Hemifacial spasm

Diagnosis
Hemifacial spasm (HFS) is a neurological disorder manifested by twitching on one side of the face due to involuntary contractions of the eyelid and other facial muscles. It usually begins gradually around one eye and may eventually spread the muscles around the mouth and neck on the same side. These muscle spasms are very brief but occur rapidly and repetitively. They are generally not painful, but may impact vision because of involuntary eye closure. In contrast to blepharospasm, a form of focal dystonia, HFS involves only one side of the face. Very rarely, both sides of the face may become affected in HFS, but the contractions remain asymmetric and independent of each other. The facial spasms are often noticed by others and can be a source of embarrassment to the patient. HFS can sometimes be triggered by voluntary contraction of certain facial muscles, especially puckering the lips or after forcefully closing eyes. Stressful situations or fatigue may also worsen the spasms. Estimates suggest that one in ten thousand people have HFS and it usually presents in the 5th or 6th decade. It may be somewhat more common in women than in men and it is more frequently seen in the Asian population. An experienced neurologist can usually diagnose HFS by simply observing it and an electrical nerve study known as an EMG is rarely needed. If atypical features such as facial numbness or hearing loss are present, then a neuroimaging study, such as an MRI or MRA, may be useful.

Cause
Most of the cases of HFS do not have an obvious cause. They are called idiopathic. However, it is often attributable to a compression of the facial nerve as it exits from the brainstem. This nerve supplies muscle power to the facial and
superficial neck muscles. In most cases, the compression is from a hardened and/or displaced blood vessel near the base of the brain. The compression then causes an irritation in the nerve, which fires independently. When the nerve fires, the signal is misdirected to other parts of the nerve causing muscle contractions in different areas of the face on the same side. A competing hypothesis states that HFS is due to abnormality of the facial motor nucleus in the brainstem. Injuries to the facial nerve can also result in secondary HFS. After the damage, the facial nerve later grows back, which can occur imperfectly and resulting in spontaneous firing and subsequent involuntary contractions of the facial muscles. Patients who had Bell’s palsy can develop HFS. Bell’s palsy occurs due to a viral inflammation of the facial nerve, which results in weakness in one side of the face. Recovery of the weakness is very common, but the patients can develop HFS months or even years after. Other uncommon causes include aneurysms, brain tumors, trauma and demyelinating diseases such as multiple sclerosis.

**Treatment**
Currently, most physicians consider botulinum toxin injections to be the optimal treatment. This protein is injected directly into the affected muscles. At relatively low doses, it relaxes the affected muscles enough to prevent the spasms without causing paralysis. The improvement occurs within 3-4 days and lasts an average of 4-6 months. Repeat injections are then required at varying intervals depending on each individual's response. In the hands of a well-trained practitioner, the procedure is very safe. Potential side effects include an eyelid droop, facial weakness or increased tearing, all of which resolves over time. Medications used for seizures such as carbamazepine, phenytoin and clonazepam, and muscle relaxing medications such as diazepam, baclofen and trihexyphenidyl, are only rarely helpful. Also, their use is often associated with adverse side effects. In refractory cases in which there is evidence of compression of the nerve by an abnormal brain vessel, a neurosurgical procedure known as microvascular decompression should be considered. While it has a favorable long-term outcome, it is an involved procedure requiring general anesthesia in order to remove of a
portion of the skull, expose the brainstem and dissect the offending blood vessel away from the facial nerve. The most common complication is weakness of the facial muscles, which can be noted immediately after the procedure or several days after. Other potential complications include hearing loss, infection, hemorrhage and stroke.

**Selected References**


Support Organizations
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Comment [A11]: This was the supportive group that was in the prior file. I did not find a supportive group specific HFS.