

A 1-year-old African American girl is brought to the office for routine evaluation. She is learning how to walk and says "mama" and "dada." She recently transitioned from breast milk to cow's milk. Review of systems is negative. Both parents have sickle cell trait and her sister has sickle cell disease. Her height and weight are appropriate for her age. Physical examination shows a well-appearing, well-nourished child with no abnormalities. Laboratory results are as follows:

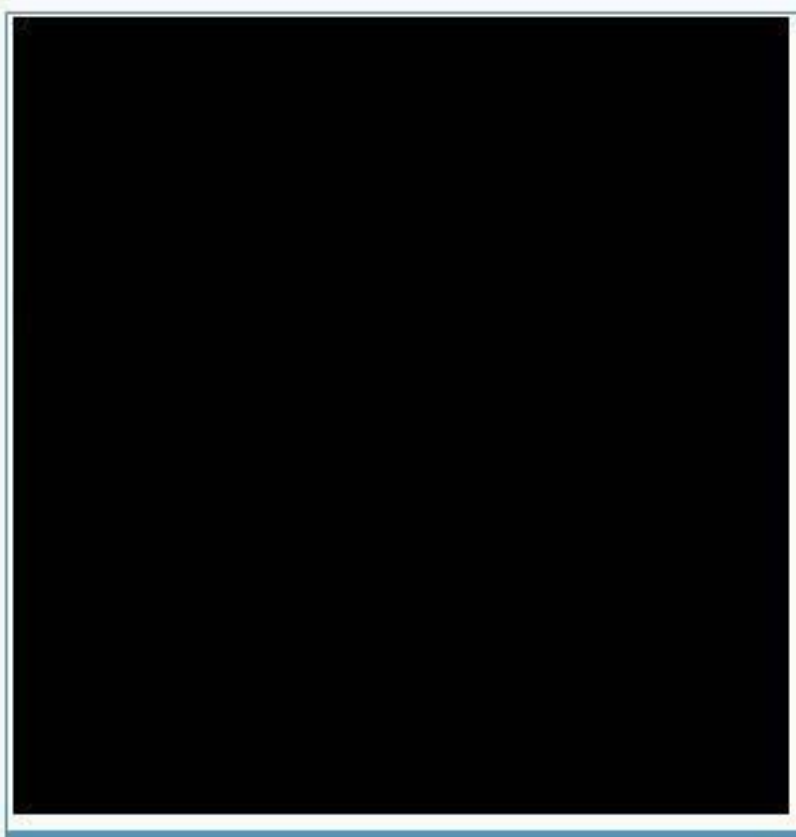
Complete blood count

Hemoglobin	14 g/dL
Hematocrit	42%
Mean corpuscular volume	88 fL
Reticulocytes	2%

Hemoglobin electrophoresis

Hemoglobin A	60%
Hemoglobin S	40%
Hemoglobin F	0%

What is the most common complication of her condition?



- A Acute Chest Syndrome
- B Dactylitis
- C Hematuria
- D Ischemic Stroke
- E Osteomyelitis
- F Splenic Infarction
- G Urinary Tract Infection



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What is the most common complication of her condition?

- ☐ A. Acute chest syndrome [4%]
- ☐ B. Dactylitis [15%]
- ☒ C. Hematuria [50%]
- ☐ D. Ischemic stroke [1%]
- ☐ E. Osteomyelitis [2%]
- ☐ F. Splenic infarction [24%]
- ☐ G. Urinary tract infection [5%]



Explanation:

User Id: [REDACTED]

Hemoglobin electrophoresis patterns			
Diagnosis	Hemoglobin A	Hemoglobin S	Hemoglobin F
Normal	~99%	0%	<1%
Sickle cell disease	0%	85-95%	5-15%
Sickle cell trait	50-60%	35-45%	<2%

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Sickle cell disease is a hemoglobinopathy with an **autosomal recessive** inheritance. When both parents carry the trait, their children are at risk for inheriting the disease. This patient's hemoglobin electrophoresis pattern and normal complete blood count are consistent with being a carrier for the sickle cell trait.

Individuals with sickle cell trait are generally asymptomatic and can lead a healthy life. Although patients are at increased risk for renal issues, the most common of these is painless microscopic or gross **hematuria** that results from sickling in the renal medulla. **Isosthenuria** (impairment in concentrating ability) is also common and can present as nocturia and polyuria. Less commonly, there may be an increased risk of urinary tract infections, particularly during pregnancy (**Choice G**). Splenic infarctions (**Choice F**) are uncommon but can occur at high altitudes.

(**Choices A, B, D, and E**) Other complications of sickle cell disease are unlikely to occur with sickle cell trait.

**Educational objective:**

Most patients with sickle cell trait lead normal, healthy lives. Painless hematuria is the most common complication.

**References:**

1. [Complications associated with sickle cell trait: a brief narrative review.](#)
2. [Renal abnormalities in sickle cell disease.](#)