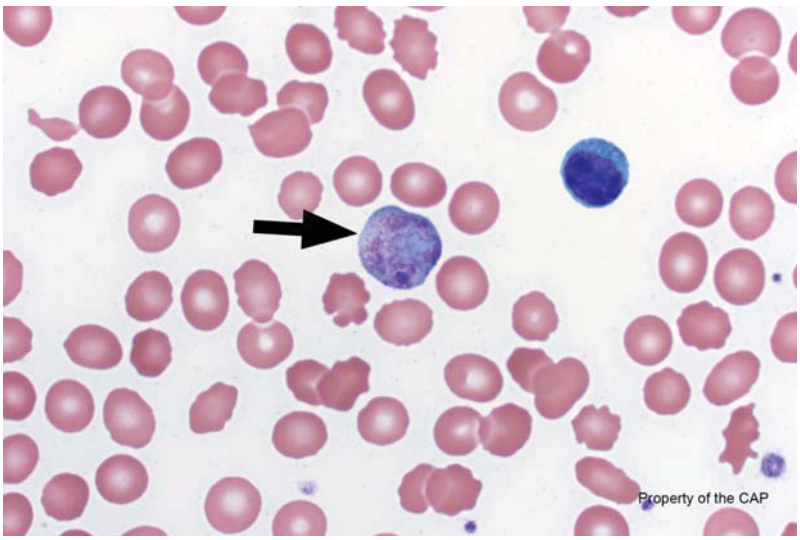
Lab Location:	SGMC, WAH & GEC	**Date Distributed:**	3/20/2019
Department:	All staff	**Due Date:**	4/19/2019

DESCRIPTION

Explanation:
One cell identification challenge was failed on the recent FH9 survey. Review the participant evaluation for the failure on the following pages. Take the quiz after you complete the review.

Blood Cell Identification – Graded

BCP-02



Identification	Referees No.	Referees %	Participants No.	Participants %	Evaluation
Platelet, giant (macrothrombocyte)	85	58.6	3333	61.2	Non-consensus
Neutrophil necrobiosis (degenerated neutrophil)	16	11.0	450	8.3	Non-consensus
Immature or abnormal cell, would refer	14	9.7	425	7.8	Non-consensus
Megakaryocyte (normal, abnormal, or nuclear fragment)	7	4.8	261	4.8	Non-consensus
Polychromatophilic (non-nucleated) red blood cell	6	4.1	161	3.0	Non-consensus
Basophilic stippling (coarse)	3	2.1	138	2.5	Non-consensus
Lymphocyte, large granular	2	1.4	15	0.3	Non-consensus
Lymphocyte, reactive (includes plasmacytoid and immunoblastic forms)	2	1.4	66	1.2	Non-consensus
Plasmodium sp. (malaria)	2	1.4	70	1.3	Non-consensus
Blast cell	1	0.7	29	0.5	Non-consensus
Howell-Jolly body	1	0.7	33	0.6	Non-consensus
Mitotic figure	1	0.7	64	1.2	Non-consensus
Nucleated red blood cell, normal or abnormal morphology	1	0.7	70	1.3	Non-consensus
Neutrophil, promyelocyte	1	0.7	11	0.2	Non-consensus
Neutrophil, toxic (to include toxic granulation and or Döhle bodies, and/or toxic vacuolization)	1	0.7	38	0.7	Non-consensus
Plasma cell, morphologically mature/abnormal/containing inclusion (eg, Dutcher body, Russell body)	1	0.7	37	0.7	Non-consensus
Platelet, hypogranular	1	0.7	16	0.3	Non-consensus

Blood Cell Identification – Graded

BCP-02 (cont)

The arrowed object is a giant platelet, as correctly identified by 58.6% of referees and 61.2% of participants. Giant platelets have diameters exceeding 7 µm, and they typically measure 10 to 20 µm in diameter. For proficiency testing purposes, the term *giant platelet* is used when the platelet is larger than the size of the average red blood cell in the field, assuming a normal MCV. The provided MCV of 99 fL in this case supports classifying the arrowed platelet as giant. Giant platelets are a rare finding in normal peripheral blood, but they may be encountered in a variety of reactive, neoplastic, and inherited conditions. Reactive causes include conditions in which platelet turnover is markedly increased, such as immune thrombocytopenia or severe leukemoid reactions. Giant platelets are most often seen in myeloproliferative neoplasms and myelodysplastic syndromes.

11.0% of referees and 8.3% of participants identified the arrowed object as representing neutrophil necrobiosis (degenerated neutrophil). Degenerated neutrophils generally resemble normal segmented neutrophils in terms of size, cytoplasmic characteristics (pale pink with fine granules), and nuclear segmentation. The major distinguishing feature is that the nucleus shows karyorrhexis and/or pyknosis; that is, the chromatin is dense and homogeneous.

4.8% of referees and 4.8% of participants identified the arrowed object as representing a megakaryocyte (normal, abnormal, or nuclear fragment). While normal mature megakaryocytes are not found in the peripheral blood, megakaryocyte nuclei and micromegakaryocytes may be seen infrequently. Megakaryocyte nuclei feature either a very scant amount of basophilic cytoplasm or no cytoplasm at all. Micromegakaryocytes are abnormally small megakaryocytes that usually measure 20 µm or less in diameter with an N:C ratio of 1:1 or 1:2. The nucleus may be hypolobated or may have multiple small lobes. The cytoplasm is pale blue and may contain pink granules. The presence of micromegakaryocytes in the peripheral blood is usually associated with a myeloproliferative neoplasm or myelodysplastic syndrome.

4.1% of referees and 3.0% of participants identified the arrowed object as a polychromatophilic (non-nucleated) red blood cell. The polychromatophilic red blood cell stains homogeneously pink-gray or pale purple with Romanowsky or Wright-Giemsa stain. Deep blue granular and/or filamentous structures may be seen when these cells are stained using supravital stains such as new methylene blue.

9.7% of referees and 7.8% of participants identified the arrowed object as an immature or abnormal cell, would refer for identification. Immature cells such as blasts have nuclei with finely reticulated chromatin and typically have a high N:C ratio.