Sinusitis or Something Worse?
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CASE DESCRIPTION
A 61-year-old man with a history of seizures presents for a routine visit. His last seizure was several months ago and occurred the day after falling from a ladder. He does not recall hitting his head during this fall. Otherwise, his seizures have been well controlled. His only complaint is a persistent runny nose. Computed tomography scans reveal opacity with a fluid level in the left sphenoid sinus. The neurologist inquires whether a test exists for the presence of cerebrospinal fluid in the nasal drainage.

QUESTIONS
1. What laboratory test should be considered?
2. What is the biochemistry behind the test?
3. What specimen(s) should be collected?

The answers are on the next page.
1. An assay for β₂-transferrin on the nasal drainage should be considered. This protein can be identified by electrophoresis and immunofixation (1) (Fig. 1).

2. β₂-Transferrin is formed from the cleavage of sialic acid from β₁-transferrin by central nervous system neuraminidase. It is present in cerebrospinal fluid, perilymph, and aqueous humor but is not normally found in serum.

3. Rare transferrin allelic variants do occur in serum (2). Therefore, the fluid in question and the patient’s serum should be submitted to the laboratory. The patient’s serum is then used as a negative control.

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**References**
