78 The Power of Peripheral Blood Smears-Apparent Diagnostic Clues (Part 1)

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This session will focus on detecting and identifying morphologic abnormalities associated with a variety of benign and malignant hematologic conditions. Peripheral blood smears revealing red cell and/or platelet abnormalities will be reviewed in Part 1 and those revealing white cell abnormalities will be covered in Part 2. Audience participation in the discussion will be encouraged throughout the session. The format will consist of projection of an image or a slide by the faculty, detection and identification of morphologic abnormalities by the audience with help from the faculty as needed, and relating the findings to the most likely clinical condition by the audience and/or the faculty.

- Recognize diagnostically important morphologic abnormalities of blood cells.
- Relate the morphologic abnormalities to the associated clinical entities.
- Communicate the diagnostic clues/findings to the clinician.

FACULTY:

Gene Gulati PhD, SH(ASCP)
Entire Pathology Team
Hematopathology
Hematopathology
1.0 CME/CMLE Credit

Accreditation Statement: The American Society for Clinical Pathology (ASCP) is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education (CME) for physicians. This activity has been planned and implemented in accordance with the Essential Areas and Policies of the Accreditation Council for Continuing Medical Education (ACCME).

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The Power of Peripheral Blood Smears: 
Apparent Diagnostic Clues (Part 1) 
(Wednesday, October 19, 2011)

By 
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Conflict of Interest

None

Plan for the Course

Review blood smears, identify abnormal morphologic findings, and relate them to appropriate clinical condition(s)

Part 1: Red cell and platelet abnormalities
10 minutes interval
Part 2: White cell abnormalities

• Audience interaction encouraged throughout the course
Format of Presentation

A. Present an image of a blood smear (faculty)
B. Identify the abnormal findings
   (audience +/- faculty)
C. Summarize the pertinent abnormalities
   (faculty)
D. Relate the findings to appropriate clinical
   condition(s) (audience and faculty)
   (with the use of audience response system)

Normal

Case 1
Case 1

Question: Select the most likely clinical condition associated with the morphologic findings seen in this blood smear:

A. Thalassemia minor
B. Thalassemia major
C. Iron deficiency anemia
D. Anemia of chronic disease

Case 1: Answer

Case 2
Case 2

Question: The most likely clinical condition associated with the morphologic findings of this blood smear is:

A. Thalassemia minor
B. Thalassemia major
C. Anemia of chronic disease
D. Metastatic carcinoma

Case 2: Answer

Case 3
Case 3

Question: The red cell morphology seen in this blood smear of an adult is most consistent with:

A. Hereditary spherocytosis
B. Autoimmune hemolytic anemia
C. status post packed red cell transfusion
D. G-6-PD deficiency

Case 3: Answer

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Case 4
Case 4

Question: The morphologic findings seen in this blood smear are most consistent with:

A. Folate deficiency
B. Iron deficiency
C. Copper deficiency
D. Zinc deficiency

Case 4: Answer

Case 5
Case 5

Question: The morphologic findings seen in this blood smear of a 14 year old male with a MCV of 90 fL are most consistent with:

A. Sickle cell trait  
B. Sickle cell anemia  
C. Sickle-beta-thalassemia  
D. Sickle-alpha-thalassemia

Case 5: Answer

Case 6
Case 6

Question: The morphologic findings seen in this blood smear of a 33 year old female with an MCV of 87 fl are most consistent with:

A. Sickle cell trait
B. Sickle cell anemia
C. Sickle-thalassemia
D. Hemoglobin SC disease

Case 6: Answer

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Case 7
Case 7

Question: The morphologic findings seen in this blood smear are most consistent with:

A. Hemoglobin SC disease  
B. Hemoglobin C disease  
C. Hemoglobin D disease  
D. Hemoglobin E disease

Case 7: Answer

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Case 8

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Case 8

Question: The morphologic finding of this blood smear is most consistent with:

A. Hereditary elliptocytosis
B. Hereditary pyropoikilocytosis
C. Renal disease
D. Liver disease

Case 8: Answer

Case 9
Case 9

Question: The morphologic finding of this blood smear is most consistent with:

A. Sickle cell crisis
B. Hemoglobin SC disease
C. Hemolytic crisis in hereditary spherocytosis
D. Oxidant-induced hemolysis in a G6PD deficient patient

Case 9: Answer

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Case 10

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Case 10

Question: The morphologic abnormality seen in this blood smear is most consistent with:

A. Thrombotic thrombocytopenic purpura (TTP)
B. Disseminated intravascular coagulation (DIC)
C. Senile purpura
D. March hemoglobinuria

Case 10: Answer
Case 11

Question: The findings of this blood smear of a 50 year old female with a platelet count of 750 x 10^3/uL are most consistent with:

A. Thrombocytosis (reactive)
B. Thrombocythemia
C. Polycythemia vera
D. Chronic myeloproliferative neoplasm, unclassifiable

Case 11: Answer
Case 12

Question: The morphologic abnormality seen in this blood smear is seen primarily in the blood specimen anticoagulated with:

A. Ethylenediaminetetraacetate (EDTA)  
B. Sodium citrate  
C. Sodium heparin  
D. Lithium heparin

Case 12: Answer

References

   by Gulati, G and Caro, M (ASCP Press, 2007)

2. Color Atlas of Hematology  
   Editor: Glassy, EF (CAP, 1998)

   by Gulati, G (ASCP Press, 2009)

4. Case Studies in Hematology and Coagulation  