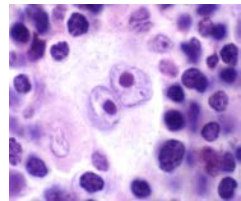




Team Based Learning

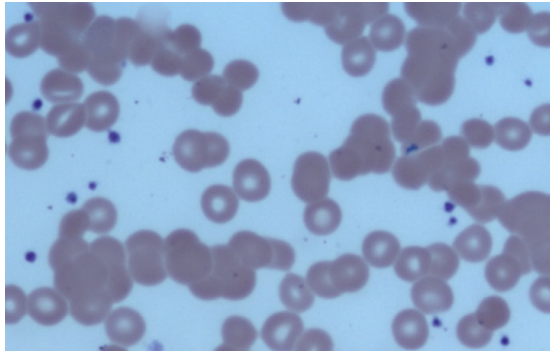
2023- 2024



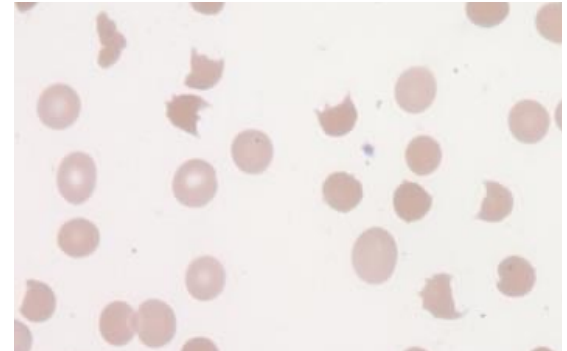
1. It's a busy call night at Yale-New Haven Hospital, and you've been asked to see one patient who needs a red cell exchange transfusion, one who needs therapeutic plasma exchange and steroids, one who needs steroids and intravenous immune globulin (IVIg), and one who needs a transfusion of warmed packed red blood cells (pRBC). You go to the lab to pickup blood smears for these patients, only to realize that none of the smears are labeled. Which smears correspond to which interventions?

- A. Red cell exchange transfusion.
- B. Therapeutic plasma exchange plus steroids.
- C. Steroids plus IVIg.
- D. Transfusion of warmed pRBC.

(1)



(3)

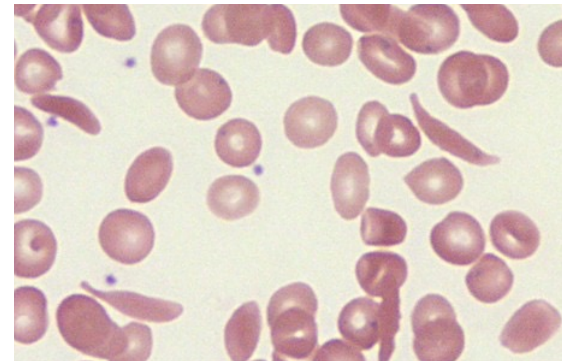


(2)



platelet

(4)



2. A 40 year-old patient presents to the emergency department with one week of fatigue, confusion, and bruising. On exam, he is febrile to 101.3 and tachycardic with a pulse of 110, and he has wet purpura in his mouth, petechiae all over his legs, and bruises on his abdomen. A CBC shows a hemoglobin of 6 g/dL and platelet count 6,000/mcL. A peripheral blood smear shows a number of schistocytes. You wonder if he might have thrombotic thrombocytopenic purpura (TTP), but the emergency department attending thinks that he has disseminated intravascular coagulation (DIC) from an occult infection. Which of the following statements is true about laboratory testing in TTP and DIC?

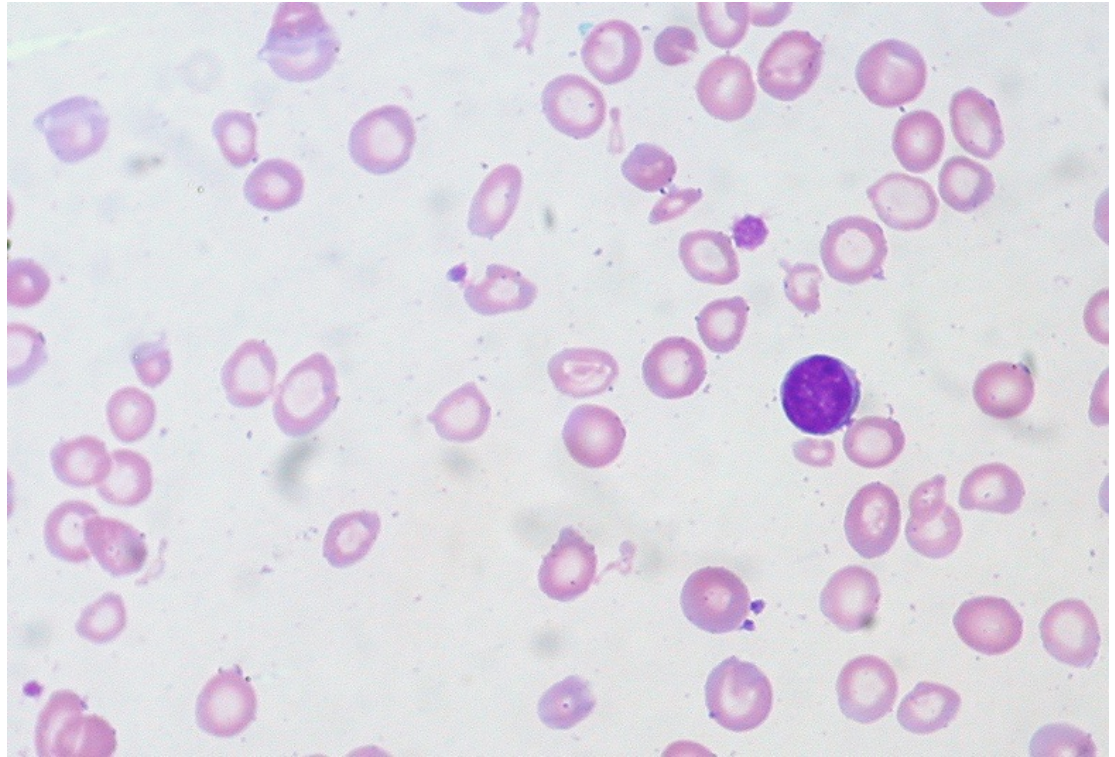
- A. In TTP, the PT and PTT will be high and the fibrinogen low, while in DIC, these values will all be normal.
- B. In DIC, the PT and PTT will be high and the fibrinogen low, while in TTP, these values will all be normal.
- C. Both TTP and DIC have similar values for PT, PTT, and fibrinogen.

3. Which of the following statements accurately describes some of the differences between extravascular and intravascular hemolysis?

- A. In extravascular hemolysis, usually the haptoglobin is very low, while in intravascular hemolysis, it is usually low or normal.
- B. In extravascular hemolysis, the haptoglobin can be low or normal, while in intravascular hemolysis, the haptoglobin is almost always low.
- C. The reticulocyte count is usually lower in extravascular hemolysis than in intravascular hemolysis.
- D. The reticulocyte count is usually higher in extravascular hemolysis than in intravascular hemolysis.

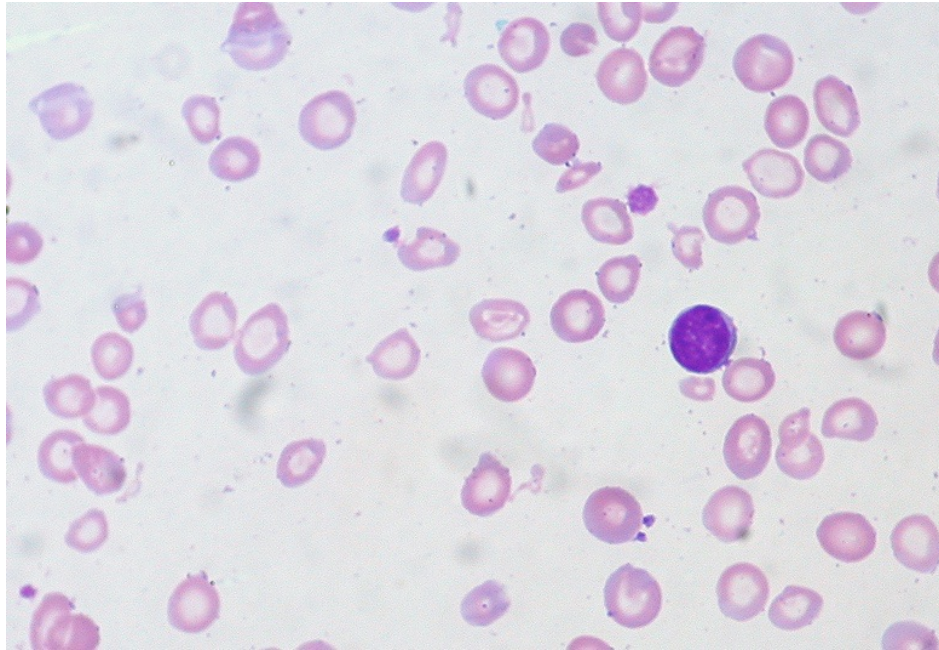
4. Which of the following is the most appropriate statement to say to a 51 year-old man with anemia and the following blood smear?

- (A) “You need hydroxyurea to increase your fetal hemoglobin level.”
- (B) “You should have a colonoscopy.”
- (C) “We need to make sure your immunizations are up-to-date prior to splenectomy.”
- (D) “Avoid trimethoprim/sulfamethoxazole and fava beans.”



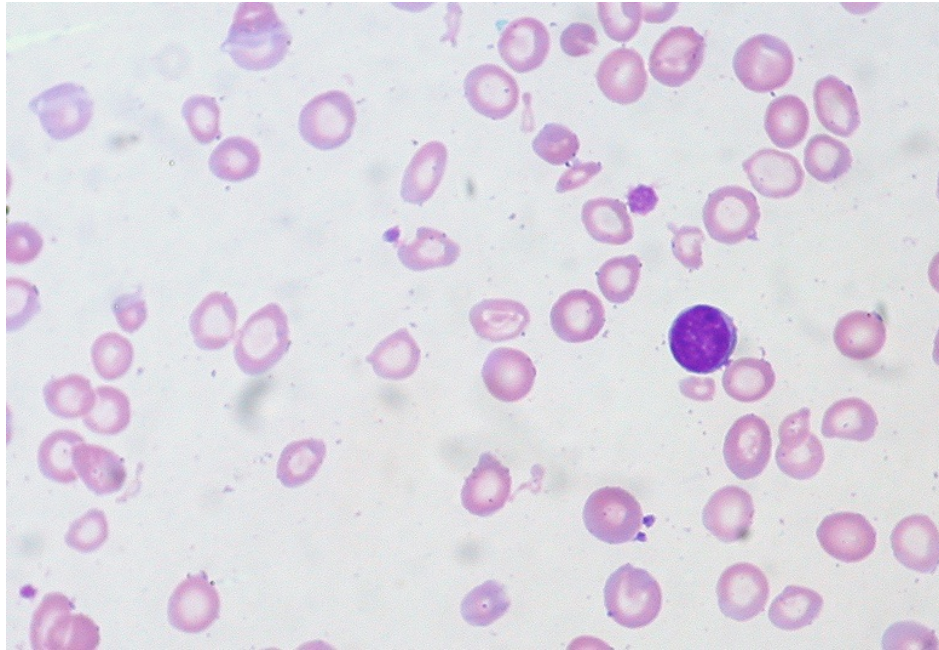
5. What is the expected MCV for the CBC below?

- A. < 80 fL (decreased)
- B. 80-100 fL (normal)
- C. > 100 fL (increased)



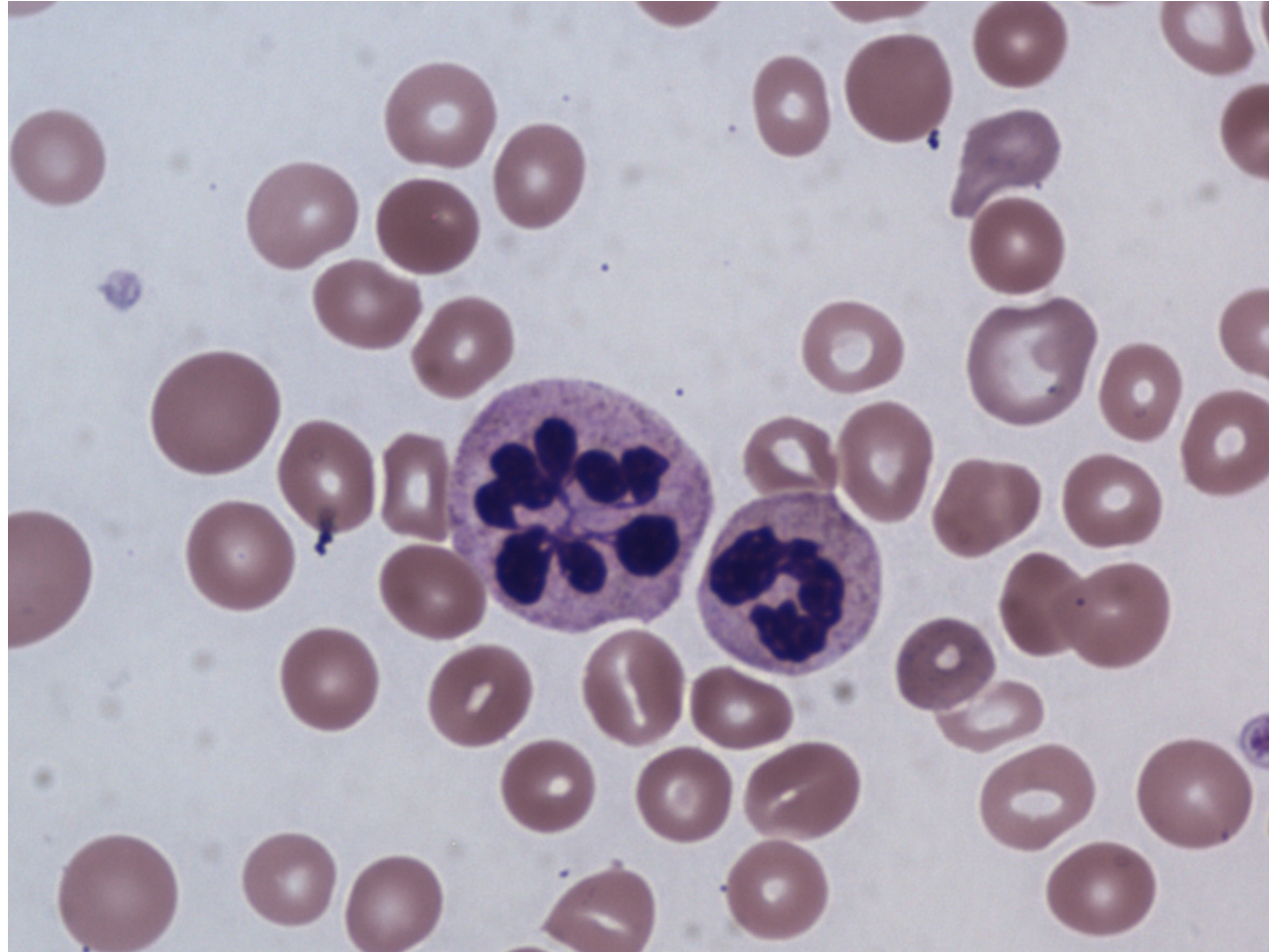
6. What is the expected RDW for the CBC below?

- A. < 15% (not elevated)
- B. > 15% (elevated)



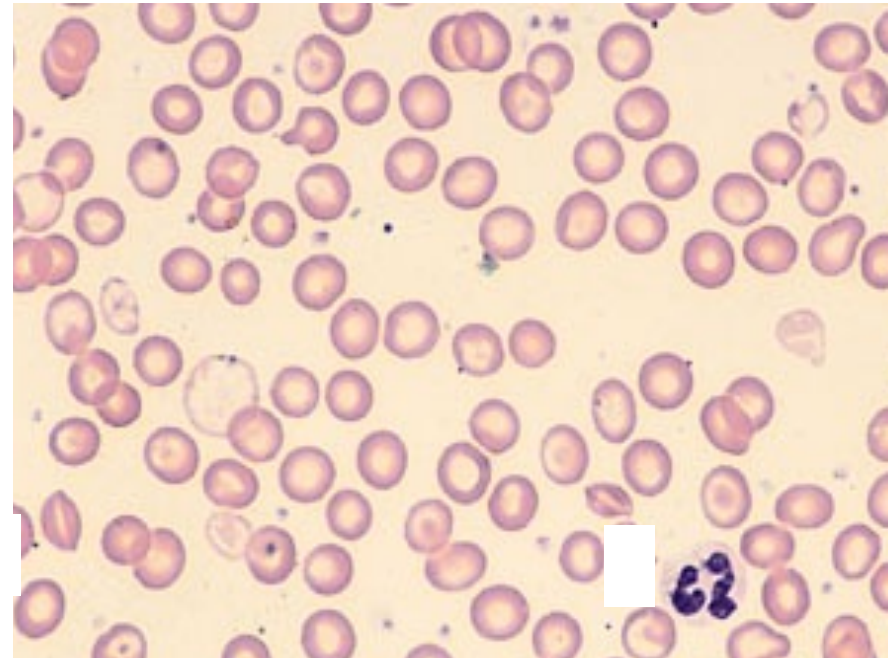
7. Which of the following can be associated with the following smear?

- (A) Numbness or tingling in the extremities
- (B) Elevated homocysteine
- (C) An autoimmune disease
- (D) All of the above



8. Which of the following hemoglobin electrophoresis patterns best fits with this smear?

- | | | |
|-----|------------------------|-----|
| (A) | Hemoglobin A (Hgb A) | 80% |
| | Hemoglobin A2 (Hgb A2) | 10% |
| | Hemoglobin F (Hgb F) | 10% |
| (B) | Hemoglobin A (Hgb A) | 96% |
| | Hemoglobin A2 (Hgb A2) | 4% |
| (C) | Hemoglobin A (Hgb A) | 54% |
| | Hemoglobin S (Hgb A2) | 3% |
| | Hemoglobin S (Hgb S) | 43% |



9. A patient with chronic anemia and recurrent pain crisis has a hemoglobin electrophoresis that shows the following:

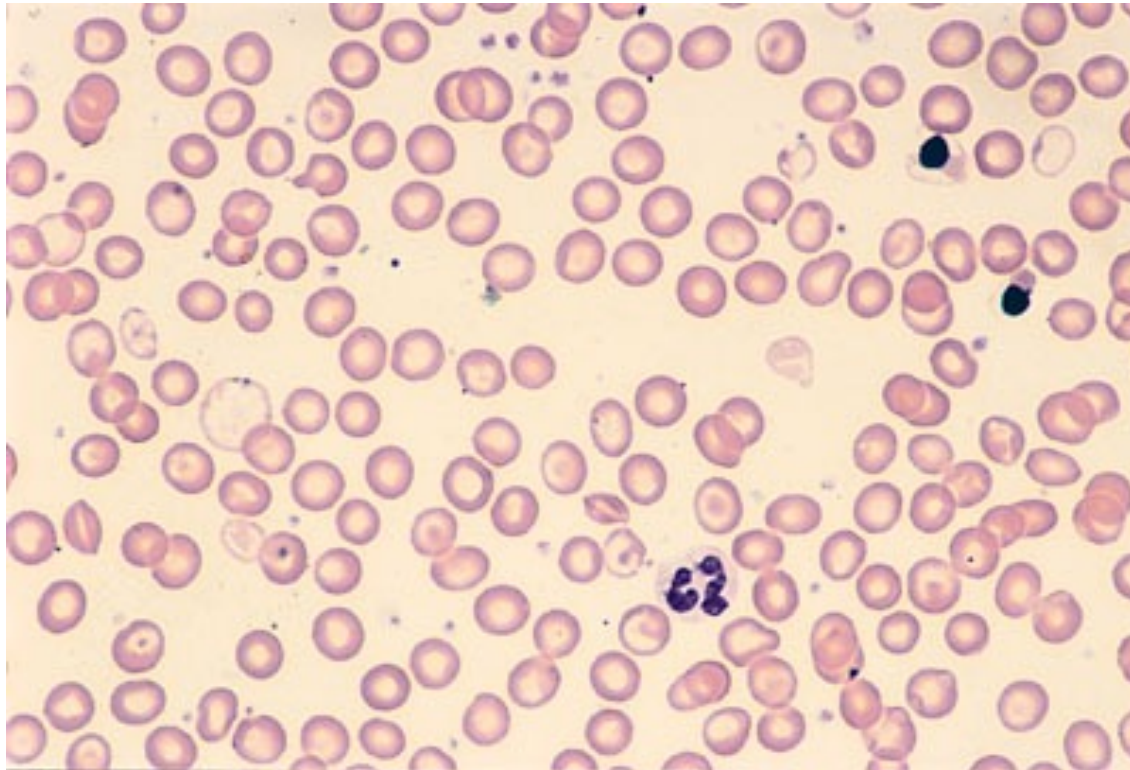
Hgb A	30%
Hgb A2	9%
Hgb S	58%
Hgb F	3%

What condition best fits the hemoglobin electrophoresis pattern?

- A. Sick cell disease.
- B. Sick cell trait.
- C. Sick cell/alpha-thalassemia.
- D. Sick cell/beta-thalassemia.

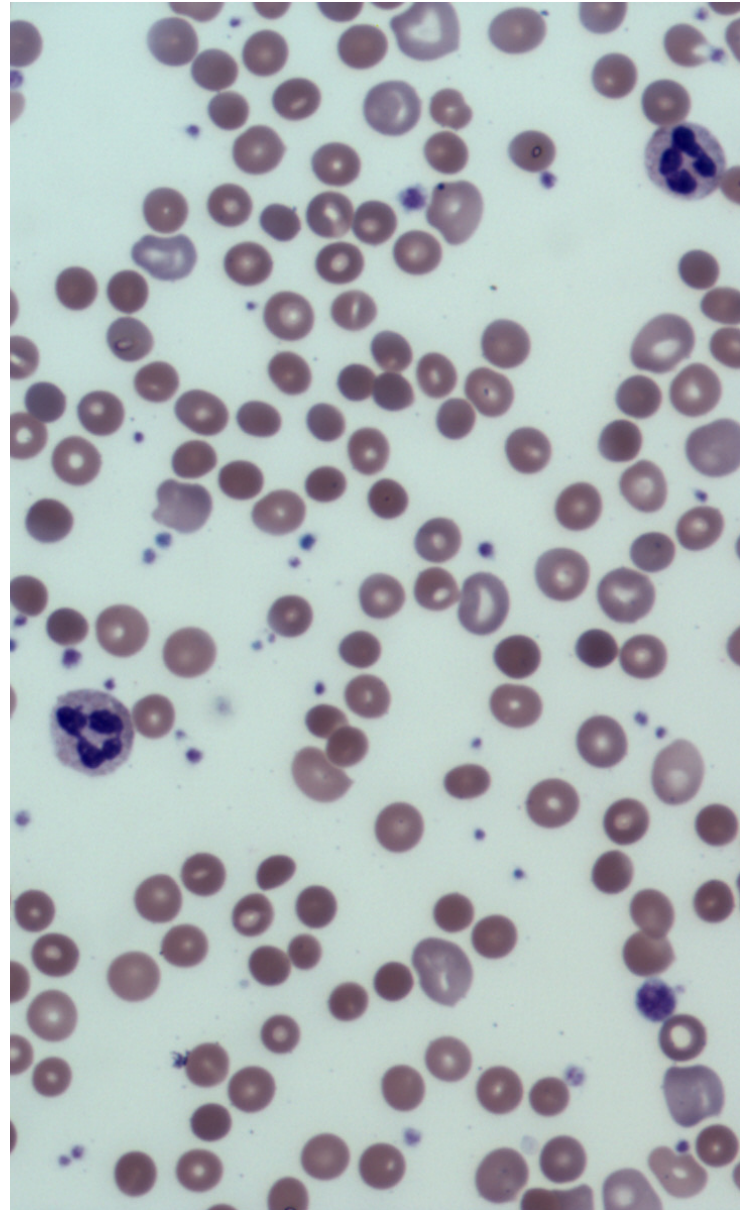
10. Which clinical vignette best fits the following blood smear?

- A. Patient with fatigue and heavy uterine bleeding.
- B. Patient with recurrent falls, glossitis and neuropathy.
- C. Patient with a family history of anemia.



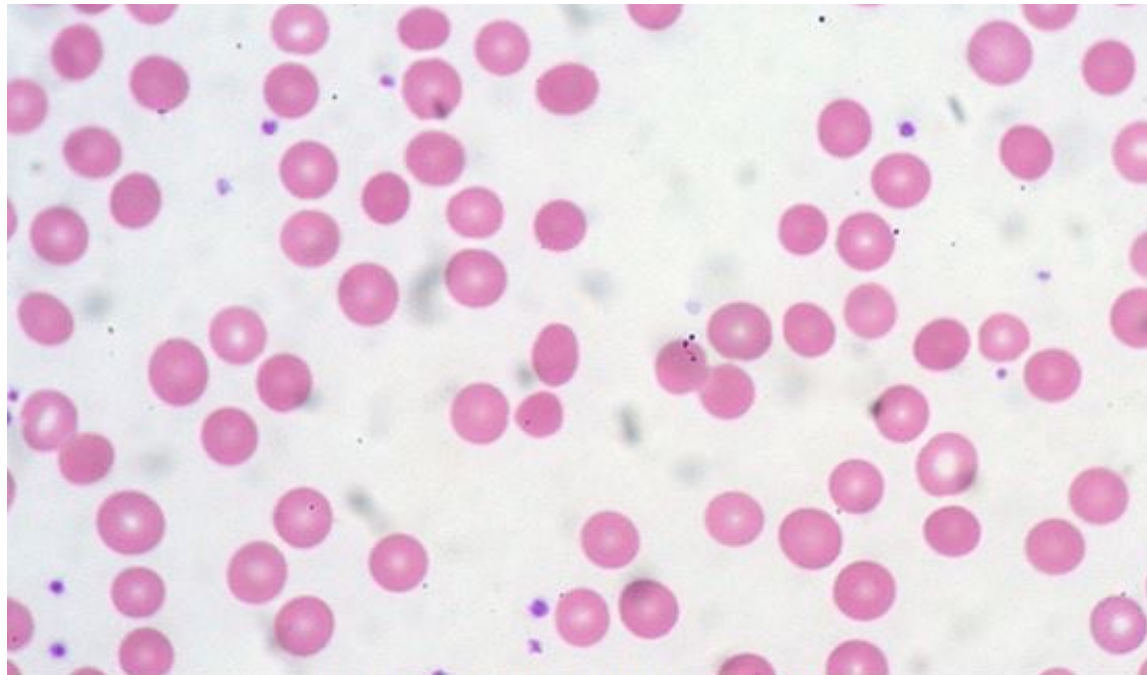
11. Which test would be most appropriate to order after reviewing this peripheral blood smear?

- A. Iron studies
- B. Direct antiglobulin test
- C. G6PD testing
- D. Hemoglobin electrophoresis



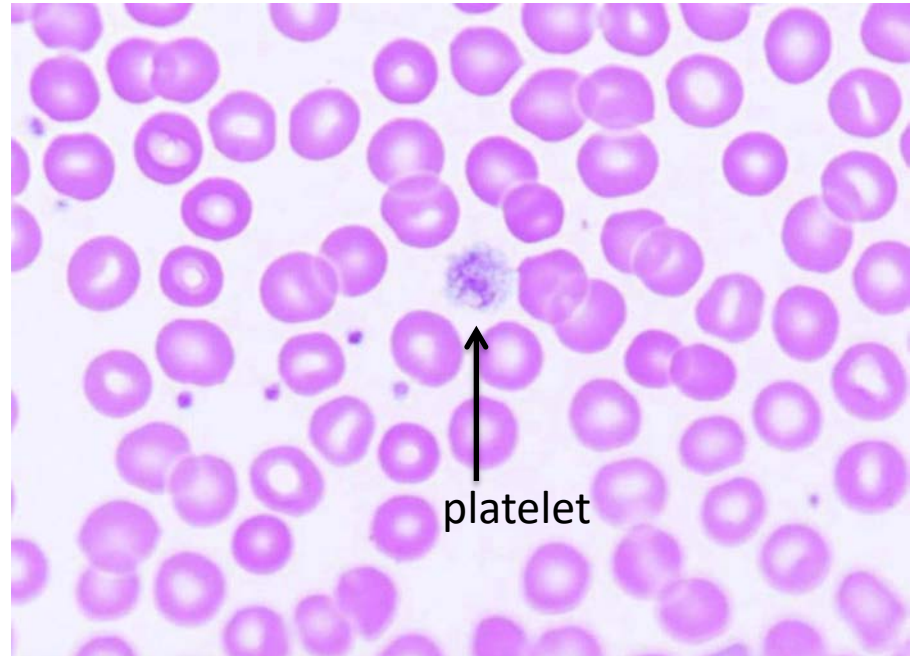
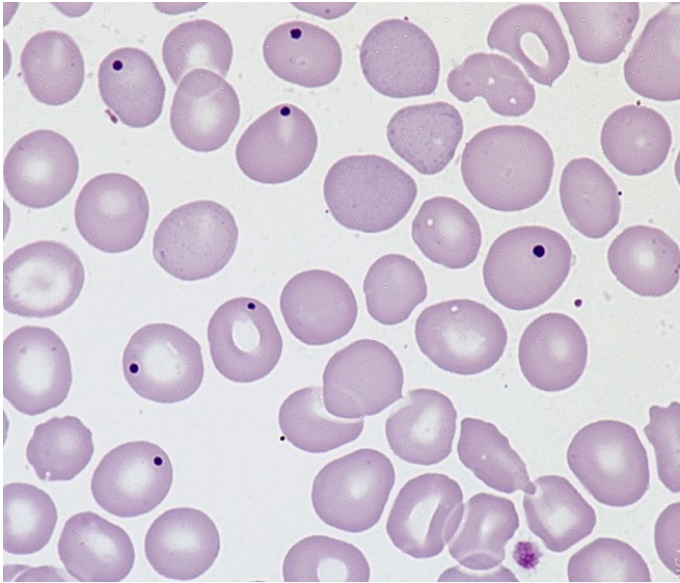
12. Which clinical vignette best fits the following blood smear?

- A. Person who is vegan.
- B. Person with gallstones and jaundice, and a family history of a cousin with anemia who underwent splenectomy at a young age.
- C. Patient with jaundice and scleral icterus after taking trimethoprim-sulfamethoxazole for a urinary tract infection.

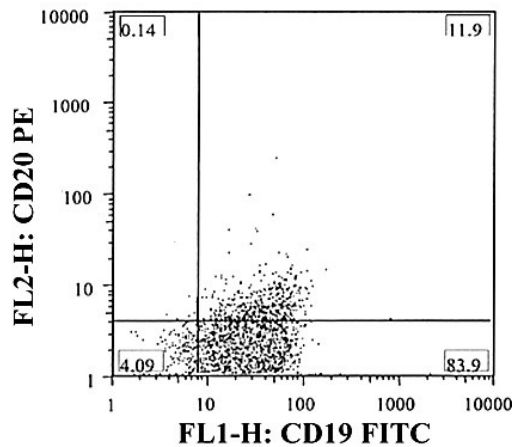


13. A patient has a relapsing blood disorder, leading to the smear on the right. He undergoes some type of treatment for this. Which post-treatment image(s) could belong to him?

(A)



(B)

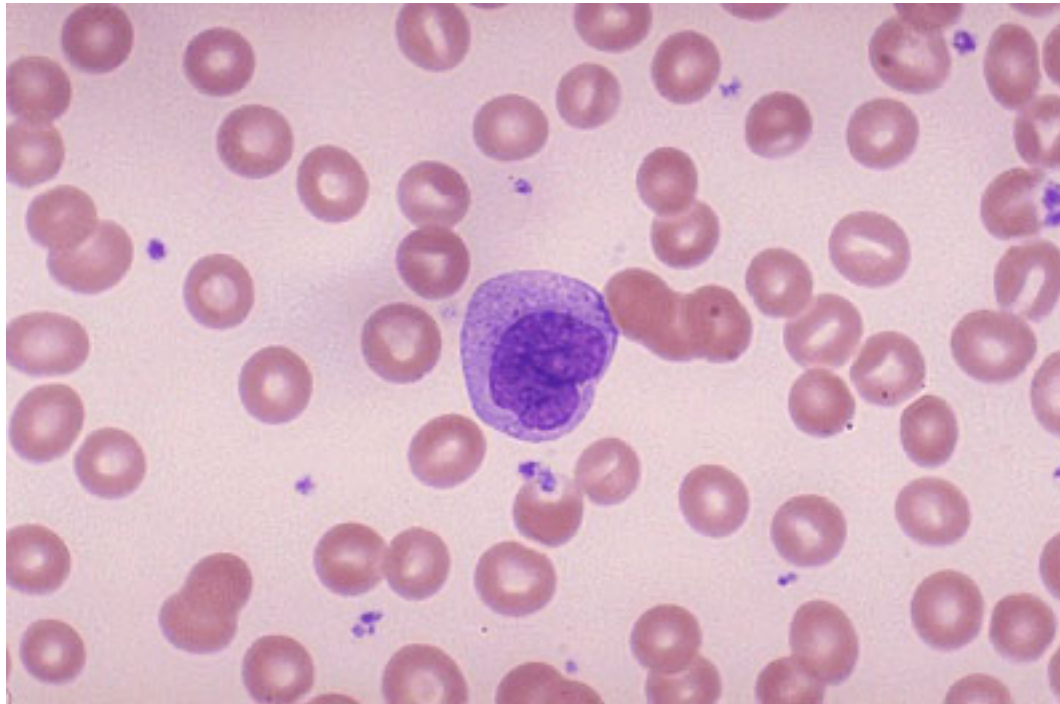


(C) Both (A) and (B)

(D) Neither (A) nor (B)

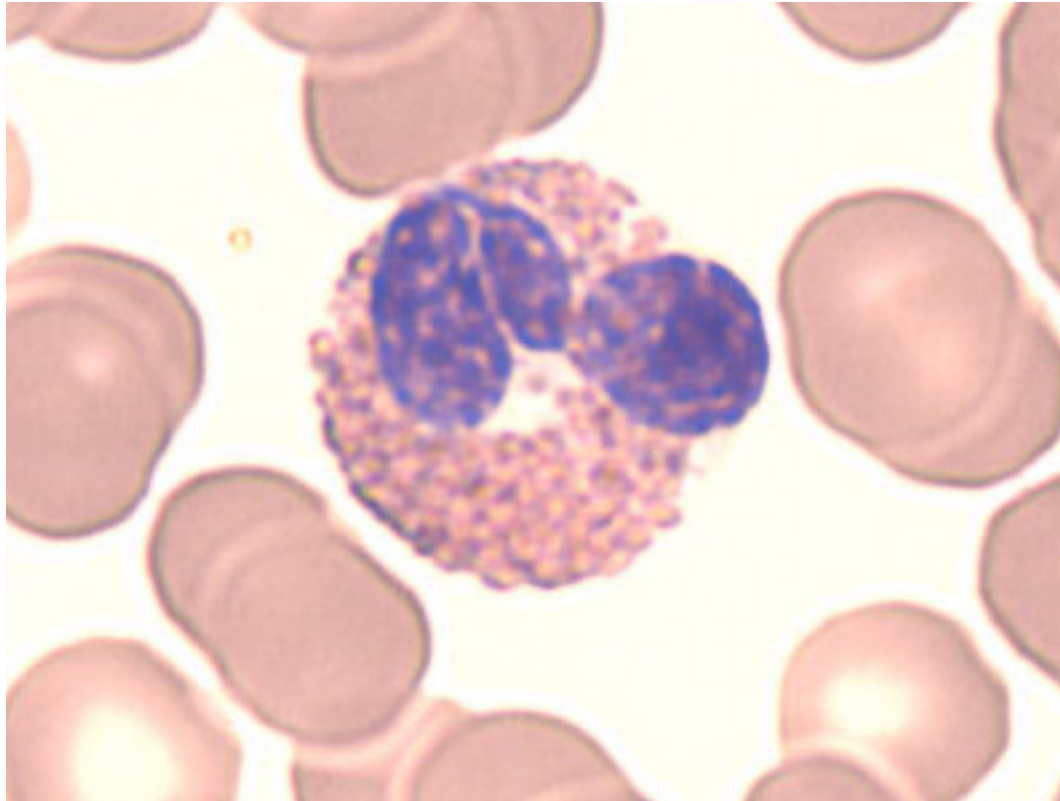
1. Identify the cell.

- A. Lymphocyte
- B. Monocyte
- C. Basophil
- D. Neutrophil



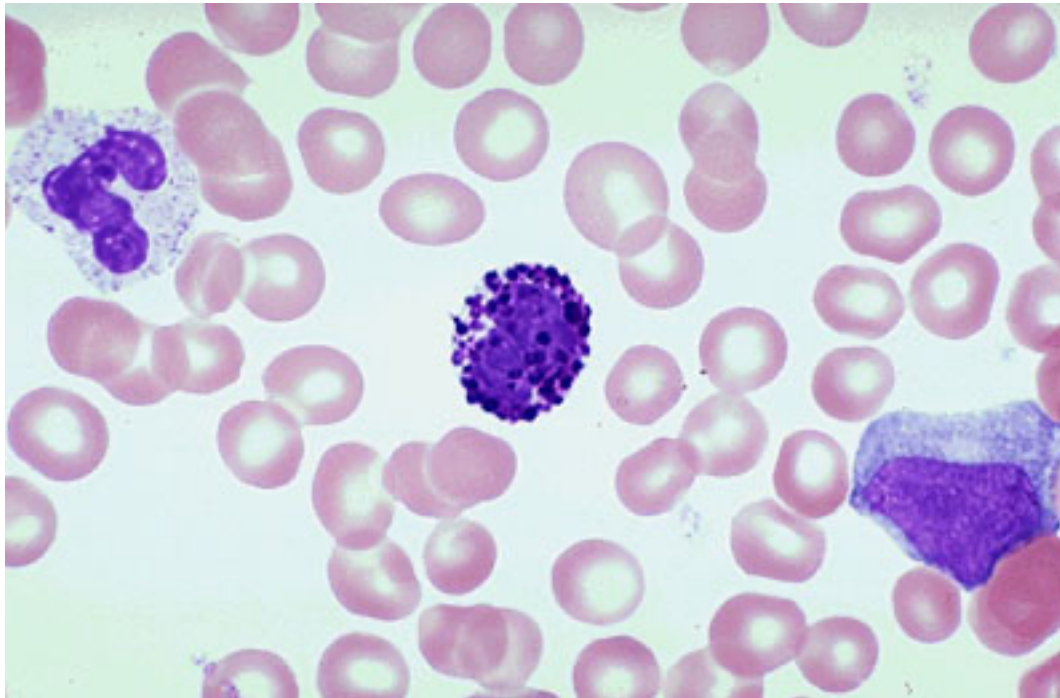
2. Name a condition in which these cells will be elevated.

- A. Bacterial infection
- B. Viral infection
- C. Parasitic infection
- D. Anemia



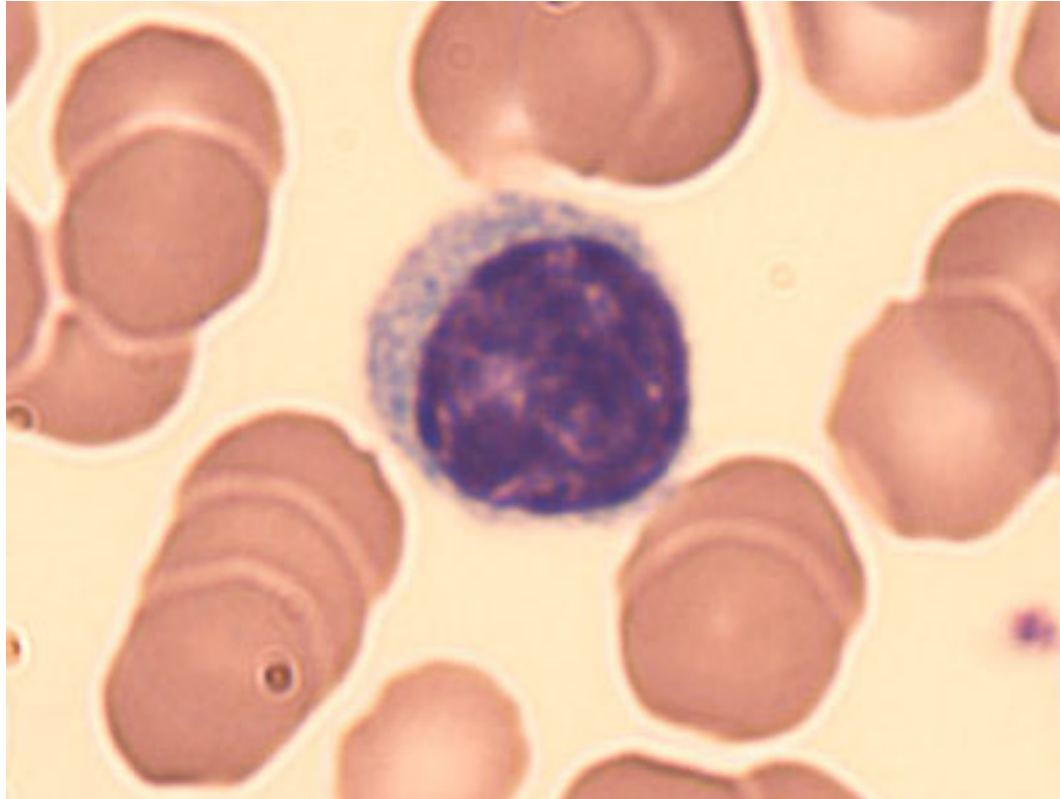
3. Which of the following component(s) is/are found in the dark, blue granules in the cell in the center of the image?

- A. Histamine
- B. Acid hydrolases
- C. Antibodies
- D. Peroxidase



4. Identify the cell with a nucleus.

- A. Monocyte
- B. Basophil
- C. Neutrophil
- D. Lymphocyte



5. Under what condition would you classically expect to see an increased number of these nucleated cells?

- A. Bacterial infection
- B. Viral infection
- C. Parasitic infection
- D. Anemia

