

Microvascular Decompression for a Patient with a Glossopharyngeal Neuralgia: A Technical Note

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Abstract

The glossopharyngeal neuralgia (GPN) constitutes approximately 0.2-1.3% of all facial pain syndromes. The GPN is a syndrome of neuropathic pain characterized by paroxysmal pain episodes localized in the posterior tongue, tonsil, throat, or external ear canal. The first-line treatment is pharmacological. Patients who are refractory to medical therapy can be treated surgically with microvascular decompression (MVD) or sectioning the IX nerve and the upper rootlets of the X nerve. We aim to describe the technical nuances of MVD of the IX cranial nerve with a targeted inferior mini-craniotomy in a patient with a neurovascular compression.

Categories: Pain Management, Neurosurgery

Keywords: neuralgia, microvascular decompression, glossopharyngeal nerve diseases, glossopharyngeal nerve, cranial nerve injuries, neurosurgery

Introduction

Glossopharyngeal neuralgia (GPN) (a.k.a. vagoglossopharyngeal neuralgia) is a rare condition, with an estimated incidence of 0.8 cases per 100,000 persons per year [1], with predilection among females, principally within the fifth decade of life [2], and corresponds to 0.2-1.3% of all facial pain syndromes [3]. GPN is a syndrome of neuropathic pain characterized by paroxysmal pain episodes localized in the posterior tongue, tonsil, throat, and/or the external ear canal. Vagal involvement can produce bradycardia, syncope or asystole. Common triggers include eating, swallowing and speaking [4]. GPN occurs more frequently on the left side and involvement is bilateral (not simultaneously) in only 2% of the cases [5]. The diagnosis of GPN is primarily clinical, and complimentary imaging can be performed, including computed tomography (CT) or magnetic resonance imaging (MRI) scans, which can reveal adjacent tumors, neurovascular conflicts, arteriovenous malformations (AVMs), demyelinating lesions, or an elongated styloid process involving the IX and X cranial nerves (CN). The first-line treatment is pharmacological, and can be initiated with anticonvulsant medication including carbamazepine, gabapentin, oxcarbazepine, or pregabalin. If the pain is refractory, the treatment can be surgical, including rhizotomy of CNs IX and X, or with microvascular decompression (MVD) if neurovascular conflicts are detected. We aim to describe the surgical technique of MVD with a targeted lateral inferior suboccipital mini-craniectomy in a patient with a GPN. We also attempt to review the technical nuances of this treatment option.

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Case Presentation

A 57-year-old male presented to the emergency department with an 11-year right pharyngeal pain that increased in severity. It was a burning pain, with a score on the pain visual analogue scale 10 out of 10, irradiated to the right base of the tongue and to the distal pharynx, approximately with 30 seconds in duration per crisis, which was exacerbated by physical activity, swallowing, and with the elevation of the voice volume. Prior failed medication with pregabalin 600 mg/day, carbamazepine 600 mg/day and topic lidocaine was recorded. The patient developed a new crisis the day before the consult and had no other symptoms associated to the crisis. No relevant clinical antecedents were found. On examination, the following vital signs were recorded: (1) blood pressure of 116/76 mm Hg, (2) pulse of 80 beats per minute, (3) respiratory rate of 16 breaths per minute, and (4) oxygen saturation of 97%. The neurological examination demonstrated a right pharyngeal hyperalgesia, but no other positive findings were noted. No any active infectious process was detected as well. The rest of the physical exam was unremarkable.

A right symptomatic GPN refractory to medical treatment was considered and an urgent enhanced MRI of the brain was performed. A neurovascular conflict between the right glossopharyngeal (IX) CN and the posterior inferior cerebellar artery (PICA) was observed on the glossopharyngeal meatus of the right jugular foramen, showing a IX CN compression in the axial and coronal slices of the 3D T2 high-resolution MRI (FIESTA) (Figure 1). The surgical decision-making group selected a right MVD as the best approach for this case (Figures 2-3).

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