TRAINING UPDATE

Lab Location:	SGMC	**Date Distributed:**	3/27/2023
Department:	Core Lab	**Due Date:**	4/10/2023

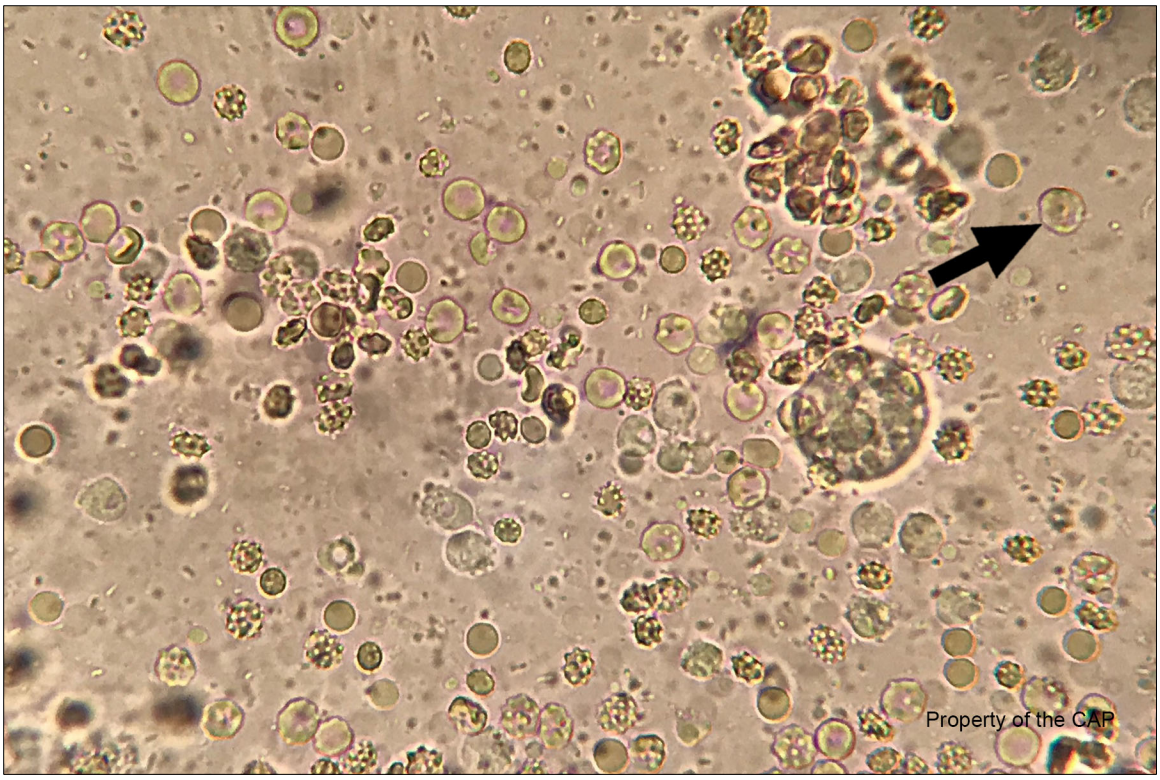
DESCRIPTION OF PROCEDURE REVISION

Name of procedure:
Not Applicable, Photomicrograph review- Urine Sediment
Description of change(s):
Please review the attached photomicrograph from CAP survey CM-A 2023 USP-02. This cell was resulted by at least one of our sites, as a dysmorphic erythrocyte (10.1% participants). **The expected result was leukocyte** (67.3% participants). Because there was a non-consensus for this slide result, it does not count against us. We have assigned the cell for review for your information and education.

Document your compliance with this training update by taking the quiz in the MTS system.

Urine Sediment Photographs

USP-02



Identification	Referees		Participants		Evaluation
	Freq	%	Freq	%	
Leukocyte (neutrophil, eosinophil, lymphocyte)	28	62.2	2608	67.3	Non-consensus
Erythrocyte	11	24.4	764	19.7	Non-consensus
Erythrocyte, dysmorphic	5	11.1	391	10.1	Non-consensus

The arrowed cell is a leukocyte, as correctly identified by 62.2% of referees and 67.3% of participants. The white blood cell in this urine wet preparation is identified as a nucleated granular round cell approximately 10 – 12 µm in diameter, larger than the red cells also appearing in this image. The presence of five or more leukocytes per high power field in the urine is termed pyuria and is associated with inflammation in the urinary tract such as infection or other kidney disease. A few neutrophils may be found in the urine of normal patients. The combined presence of both leukocytes and bacteria is an important indicator of bacterial urinary tract infection.

The arrowed cell was incorrectly identified as an erythrocyte by 24.4% of referees and 19.7% of participants. Erythrocytes appear as pale, often biconcave, yellow-orange discs. They vary in size but are usually about 7 to 8 µm in diameter. Erythrocytes may become crenated in hypertonic urine and appear as small, shrunken cells with irregular edges and surfaces. The surface crenations may resemble granules, and these cells may be confused with small white blood cells, though crenated RBCs are much smaller than granulocytes and lack a nucleus.

The arrowed cell was incorrectly identified as a dysmorphic erythrocyte by 11.1% of referees and 10.1% of participants. Dysmorphic erythrocytes lack a nucleus, may be smaller than normal erythrocytes and exhibit cytoplasmic bulges or projections that may break off and appear as tiny separate red cell fragments. The classic example of this type of cell is one with two small symmetrically positioned cytoplasmic blebs (Mickey Mouse ears). These features are not seen in this case. Presence of dysmorphic erythrocytes is considered quite specific for glomerular bleeding, typically glomerulonephritis.