

A watery eye and an enlarged trigeminal nerve

Ojo acuoso y ensanchamiento del nervio trigémino

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A 45-year-old man was evaluated one week after the acute onset of pain and numbness in the right side of the face. On examination, he had a right watery eye, which has been present for several weeks (Figure 1). The patient denied history of eye trauma or previous episodes of inflammatory or infected conditions affecting the lacrimal drainage complex. Neurological examination showed decrease of all sensations in the distribution of the three branches of the right trigeminal nerve. Function of the other cranial nerves was intact and there were no motor or sensory deficits in the limbs. Routine metabolic workup as well as CSF examination were within normal limits.

Watery eyes are the result of an imbalance between tear out-flow and production. This condition most commonly affects both eyes, being the dry eye syndrome its most frequent cause since dry eyes may enhance the production of tears. Sjögren's syndrome is an autoimmune disorder often associated with dryness of the eyes and mouth (keratocon-

junctivitis sicca and xerostomia) as well as with trigeminal or other cranial neuropathies, peripheral neuropathy and other mixed neurological deficits.¹

In our patient, unilaterality of watery eye and sensorial deficits confined to the ipsilateral side of the face, pointed the trigeminal nerve as the origin of the problem. While the facial nerve innervates the lacrimal glands, the sensory input of these glands is conducted through the trigeminal nerve, triggering the production of natural tears.

Findings of the neurological examination prompted the practice of a brain MRI, which showed marked enlargement and abnormal enhancement of the right trigeminal nerve including the Gasserian ganglion (Figure 2). While Sjögren's syndrome-related trigeminal neuropathy may be unilateral in about 60% of cases,² damage of the trigeminal nerve is often expressed on MRI as atrophy of the nerve and not as enlargement.³ Likewise, the patient did not meet internationally accepted criteria for Sjögren's syndrome diagnosis.⁴



Figure 1. Right eye of the patient showing excessive tears production in the right eye.



Figure 2. Contrast enhanced T1-weighted MRI showing diffuse enlargement of the right trigeminal nerve that included the Gasserian ganglion.

In this particular case, MRI findings were against the diagnosis of tumors of the trigeminal nerve that can cause abnormal and focal enlargement of the nerve,⁵ and favor the occurrence of idiopathic trigeminal neuropathy as the most likely cause of this syndrome.

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