**TRAINING UPDATE**

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| **Lab Location:** | All sites | **Date Distributed:** | 4/1/25 |
| **Department:** | Hematology | **Due Date:** | 6/30/25 |
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| **Reason for MTS:** |
| The arrowed cells were missed at all four sites. They were incorrectly identified by 77.4% of CAP participants as Macrophage/Monocyte, including us. Therefore, the slide was determined a non-consensus and does not count against us. It is however an educational opportunity. |
| **Description:** |
| The arrowed cells are lymphoma cells.  Lymphoma cells can exhibit a variety of appearances depending on the lymphoma subtype,  and definitive diagnosis can be difficult. These cells can exhibit a variety of sizes, shapes, and nuclear and cytoplasmic characteristics. Cell size ranges from 8 to 30 μm and the N:C ratio varies from 7:1 to 3:1. Supplemental studies, such as immunophenotyping, are often necessary to arrive at a diagnosis. The most important distinction between these cells is the difference in their N:C ratios. The N:C ratio tends to be low in reactive lymphocytes, while it is high in lymphoma cells. In addition, reactive lymphocytes are characterized by their wide range of morphologic appearances within the same blood smear. While lymphoma cells can exhibit a wide range of morphologic appearances, any individual case tends to show a more monotonous population of the abnormal cells. In this case, the lymphoma cells are much larger than normal lymphocytes (also present in the image and CMP-08 for comparison), with irregular nuclear contours, somewhat condensed chromatin, and a moderate amount of cytoplasm. These cells are also singly dispersed while non-hematopoietic malignant cells are often in clusters.  While both monocyte/macrophages and the arrowed lymphoma cells are larger than a normal lymphocyte, the abnormal features of the cells are not consistent with monocytes/macrophages. **The arrowed lymphoma cells have a higher nuclear-to-cytoplasmic ratio and much more irregular nuclear contours than a typical monocyte/macrophage which has round to ovoid to kidney bean shaped nuclei with abundant cytoplasm.** |

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