A Pilot With Electrical Pain in the Face

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An intracranial epidermoid cyst is an unusual but treatable cause of trigeminal neuralgia.

A 25-year-old male student pilot presented to his flight surgeon in Corpus Christi, Texas, with a 1-year history of episodic left-sided facial pain. He described the pain as electric-like with subsequent tingling sensation. These symptoms were always located on the left side of his tongue and lower lip. They were provoked by chewing, touching, or brushing his teeth. The most recent episode had lasted for 3 days before resolving. He noted 2 similar episodes a few months earlier that he related to periods of high stress.

On physical examination, the student pilot was well appearing with unremarkable vital signs. There were no skin lesions of the head or neck region. His tongue was midline without cutaneous lesions or atrophy. There was no facial numbness or weakness of the mastication muscles. There were no oropharyngeal mucosal or anatomic abnormalities. He had no lymphadenopathy. The remainder of the physical examination was unremarkable. He was seen by both dental medicine and oral surgery providers who did not identify an underlying cause for his symptoms.

When symptoms recurred a fourth time, the student was referred for a magnetic resonance imaging (MRI) of the brain with and without contrast. The MRI demonstrated a left-sided extra-axial mass, involving the cerebellopontine angle (CPA), with imaging features most consistent with an epidermoid cyst (Figures 1, 2, and 3). An audiogram performed at the time of diagnosis revealed no sensorineural hearing loss.

DISCUSSION

Epidermoid cysts are extra-axial tumors that are benign and slow growing. They constitute about 1% of all intracranial tumors. They most commonly occur at the CPA but can also arise in the fourth ventricle and suprasellar regions. Epidermoid cysts constitute about 5 to 7% of all CPA tumors. The 2 most common presenting symptoms of these tumors are headache and cranial nerve dysfunction. Other presenting symptoms may include ataxia, hemiparesis, and tinnitus.

On computed tomography (CT), epidermoid cysts can be identical in density to cerebrospinal fluid, making early detection difficult. On MRI, the lesion is easily seen on diffusion-weighted imaging, due to hyperintensity and restricted diffusion. The cysts rarely enhance, unlike the more common tumors in this region, vestibular schwannomas and meningiomas.

Total neurosurgical resection of the epidermoid cyst is the optimal treatment and is possible in most cases. Management of these cysts may prove difficult because of their close proximity to the cranial nerves and brain stem. A near-total excision may be necessary for those tumors that have strong adhesions to neurovascular structures. Literature reports that recurrence after surgery is rare in cases of subtotal removal. Reported postoperative complications may include aseptic meningitis and cranial nerve dysfunction.

Management

The patient was informed of the presumed diagnosis of brain epidermoid cyst and sent for neurosurgery evaluation. Surgery was indicated and via a retrosigmoid craniotomy, the tumor was removed in total with no complications. On 3-month postoperative follow-up, MRI showed no evidence of residual epidermoid (Figure 4). On physical examination at the follow-up, he was alert and oriented. His surgical incision was well healed. He was neurologically intact with a normal gait. He was released without restrictions from neurosurgical care.

The patient wished to continue flying after successful resection of his cyst. The
neurosurgical procedure for removal of the epidermoid cyst medically disqualified him for military aviation. As the patient had no neurologic deficits, a waiver was submitted on his behalf to the Naval Aerospace Medical Institute. The waiver was granted for flying duties, and the patient returned to training. He has had no return of symptoms to date.

CONCLUSIONS
An intracranial epidermoid cyst is an unusual but treatable cause of trigeminal neuralgia. Gross total removal, without cranial nerve or cerebellar deficits, resulted in the patient's complete return to health and training as a pilot.

Author disclosures
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