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CASE REPORT

Hemifacial spasm in a patient with basilar artery dolichoectasia caused by uncontrolled hypertension

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A 47-year-old male presented with a 2-year history of hemifacial spasm. Magnetic resonance imaging performed showed his tortuous basilar artery with nerve compression, and the patient was treated conservatively with botulinum toxin injections with complete resolution of symptoms. This rare disease was caused by his long history of hypertension, which led to his major basilar artery dolichoectasia.

Keywords: *hemifacial spasm*; *blepharospasm*; *basilar artery dolichoectasia*; *hypertension*; *botulinum toxin*

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We present a case of a 47-year-old male with a 2-year history of worsening hemifacial spasm (HFS). He had no past ocular history. His medical history was significant for hypertension and no other medical conditions. His hypertension was severely uncontrolled, and he had multiple hospitalizations for hypertensive emergency due to medication non-compliance. The patient presented with tonic contractions and spasms of his left face and orbicularis, and was diagnosed with HFS. A magnetic resonance imaging of the brain with gadolinium showed no evidence of acute cerebrovascular accident, hemorrhage, or mass and revealed basilar artery dolichoectasia with associated mass effect and deformity of the left pontomedullary junction. The tortuous dilated basilar artery also approximated the left cranial nerves VII and VIII (Fig. 1). The patient became more compliant with blood pressure medication, and he decided not to undergo microvascular decompression and opted for conservative measures first. He was treated with botulinum toxin (BTX) periorbital injections in seven sites. On follow-up, the patient endorsed significant improvement in his symptoms, but with some mild

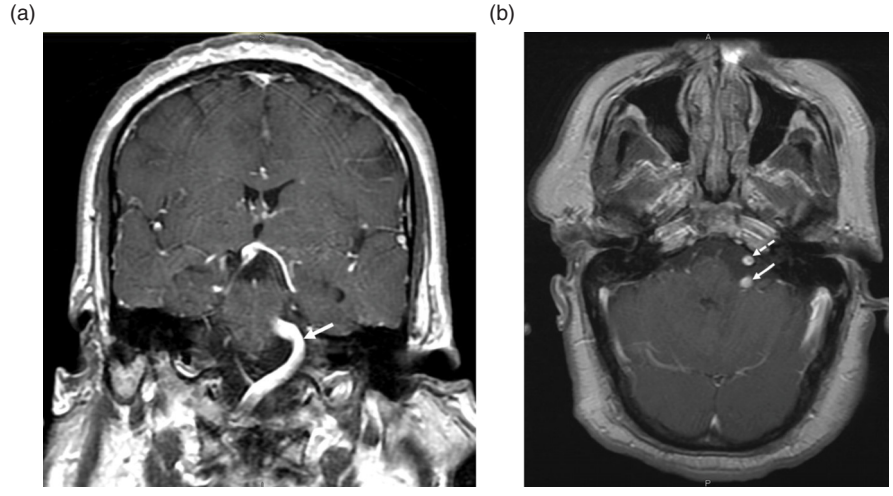

Fig. 1. (a) Coronal magnetic resonance imaging showing the dolichoectatic basilar artery. (b) Sagittal magnetic resonance imaging showing the right vertebral artery (dashed arrow) and the left vertebral artery (solid arrow), both on the left side of the patient's brain.

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residual spasm. He was treated again with 13 periorbital injections. On his second follow-up 2 months later, the patient had complete resolution of his HFS symptoms.

Discussion

HFS is a disease characterized by repetitive, unilateral, tonic, and/or clonic movements of any muscle innervated by the facial nerve. Classically, it begins with involuntary closing of the eye and may progress to include upward turning of the mouth as well. The treatment of HFS varies, due to the lack of a unifying etiology for all cases. Pharmacologic approaches have included dopamine antagonists, anticholinergic agents, and benzodiazepines. There are no large randomized controlled trials to support their use, and these medications have limited reports of success (1). As such, their use is mainly as an adjunct to other treatment modalities. Currently, BTX injections are the most commonly employed treatment. Injections are generally safe and effective although recurrence of symptoms is quite common. Most patients require repeated injections every few months indefinitely.

Recent evidence suggests that most cases of HFS can be explained by nerve compression due to vertebrobasilar dolichoectasia (VBD). In one series, all 22 patients with isolated HFS had VBD demonstrated by computed tomography (2). The most common vessel to induce HFS was the posterior inferior cerebellar artery (41%), the anterior inferior artery (37%), and the vertebrobasilar complex (19%), which was affected in our patient (3). HFS with nerve entrapment can be treated very successfully with microvascular decompression surgery, albeit with much more risk than BTX injections. Therefore, while many clinicians evaluate for microvascular decompression, patients and clinicians often prefer to treat with safer, less-invasive treatments first. Additionally, studies have shown that symptom resolution is not hindered by opting for delayed microsurgery (4).

In the case of our patient, a long-standing history of hypertension preceded development of HFS. Hypertension and male sex, both present in this patient, are both risk factors for developing VBD (2). With the large degree of dolichoectasia, microsurgery would be an appropriate treatment option for him, but the patient preferred more conservative therapy with BTX injections. This relatively less-invasive therapy ultimately led to resolution of his symptoms, and future neurovascular surgery remains an option (4).

This case report of HFS demonstrates the link between hypertension and subsequent neurovascular compression, one of the major etiologies of this rare condition. Furthermore, the case shows that conservative therapy with BTX injections can provide satisfactory results for the patient and can be a first-line option before surgery.

Conflict of interest and funding

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