

Introduction

Glossopharyngeal neuralgia (GN) is a rare pain condition in which patients experience paroxysmal, lancinating throat pain. There are multiple surgical approaches to this disorder including microvascular decompression (MVD), sectioning of cranial nerves IX and the upper rootlets of X, or a combination of the two. The aim of this study was to examine the long term quality of life and pain free survival after both MVD and sectioning of the X/IX complex.

Methods

A combined retrospective chart review and a quality of life telephone survey were performed to collect demographic information and long-term outcomes. Quality of life was assessed by a modified Barrow Neurological Institute (BNI) Pain Intensity Score and a Brief Pain Inventory (BPI) - Facial scale questionnaires. Kaplan-Meier analysis was done for pain free survival.

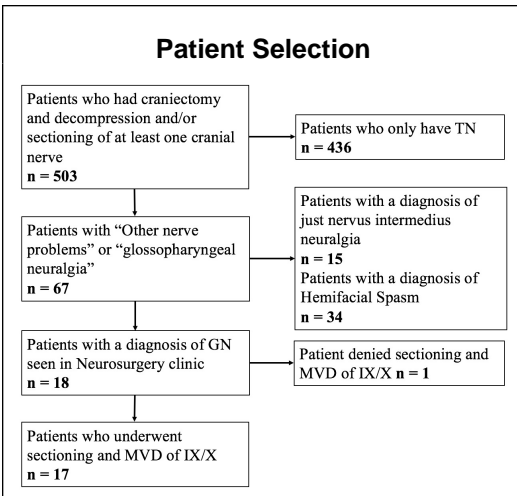


Figure 1: All patients who received surgery for a cranial nerve condition were examined and those without GN excluded.

Results

Demographics:

- 18 patients with GN were included. 5 patients also had Trigeminal Neuralgia (TN) and 4 patients had Nervus Intermedius Neuralgia (NIN).
- 17 patients had an MVD and/or sectioning of the IX/X complex.
- 11 patients had NVC of IX/X by the Posterior Inferior Cerebellar Artery (PICA), 2 by a vertebral artery and 5 had no NVC.

Surgeries Performed		
Patient	Procedure	Intraop Findings
GN 1	MVD and sectioning of IX/X	PICA
GN 2	Sectioning of IX/X	None
GN 3	MVD and sectioning of IX/X, NI sectioning	PICA
GN 4	MVD and sectioning of IX/X	Vertebral
GN 5	MVD and sectioning of IX/X	PICA
GN 6	MVD and sectioning of IX/X	PICA
GN 7	MVD and sectioning of IX/X, MVD of V	CN IX/X: PICA CN V: SCA
GN 8	Sectioning of IX/X	None
GN 9	MVD and sectioning of IX/X	PICA
GN 10	MVD and sectioning of IX/X	PICA
GN 11	MVD and sectioning of IX/X	PICA
GN 12	Sectioning of IX/X	None: scar tissue around IX/X/XI
GN 13	MVD and sectioning of IX/X, MVD of V	CN IX/X: Vertebral and PICA CN V: petrosal vein
GN 14	MVD and sectioning of IX/X, MVD of V, NI exploration	PICA
GN 15	MVD and sectioning of IX/X	Vertebral and PICA
GN 16	MVD of V	CN V: SCA
GN 17	Sectioning of IX/X	None
GN 18	Sectioning of IX/X, MVD V, section NI	None - thick scar around IX/X/XI

Table 1: Procedures performed for all patients and presence of NVC

Side Effects

- 13 patients (77%) experienced immediate side effects: the most common being dysphagia, hoarseness, ipsilateral hearing loss, and loss of taste.
- All side effects resolved, except in 3 patients who found them tolerable at longest follow up.

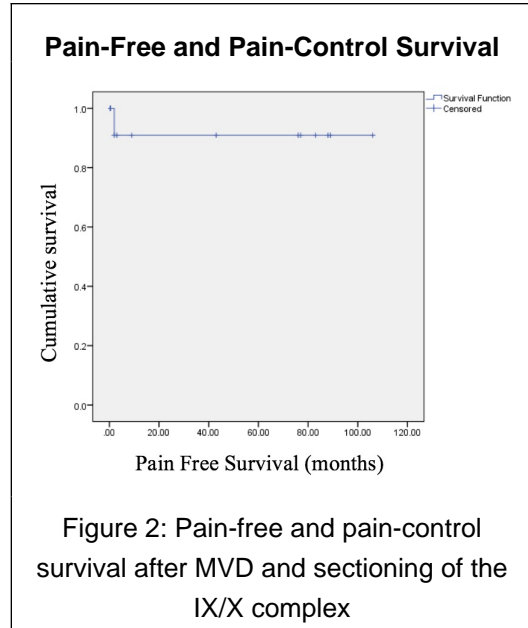


Figure 2: Pain-free and pain-control survival after MVD and sectioning of the IX/X complex

Pain-Free and Pain-Control Survival

- One patient (6%) experienced no immediate pain relief and was not included in the Kaplan-Meier curves. One patient (6%) had their throat pain relapse at 2 months.
- Pain-free survival, the time it takes for any pain to return, was 8 years (96.5; SE 9.01 months).
- Pain-control survival, the time until pain is the same or worse than before surgery, was 10.4 years (125.4; SE 12.9 months).

Survey Reponse

- Survey response rate was 50% (9 patients), mean follow up was 9.33 years (ranging from 5.16 to 13.16 years).
- In the one patient whose pain returned: activities most impacted by GN after surgery were touching the face and brushing teeth (4/10 on BPI-Facial) and their BNI pain score was 4 (infrequent pain not controlled with medication).
- 22.2% (2/9) of respondents needed pain medication at longest follow up.
- 88.8% (8/9) respondents said they would have the surgery over again.

Conclusions

MVD and/or sectioning of the vagoglossopharyngeal complex is a safe and effective surgical therapy for glossopharyngeal neuralgia with an initial pain freedom in 94% of patients and an excellent long-term pain relief of 10 years.

References:

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- Kandan SR, Khan S, Jeyareta DS, Lhatoo S, Patel NK, and Coakham HB. Neuralgia of the glossopharyngeal and vagal nerves: long-term outcome following surgical treatment and literature review. Brit J of Neurosurg. 2010;24(4):441-446.
- Chen J and Sindou M. Vago-glossopharyngeal neuralgia: a literature review of neurosurgical experience. Acta Neurochir. 2015;157:311-321.