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CASE

The patient is a 14-year-old girl who presents to the emergency department (ED) complaining of a "problem with her right eye." Her father noticed that her pupils were different sizes 1 hour prior to coming to the ED, while he and the patient were playing basketball. The patient reports no vision problems, visual changes, or trauma. She has not ingested any new substances or medications or used new eye makeup. She has not had headaches, photophobia, or other acute medical concerns.

History The patient's medical history is not significant for any abnormalities or conditions. She denies any drug, alcohol, or tobacco use. She reports no known drug allergies and is not taking any medications.

Physical examination The patient appears well and is not in acute distress. BP is 110/70 mm Hg; pulse, 92 beats per minute; respiration rate, 18 breaths per minute; temperature, 99.0°F (37.2°C); and weight, 107.8 lb.

The patient's head and face is normocephalic and symmetrical, without abnormalities. The neck is symmetrical, and the trachea is midline. The scleras of the eyes are anicteric, and no nystagmus is noted. Closer examination of the eyes reveals mydriasis in the right pupil, which measures 6 mm and is non-reactive to light. The left pupil measures 3 mm and is reactive to light. Extraocular movement is intact. Visual acuity is within normal limits bilaterally. Ears are clear, and hearing is intact to conversational speech. The nares are patent bilaterally, the oral mucosa is moist and without lesions, and the posterior oropharynx is without erythema or lesions.

On auscultation, the lungs are clear bilaterally with no adventitial breath sounds. Cardiac rhythm is regular, without murmurs, rubs, or gallops. Pulses are intact and equal throughout. The abdomen is nondistended, without scars; palpation reveals no hepatosplenomegaly, pulsatile or nonpulsatile masses, guarding, or rebound. Examination of the neck, axillae, and groin reveals no palpable lymphadenopathy or evidence of lymphedema. Gait and station are normal; peripheral musculature is normal strength, with no spasticity or rigidity. No flaccidity is noted. Extremities show no evidence of cyanosis, clubbing, edema, petechiae, infections, or lymphadenopathy. Skin exhibits no evidence of rash, pigmentation abnormalities, or injuries. A neurologic examination reveals no abnormalities.

Testing Stimulation of the peripheral constrictor was attempted with pilocarpine challenges of 0.125% and 1% con-

centrations. Neither concentration produced any changes in the patient's mydriasis.

WHAT IS YOUR DIAGNOSIS?

- Space-occupying lesion
- Adie's pupil
- Pathologic anisocoria
- Third nerve palsy

DISCUSSION

The correct diagnosis is pathologic anisocoria, a disparity that has a variety of causes. Pathologic anisocoria is an acute process; anisocoria is commonly used to mean "physiologic anisocoria," which is a 1- to 2-mm difference in pupil size in light and dark conditions.¹ Treatment depends on the clinical presentation. In a traumatic presentation, headache, altered mental status, and anisocoria may indicate an aneurysm or a space-occupying lesion. Close examination of a recent photograph may help determine if the anisocoria is new. In a nonemergent setting, as with our patient, anisocoria could be congenital or attributed to Horner's syndrome, third nerve palsy, Adie's pupil, iritis, prior trauma, or exposure to a foreign substance or pharmacologic agent.¹

Pilocarpine in low concentrations (0.125%) will constrict an Adie's pupil.² Higher concentrations (1%) will constrict a pupil affected by a third nerve palsy.² No response to pilocarpine usually indicates pharmacologic dilatation.² Because of the negative response to pilocarpine, pharmacologic causes and agents were explored. Research pointed to *Ipomoea alba*, a flowering vine commonly known as the "moonflower," as a possible cause of the patient's mydriasis. Her father knew of the flower because it grew in a neighbor's yard. The patient admitted to having been picking flowers in the neighbor's yard earlier in the day. Since the mydriasis occurred on the side of the patient's dominant hand, it was concluded that she probably rubbed her eye at some point after handling the flower. The pupillary dilatation resolved on its own over the next 2 days with no noted residual effects.

Comment *Ipomoea alba* can cause unilateral or bilateral mydriasis, depending on exposure. Topical exposure, usually from rubbing the eye, induces dilation of the pupil. The dilatation is present for 24 to 36 hours and usually resolves slowly and painlessly without intervention. *Ipomoea alba* is grown as an ornamental flower throughout the southern United States. Related to the morning glory, which also can cause mydriasis, it is called the "moonflower" because its blooms open at sunset and it relies on moths for pollination. The plant also causes a contact dermatitis if handled while the flower is in bloom. □

REFERENCES

1. Ferri FF. *Ferri's Clinical Advisor: Instant Diagnosis and Treatment*. Philadelphia, Pa: Mosby, Inc; 2004.
2. Birinyi F, Mauger TF. Ophthalmologic conditions. In: Knoop KJ, Stack L, Storrow AB, eds. *Atlas of Emergency Medicine*. New York, NY: McGraw-Hill; 1997:26-65.

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