Case of the Month

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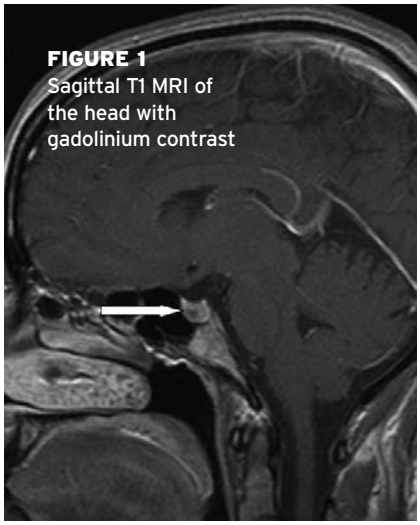

FIGURE 1
Sagittal T1 MRI of the head with gadolinium contrast

CASE

The patient is a 38-year-old woman who presented to clinic with a 3-month history of missed periods. She had been taking oral contraceptives (OCs) for the past 2 years to regulate her menses, which had become consistent at every 28 days. Without consulting a health care provider, she had discontinued the OCs. The patient understood that the return of her periods might be delayed but was now concerned. She denied the possibility of pregnancy. She also reported that the results of previous pelvic examinations had been normal. She denied the presence of pelvic pain or abnormal vaginal discharge.

History The patient was gravida 0, para 0; age of menarche was 15 years. She had a history of rosacea, irritable bowel syndrome, and occasional migraine headaches. Her medications included metronidazole topical gel (1%) daily; polycarbophil, 625 mg daily; and ibuprofen, 600 mg as needed.

Laboratory tests Initial results included a negative beta-hCG (human chorionic gonadotropin hormone) test and normal thyroid-stimulating hormone level. Other test results included follicle-stimulating hormone (FSH), 6.7 mIU/mL; luteinizing hormone (LH), 0.9 mIU/mL; and estradiol, 23 pg/mL. The patient was subsequently referred to a women's health clinic.

At the clinic, pelvic examination findings were normal. Breast examination also was unremarkable, with no nipple discharge. The prolactin level was elevated (87.9 ng/mL). An MRI of the patient's head was obtained with and without contrast (see Figure 1).

WHAT IS CAUSING THIS PATIENT'S AMENORRHEA?

- *Craniopharyngioma*
- *Prolactinoma*
- *Gonadotropin pituitary adenoma*
- *Rathke cleft cyst*

DISCUSSION

The patient had a prolactinoma, indicated by the increased prolactin level and a 4-mm microadenoma seen on the MRI. A prolactin level of 100 to 200 ng/mL (normal range: 3-25 ng/mL) is almost always caused by a prolactin-secreting adenoma.[1] When prolactin levels are lower than 100 ng/mL, the patient's medication history and drug use must be considered. Some common medications and drugs that contribute to hyperprolactinemia include tricyclic antidepressants, phenothiazines, haloperidol (Haldol, Haliperidol Intensol), methyldopa (Aldochlor 250, Aldoril), reserpine (Serpalan, Serpasil), verapamil, cimetidine (Tagamet), ranitidine (Tritec, Zantac), metoclopramide (Metroclopramide Hydrochloride Intensol, Reglan), OCs, opiates, and cocaine.[1,2]

Comment Prolactinomas are classified as either *microadenomas* (smaller than 10 mm) or *macroadenomas* (larger than 10 mm). Prolactin levels in macroadenomas are usually higher than 250 ng/mL.[3] Women commonly present with galactorrhea, amenorrhea, and infertility. Galactorrhea will occur only in parous women.[2] Hypogonadal symptoms in men include decreased libido and infertility, but more common manifestations are features related to the presence of a mass, such as visual loss and headache.

Treatment The patient was referred to an endocrinologist for treatment. Dopamine inhibits prolactin secretion; therefore, dopamine agonists are used for treating prolactinomas. Our patient was treated with bromocriptine (Parlodel), 2.5 mg at bedtime. Her prolactin levels normalized; her menses returned within 6 weeks of treatment and began to occur every 25 to 28 days.

Another common dopamine agonist used to treat prolactinomas is cabergoline (Dostinex). Dopamine agonists are also first-line therapy for macroadenomas, with surgical resection reserved for nonresponsive tumors or tumors that are compressing structures in close proximity of the pituitary gland.[2]

Other treatment issues include frequency of imaging, formal visual field testing, and duration of treatment. Taking the positive correlation between tumor size and serum prolactin levels into account, frequent imaging is not necessary for microadenomas unless there is a significant increase in serum prolactin level.[3] Our patient had one repeat MRI after 6 months of therapy; it showed that the tumor size was stable. Formal visual field testing should be performed in patients with macroadenomas or in those patients with visual symptoms.[1] Lastly, guidelines for duration of therapy with dopamine agonists are not formalized because of a lack of sufficient long-term follow-up data. JAAPA

Julie Gurwell is assistant professor in the Division of Physician Assistant Studies, University of Kentucky College of Health Sciences, Lexington. She has indicated no relationships to disclose relating to the content of this article.

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