A 17-Year-Old Female With Secondary Amenorrhea, Galactorrhea, and Headaches

Denise M. Frohlich, MD, Kenneth J. Caldwell, Henry Rohrs, MD, & Maria N. Kelly, MD

Denise M. Frohlich, Pediatric Resident, University of North Carolina, Chapel Hill, NC.

Kenneth J. Caldwell, Fourth-Year Medical Student, University of Florida, Gainesville, FL.

Henry Rohrs, Pediatric Endocrinologist, Department of Pediatric Endocrinology, University of Florida, Gainesville, FL.

Maria N. Kelly, General Pediatrician, Department of Pediatrics, University of Florida, Gainesville, FL.

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Correspondence: Maria N. Kelly, MD, Department of Pediatrics, University of Florida, PO Box 100296, Gainesville, FL 32610-0296; e-mail: kellymn@peds.ufl.edu.

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A 17-year-old female adolescent presented to her primary care provider for evaluation of chronic headaches, secondary amenorrhea, and milky breast discharge. She did not report any visual field changes. Her laboratory findings, in conjunction with magnetic resonance imaging (MRI) results, confirmed the diagnosis of a pituitary macroadenoma, specifically a macroprolactinoma. Although pituitary adenomas are extremely rare in the pediatric population, suspicious symptoms should warrant a specific workup, which is described.

CASE PRESENTATION

The adolescent had headaches for the past 2 years that she described as frontal and throbbing. They occurred a few times a week to daily and had not worsened in intensity or chronicity since presentation. Her headaches were associated with photophobia when they were severe, worsened perimenstrually, and were relieved by acetaminophen and ibuprofen. They did not awaken her while sleeping and were not present upon awakening in the mornings. She also described some intermittent nausea (but no vomiting or diarrhea) over the course of her symptoms, which was sometimes but not always associated with headaches.

In addition to headaches, she also reported milky breast discharge that has occurred for the past year. Initially it was elicited only with manual expression, but in the past few months it had occurred spontaneously. She also noted that her menses had become increasingly irregular, occurring only every 3 to

4 months, with her last menses 5 to 6 months prior to presentation. She was sexually active and had three negative self-administered urine pregnancy tests during the past few months. The patient expressed concerns that her recent menstrual irregularities, headaches, and milky breast discharge had become more disruptive in her daily life and had worsened her generalized anxiety disorder. Other than an increase in her usual baseline occasional anxiety symptoms in the past few months, she had no additional complaints or concerns. Prior to this visit, the patient denied mentioning this constellation of symptoms to any providers. She stated that her last medical visit was more than a year ago for her annual well check.

The patient had a history of allergic rhinitis, atopic dermatitis, depression, anxiety, myopia, gastroesophageal reflux disease, and a chlamydia infection with test of cure 1 year ago (gonorrhea and human immunodeficiency virus tests were negative). Her only current problems included eczema and intermittent anxiety symptoms. She denied any symptoms for depression at this time and had not had depressive symptoms since junior high school. Her current medication included alprazolam (0.5 mg) that she took as needed (approximately one to two times per month) for anxiety symptoms. She denied the usage of any antipsychotic medications, including risperidone (Risperdal). Her menarche was at age 12 years. She was up to date with all immunizations, including the complete series for human papillomavirus vaccination. She noted an allergy to penicillin that had caused nausea and vomiting in the past.

With regard to social history, she smoked 1.5 packs of cigarettes per day with a 2.5 pack-year history. She denied use of smokeless tobacco and illicit drug use. She drank approximately one to four beers per week, primarily on the weekends. She was sexually active with male partners and did not use condoms consistently. She was employed part time as a server and was completing her senior year in high school. With regard to family history, her mother had a history of cervical cancer and depression. Her father had a history of alcohol abuse. On her maternal side, there was a family history of migraines in two aunts. She was unaware of further details regarding these diagnoses.

REVIEW OF SYSTEMS

The patient denied any fevers, chills, sweats, fatigue, weight change, double vision, visual field changes, wheezing, respiratory distress, palpitations, syncope, vomiting, changes in bowel habits, speech, gait, or strength, numbness/tingling, or polydipsia. She had a mild cough and reported intermittent episodes of anxiety and feelings of sadness that had worsened recently, requiring use of alprazolam once or twice weekly.

PHYSICAL EXAMINATION

The patient weighed 64.5 kg (71st percentile) and was 60 inches tall (4th percentile). Her body mass index was 28.42 kg/m^2 (88th percentile). Her blood pressure was 120/78 mmHg, pulse was 78 beats per minute, respiratory rate was 16 breaths per minute, and temperature was 36.2°C. She appeared to be a well-nourished, well-hydrated White female in no acute distress; she was polite and cooperative. Results of her head, eyes, ears, neck, and throat examinations were within normal limits. Her pupils were equal, round, and reactive to light with normal extraocular movements and visual fields. Her optic disks were easily visualized, and she had no papilledema. Her neck was supple with full range of motion with no thyromegaly. No lymphadenopathy was present. Her chest examination was normal, revealing lungs clear to auscultation and normal heart sounds without murmurs, rubs, or gallops. She had Tanner stage 5 breasts that expressed a small amount (approximately 1 ml) of milky discharge (drops) upon palpation of the nipples bilaterally. No breast tenderness, nodules, or masses were appreciated. Her abdomen was soft, nontender, and nondistended with normoactive bowel sounds and without hepatosplenomegaly. Neurologically, she was alert and oriented to person, time, and place with a normal attention span and concentration, normal language, and good recent and remote memory. Her muscle strength was 5/5 in all major muscle groups with normal tone and no atrophy. Cranial nerves II through XII were all grossly intact. She had normal sensation, reflexes, finger-to-nose, and heel-to-toe testing throughout. Her skin was overall dry and rough, and she had additional skin-colored rough, raised patches on her abdomen and back with no central clearing or signs of secondary infection.

DIAGNOSTIC STUDIES

We obtained baseline endocrinologic laboratory testing and an MRI of the brain. Her laboratory tests demonstrated a thyroid-stimulating hormone (TSH) level at 1.570 milli-international units (mIU)/L (normal, 0.27–4.2 mIU/L). Follicle-stimulating hormone and luteinizing hormone levels were both just below the adult reference range of 4.2 mIU/ml (normal, 4.7–21.5 mIU/ml) and 4.4 mIU/L (normal, 5–25 mIU/ml), respectively. As expected, her prolactin level was elevated at 84.8 ng/ml (normal, 4.8-23.3 ng/ml).

The patient's MRI demonstrated enlargement of the pituitary gland, measuring 11.5×8 × 10 mm, and elevation of the normal-appearing pituitary stalk with suprasellar extension (Figures 1 and 2). Because no well-defined hypo-intense lesion was appreciated, global pituitary gland involvement was suspected. Unexpectedly, the lesion contacted the anterior aspect of the optic chiasm and the left optic nerve with no displacement of the optic chiasm (Figure 2).