Microvascular Decompression for Glossopharyngeal Neuralgia: Long-Term Follow-Up

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- OBJECTIVE: **To examine operative findings and outcome of microvascular decompression (MVD) for glossopharyngeal neuralgia (GPN). This research displayed the long-term outcomes of a large series of 35 cases with GPN treated with MVD.**
- METHODS: **From January 2004 to June 2006, 35 consecutive patients were diagnosed with GPN. All of them underwent MVD. Demographic data, clinical presentation, operative findings, clinical results, operative complications were reviewed.**
- RESULTS: **A total of 33 patients (94.3%) experienced complete pain relief immediately after MVD. Long-term follow-up was available for 30 of these 35 patients, and 28 of these 30 patients continued to be pain-free. There was no long-term operative morbidity in all cases. One patient had a cerebrospinal fluid leak and 1 case presented with delayed facial palsy.**
- CONCLUSIONS: **Classic GPN is usually caused by pulsatile neurovascular compression of the glossopharyngeal and vagus rootlets. MVD is a safe, effective, and durable operation for GPN.**

INTRODUCTION

Glossopharyngeal neuralgia (GPN) is an uncommon pain condition analogous to trigeminal neuralgia in regard to both clinical manifestations and therapeutic alternatives. It accounts for 0.2%–1.3% of facial pain syndromes.[1-3] Its annual incidence rate is 0.2–0.8/100,000 habitants per year.[4] It is characterized by paroxysmal, transient, severe, sharp pain in the back of the throat, base of the tongue, tonsillar fossa, and internal ear canal. Sometimes, these painful attacks can also be linked with cardiovascular manifestations, which can result in life-threatening syncopal episodes. First-line therapy for GPN are anticonvulsants such as carbamazepine, gabapentin, and lamotrigine. Several surgical approaches to medically intractable GPN have been attempted, but most of them rely on the destruction of the glossopharyngeal and vagus nerve fibers.[5] The idiopathic type of GPN is, usually, caused by a compression of the posterior inferior cerebellar artery (PICA) on the glossopharyngeal nerve as it exits or enters the brainstem. Jannetta[6] pioneered microvascular decompression (MVD) surgery for the treatment of GPN. MVD series have reported excellent outcomes in 90%–98% if patients. Long-term effects of MVD has been reported in 64%, with a low mortality ranging from 0–5.8%.[7] Nonetheless, controversies still exist when it comes to the role of MVD in cases of GPN and there are only a few reports in the literature on the long-term outcomes of MVD for GPN.[7] We present our experience with MVD for GPN of >10 years ago. The results of this research demonstrates that MVD is an effective and safe treatment modality for GPN.

PATIENTS AND METHODS

Patient Population

A total of 35 patients with typical medically intractable GPN were treated with MVD between January 2004 and June 2006 in 1 medical group, at the Department of Neurosurgery, Xinhua Hospital, Shanghai Jiao Tong University School of Medicine. Patients were diagnosed with typical idiopathic GPN if their symptoms were in accordance with the classic description by Dandy[8] and if they met the guidelines of the International Headache Society.[9] Patient data including symptoms, clinical history, operative findings,

Key words
- Glossopharyngeal neuralgia
- Microvascular decompression
- Vagoglossopharygeal neuralgia

Abbreviations and Acronyms
GPN: Glossopharyngeal neuralgia
MVD: Microvascular decompression
PICA: Posterior inferior cerebellar artery
REZ: Root entry zone

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Table 1. Clinical Data and Outcome of Patients with Glossopharyngeal Neuralgia

					Pain		
Patient Number	**Age**	**Sex (F/M)**	**Side (L/R)**	**Duration of Symptoms (years)**	**Location**	**Culprit Vessel**	**Outcome***
1	48	F	L	4	Pharyngeal	PICA	Excellent
2	52	F	L	6	Pharyngeal	VA	Excellent
3	60	M	R	3	Pharyngeal	PICA	Excellent
4	56	F	L	7	Pharyngeal	PICA	Excellent
5	42	F	L	9	Pharyngeal	VA	Loss
6	52	M	R	2	EEC	PICA	Excellent
7	64	F	R	5	Pharyngeal	PICA	Excellent
8	58	F	L	6	Pharyngeal	PICA	Excellent
9†	72	F	L	10	Pharyngeal	PICA	Died
10	56	M	L	8	Pharyngeal	PICA	Excellent
11	61	M	L	11	Pharyngeal	PICA	Excellent
12	39	F	R	7	Pharyngeal	PICA	Excellent
13	68	F	R	9	Pharyngeal	PICA	Good
14	49	M	R	3	EEC	Vein	Excellent
15	55	F	L	1	Pharyngeal	PICA	Excellent
16	53	F	L	5	Pharyngeal	PICA	Excellent
17	60	F	L	8	Pharyngeal	PICA	Died
18	69	M	R	6	Pharyngeal	VA	Excellent
19	58	M	R	4	Pharyngeal	PICA	Excellent
20	53	M	L	9	EEC	PICA	Excellent
21	49	F	R	10	Pharyngeal	PICA	Excellent
22†	57	M	L	2	Pharyngeal	CH	Good
23	64	F	R	6	Pharyngeal	PICA	Excellent
24	66	M	R	8	EEC	PICA	Excellent
25	74	F	L	5	Pharyngeal	PICA	Excellent
26	64	F	L	9	Pharyngeal	PICA	Loss
27	58	M	R	4	Pharyngeal	PICA	Excellent
28	49	M	R	6	Pharyngeal	PICA	Excellent
29	53	F	L	8	EEC	VA	Loss
30	48	F	L	7	Pharyngeal	PICA	Excellent
31	62	M	R	9	Pharyngeal	PICA	Excellent
32	44	F	R	5	Pharyngeal	PICA	Excellent
33	58	M	L	3	Pharyngeal	VA	Excellent
34	60	F	L	8	Pharyngeal	PICA	Excellent
35	56	M	R	7	Pharyngeal	PICA	Excellent

GPN, glossopharyngeal neuralgia; VA, vertebral artery; PICA, posterior inferior cerebellar artery; EEC, external ear canal; CH, choroid plexus.
*Long-term outcome.
†Presented with cardiac syncope.