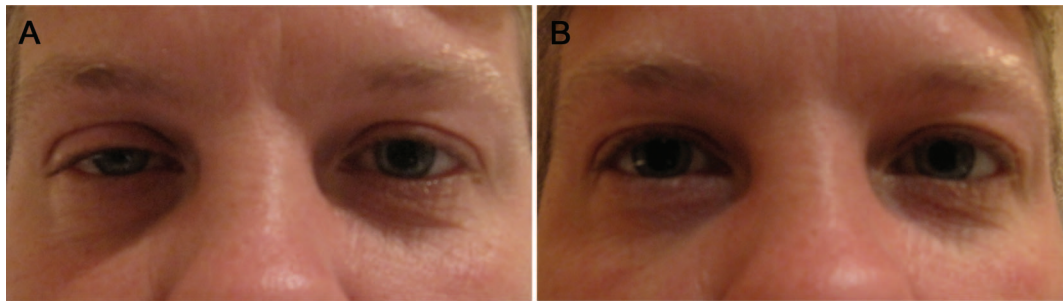


# Teaching NeuroImages: Positive apraclonidine test in Horner syndrome

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**Figure** Apraclonidine reverses anisocoria in Horner syndrome



(A) Right ptosis and miosis of the right pupil are present. (B) After instillation of apraclonidine, the right ptosis resolves, and the right pupil dilates, resulting in reversal of anisocoria and confirming the diagnosis of Horner syndrome.

A 36-year-old woman reported right eyelid drooping immediately after anterior cervical discectomy and fusion. Examination 2 weeks later revealed right miosis and right ptosis (figure, A). Instillation of one drop of 0.5% apraclonidine in both eyes resulted in reversal of anisocoria and resolution of ptosis (figure, B).

Apraclonidine, a selective  $\alpha_2$  agonist used to reduce intraocular pressure, has only weak  $\alpha_1$  action and, therefore, has little to no effect on a normal pupil. Patients with Horner syndrome may develop denervation hypersensitivity of  $\alpha_1$  receptors on the iris dilator muscle, resulting in mydriasis of the affected pupil in response to apraclonidine. Reversal of ptosis may also occur. This denervation

hypersensitivity may develop as soon as 36 hours after injury.<sup>1</sup>

Apraclonidine is a US Food and Drug Administration–approved medication, routinely used in glaucoma treatment, and is a readily available alternative to cocaine in the diagnosis of Horner syndrome.<sup>2</sup>

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