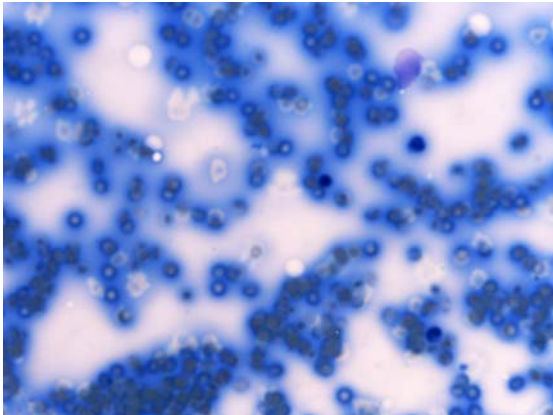
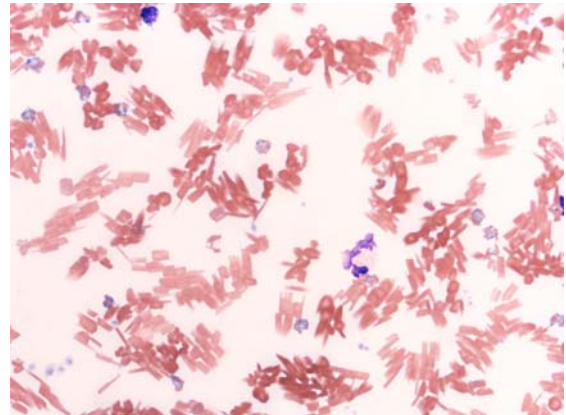




## TECHNICAL TIPS OF THE TRADE (Submitting Blood Smears)



*Formalin Artifact*



*Moisture Artifact*

Freshly-made unstained blood smears are really helpful when submitted with the lavender top tube. RBC and WBC morphology and platelets numbers are best assessed on those slides as there is no interference from EDTA. Red cell abnormalities such as spherocytes, acanthocytes, schistocytes, etc., are best evaluated on well-made fresh smears. Also, WBC changes, especially toxic changes, are most accurately evaluated on these slides. Lymphocyte morphology and the elusive question of whether lymphocytes are reactive or neoplastic, are also best evaluated on well-made received slides.

Make sure slides are completely air dried before putting into the plastic container and avoid refrigeration. Any moisture in the container will cause RBCs and WBCs to rupture as demonstrated above.

Slides sent for cytologic exam (aspirates, slides make from effusions) should also be completely air dried before placing in the plastic slide container, again to avoid cell lysis and lack of stainability.

Do not package cytology slides with biopsy samples. The fumes from the formalin will destroy cells on the smears as seen above.

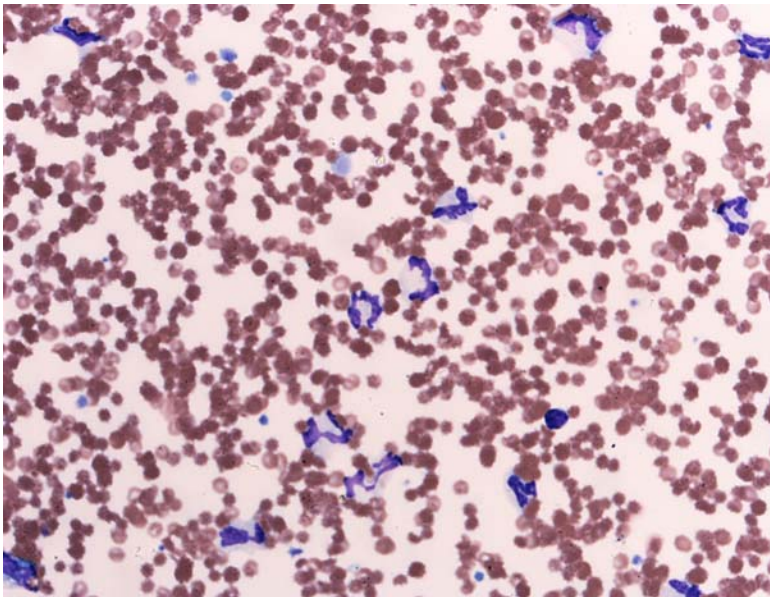
*SW/JKK/kf*  
*9/23/10*



## TECHNICAL TIPS OF THE TRADE (Submitting Blood Smears)



This is a freshly-made unstained blood smear.  
50x oil



This is an EDTA blood smear from a short sample.  
Same patient as above. Note echinocytosis (crenation)  
of RBCs due to the small sample size and degeneration  
of the WBCs such that it is difficult to distinguish ma-  
ture neutrophils from band neutrophils.  
50x oil

### Short Draw Sample Considerations:

Submitting well made, well dried slides will allow the most accurate evaluation of cell morphology free from any artifacts.

A short draw sample has excessive EDTA concentrations which may contribute to decreased MCV, erroneous indices, as well as RBC and WBC morphologic changes.

In the RBCs, this includes echinocytosis, poikilocytosis, and acanthocytosis. In the WBCs, alterations may mimic toxic changes seen with severe inflammation and/or infection.

Also, platelet and WBC clumping can occur which may cause falsely decreased platelet and WBC counts. If the sample is drawn at least above the bottom of the label, then potential EDTA artifacts can be eliminated.