

# Chapter 11

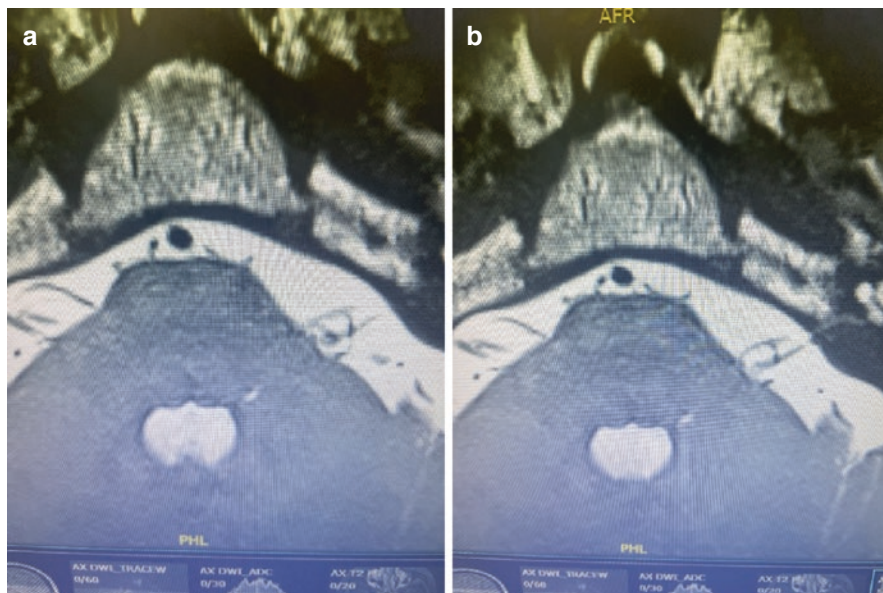
## Movement Disorders



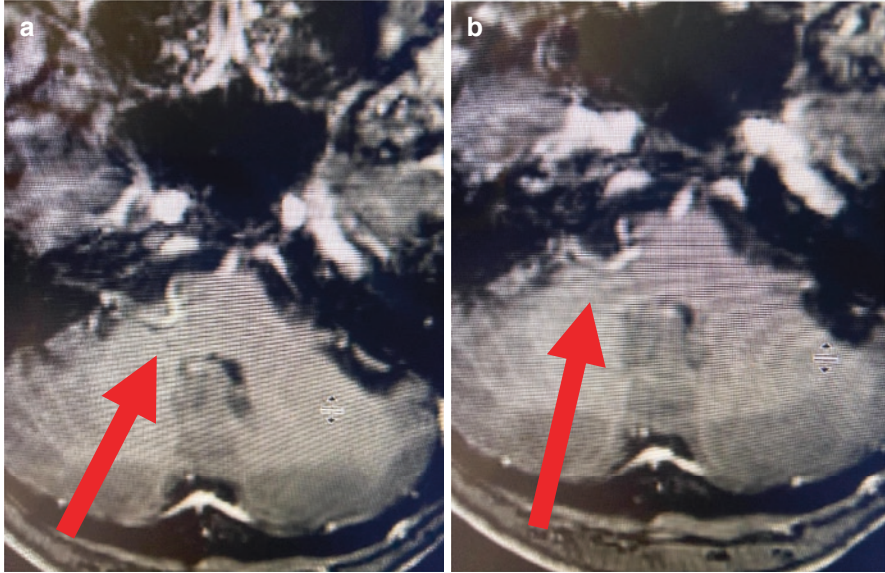
Most people with movement disorders will not benefit from brain surgery. Newer medicines have minimized the need for surgery for such disorders. However, there are a few categories of adult patients with movement disorders who may benefit from brain surgery.

### Hemifacial Spasm

Patients with this disorder may have varying degrees of facial spasms and disability. Often the symptoms are mild. In many cases, patients can be managed with various medicines (such as carbamazepine or gabapentin) or with Botox injections (see Fig. 11.1). For those patients with extremely bothersome symptoms who are not satisfied with other treatments, microvascular decompression (MVD) can be curative [78, 79]. The usual cause of the compression is an artery against the facial nerve just as it exits the brainstem (see Fig. 11.2). The major risk of MVD, particularly with hemifacial spasm, is injury to the eighth nerve, with resultant ipsilateral hearing loss or vestibular dysfunction. Also, of late, there has been some thought to avoiding the use of the traditional Teflon felt to avoid the frequent chemical meningitis that the felt often induces. Sometimes, the benefits of the MVD in these cases can take several months to appreciate.



**Fig. 11.1** This is a 44-year-old man who had progressive development of severe left-sided hemi-facial spasm that involved the entire left side of his face. MRI was ordered which was consistent with an arterial loop compressing and distorting the left facial nerve (a, b: Fiesta sequence MRI showing left facial nerve compression by an arterial loop). The patient was started on carbamazepine 100 mg TID. His facial twitching dramatically improved. He was very happy and opted to continue on the medicines with no other treatments



**Fig. 11.2** This is a 62-year-old woman with right-sided hemifacial spasm that was severe, bothersome, and refractory to conservative measures. Her MRI shows an artery compressing the facial nerve by the root entry zone (**a, b**: postcontrast T1 axial MRI images). The patient underwent an MVD at which time the offending artery was moved away from the facial nerve root with Teflon felt. After several months, her hemifacial spasm completely went away

## Tremor

Again, medicines and conservative therapies are almost always the treatment of choice for this condition. However, for severe refractory cases of essential tremor or tremor dominant Parkinson's disease, procedures can be considered and can help, including Gamma Knife thalamotomy [80], MR guided focused ultrasound (MRgFUS) [81, 82], and Deep Brain Stimulation (DBS) [83], though these procedures all carry some rate of serious complication.

## Other Movement Disorders

There are other movement disorders, including Parkinson's and dystonias, that are almost always managed with medicines and conservative therapies. Again, though, if symptoms are severe and refractory to other treatments, deep brain stimulation with various targets, including the subthalamic nucleus (STN) [84] and the internal globus pallidus (GPi) [85], can be considered.