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### CASE

A 56-year-old woman presents to the urgent care clinic believing she has a stomach virus or the flu. She had an episode of diarrhea about an hour after eating dinner the previous evening. Shortly after that, she vomited and developed a headache with fever and chills. She took two acetaminophen tablets and went to sleep. This morning, the patient vomited again after drinking a cup of coffee. Her headache worsened, and she still felt feverish. She also reports nasal congestion, body aches, and a feeling that her ears are clogged. She denies any photophobia, change in vision, dizziness, sore throat, cough, chest pain, or abdominal pain. She took no OTC drugs besides the acetaminophen.

The patient had been feeling a slight headache for the past 2 weeks, which she attributes to chronic sinus congestion and a current effort to quit smoking. She has been using nicotine replacement gum for the past 2 weeks. Her medical history is significant for hypertension controlled with hydrochlorothiazide and chronic sinus infections treated with antibiotics and decongestants. She has no history of surgeries, serious injuries, or medication allergies. Her last menstrual period was 2 weeks ago, and she denies pregnancy.

**Examination** The patient does not appear to be in any distress and is not dehydrated. Vital signs are BP, 128/74 mm Hg; pulse, 78 beats per minute; respirations, 16 breaths per minute; and temperature, 98.2°F (36.8°C). Her eyes are anicteric, with the pupils equal, round, and reactive to light; extraocular movements are intact. Funduscopic exam reveals flat discs with no papilledema. There is no erythema, retraction, or bulge of the tympanic membrane, and landmarks are well visualized. There is no maxillary or frontal sinus tenderness and no swelling of the inferior turbinates. The patient has no pharyngeal erythema, her tonsils are not enlarged, and mucous membranes are moist. There is no anterior or posterior adenopathy. She feels pain with neck flexion on active motion but has no palpable tenderness of the cervical spine vertebrae. Lungs are clear to auscultation bilaterally with no wheezes, rhonchi, or rales. Heart rate and rhythm are regular with normal S<sub>1</sub> and S<sub>2</sub> and there is no murmur, gallop, or rubs. Bowel sounds are positive; there is no tenderness, rebound, or guarding and no hepatosplenomegaly. Kernig's and Brudzinski's signs, Romberg's test, and pronator drift are all negative. Cranial nerves 2 through 12 are intact. The patient has good skin turgor with no rash or lesions. Results of a CBC and comprehensive metabolic panel are within normal limits.

The author is a clinical assistant professor in the Seton Hall University PA program and is in private practice at the Care Station, Springfield, New Jersey. She has indicated no relationships to disclose relating to the content of this article. Erich Fogg is Assistant Professor in and Program Director of the Physician Assistant Program at the College of Health Professions, University of New England, Portland, Maine.

### WHAT IS YOUR DIAGNOSIS?

- Viral gastroenteritis
- Subarachnoid hemorrhage
- Nicotine replacement gum side effect

### DISCUSSION

The combination of neck pain with forward head flexion, headache, and vomiting raises the suspicion of an intracranial pathology. CT of the brain was performed and revealed increased density at the level of the sylvian fissure, suggesting blood. A diagnosis of subarachnoid hemorrhage was made.

**Treatment** The patient was admitted to the hospital. Emergency angiography indicated a ruptured right posterior communicating artery aneurysm. She underwent a successful clip ligation of the aneurysm. The patient made an excellent recovery, slowly resuming her daily activities; she returned to work 6 months later. One year later, follow-up CT was normal and she continues to do well.

**Comment** Congenital saccular aneurysms account for 80% to 90% of subarachnoid hemorrhages.<sup>1</sup> Other causes include arteriovenous malformation, CNS neoplasms, hematologic disorders, and trauma. Despite significant advances in neuroimaging, most subarachnoid hemorrhages are not discovered until they rupture, and misdiagnosis is still common.<sup>2</sup>

Patients usually complain of a sudden, severe headache, frequently describing it as "the worst headache of my life."<sup>3</sup> In 50% of cases aneurysms produce prodromal signs and symptoms as they gradually expand; this leads to a distinct headache in the days to weeks before rupture, referred to as the *sentinel bleed*.<sup>3</sup> Neck pain and rigidity do not occur until after considerable loss of blood. Loss of consciousness and vomiting are common sequelae. Classic physical examination findings include retinal hemorrhages, nuchal rigidity, restlessness, and focal neurologic signs.<sup>3</sup> Noncontrast CT identifies subarachnoid hemorrhages in 90% of cases;<sup>1</sup> however, its sensitivity decreases over time.<sup>3</sup> A negative scan with the presence of symptoms suggesting a subarachnoid hemorrhage indicates the need to perform a lumbar puncture. The presence of blood or xanthochromia in the CSF confirms the diagnosis.

Management usually consists of identifying the site of the hemorrhage, removing as much blood as possible, and repairing the aneurysm if present. Patients are put on bed rest and given analgesics for pain and laxatives to prevent straining. Medical complications include rebleeding, cerebral vasospasm, hydrocephalus, and seizures. □

### REFERENCES

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