

Brief Report of a Special Case Glossopharyngeal Neuralgia Caused by Adhesive Arachnoid

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Summary

Glossopharyngeal neuralgia (GPN) is an uncommon disorder characterized by a severe lancinating pain commonly induced by swallowing. When the pain is resistant to medical management, surgical treatment such as microvascular decompression (MVD) or partial rhizotomy is performed. We report a case of glossopharyngeal neuralgia caused by adhesive arachnoid, in which pain disappeared solely by dissection of the peripheral arachnoid around the glossopharyngeal nerve.

Keywords: Glossopharyngeal neuralgia; adhesive arachnoid; microvascular decompression.

Case Report

A 69-year-old man was admitted to our hospital in April 2001, complained of severe pain radiating from the pharynx to the right retro-auricular region induced by swallowing for three years. He was unable to take carbamazepine because of a severe floating sensation as a side effect. On admission, though he was free of neurological symptoms except for glossopharyngeal neuralgia, it was quite difficult for him to eat enough food due to severe swallowing pain. Magnetic resonance imaging did not detect any space-occupying lesion at the right pontomedullary junction.

Surgery was planned through a retromastoid approach, diagnosing it to be idiopathic glossopharyngeal neuralgia due to vascular compression. At operation, the glossopharyngeal-vagus nerve complex was surrounded by thick adhesive arachnoid in the cerebello-medullary cistern (Fig. 1A). After careful incision of the peripheral arachnoid, it was observed that there was no structure compressing the glossopharyngeal nerve. There was a small vein running between the glossopharyngeal nerve and the pharyngeal branch of the vagus nerve, but it did not seem to compress either nerve (Fig. 1B). Because there was an impression that the glossopharyngeal nerve had already become free from the abnormal tension raised by the thick arachnoid, partial rhizotomy was not performed and the vein was left as it was. Neuralgia soon disappeared postoperatively and the duration

of relief has been 1 year to date. The patient has not complained of either sensory or swallowing disturbance postoperatively. He made an uneventful recovery, and was discharged home.

Discussion

Since 1927, partial rhizotomy of the glossopharyngeal nerve and pharyngeal branch of the vagus nerve had been widely performed for GPN at first [1]. However, as the concept that GPN was caused by vascular compression like trigeminal neuralgia has gradually been accepted, MVD has become a standard surgical treatment. In MVD, the glossopharyngeal-vagus nerve complex was decompressed by transposition of the offending vessels or by prosthesis between the offending vessels and the brain stem [2]. When there are no culprit vessels as in our case, partial rhizotomy may be considered as a second option. However, because of the destruction of the normal neural structure, surgical morbidity such as dysphagia or hoarseness tended to be greater after partial rhizotomy [2, 3]. In addition, it was reported that pain relief could be obtained even in trigeminal neuralgia without culprit vessels, and a “tethering effect” of the surrounding structures was considered as an alternative mechanism. (M. Ishikawa, *Journal of Clinical Neuroscience*, in press) In this case, because simple dissection of the peripheral arachnoid was expected to relieve neuralgia, we thought that the glossopharyngeal nerve itself could be spared.

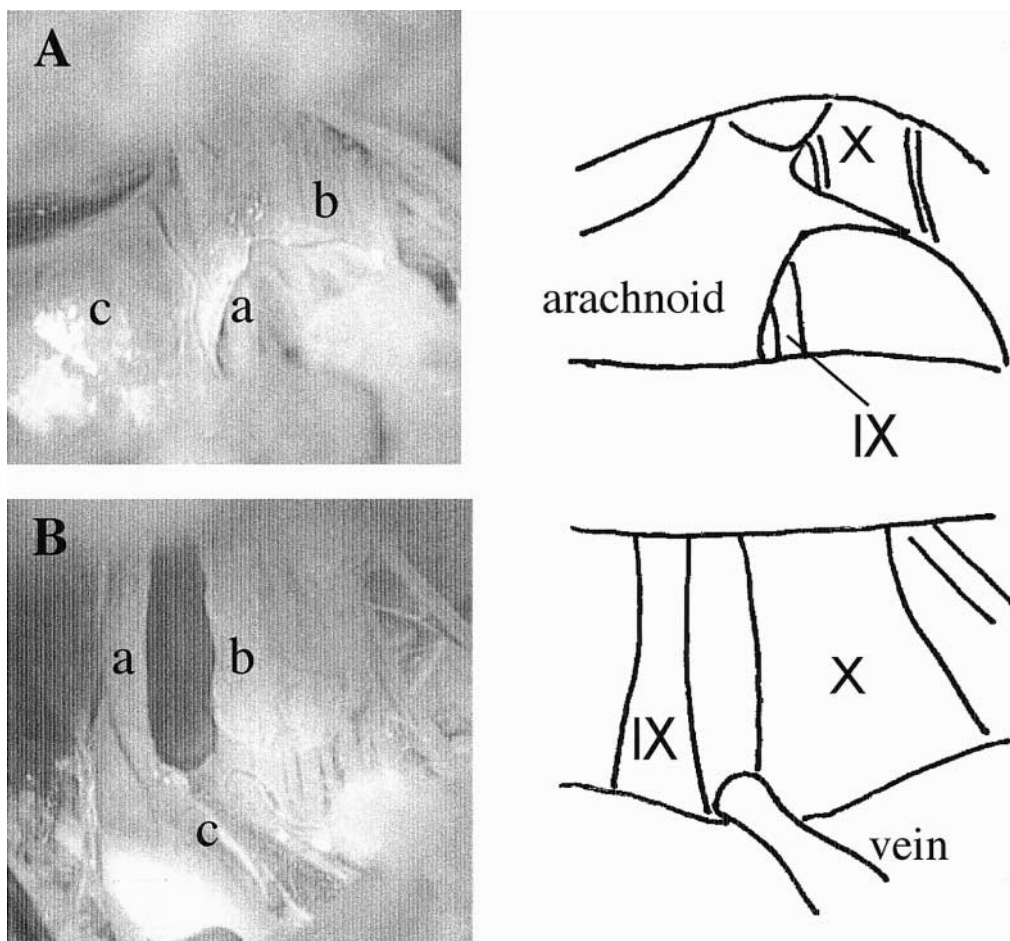


Fig. 1. (A) Left: Intra-operative photograph. Glossopharyngeal-vagus nerve complex was under abnormal tension of peripheral arachnoid. *a* glossopharyngeal nerve, *b* vagus nerve, *c* thick arachnoid. Right: Scheme. (B) Left: Intra-operative photograph. The greater part of the peripheral arachnoid has already been dissected. The vein running among glossopharyngeal nerve and vagus nerve did not compress the root exit zone. *a* Glossopharyngeal nerve, *b* vagus nerve, *c* vein. Right: Scheme

References

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Comment

This short case-report is interesting as it points out a cause of «idiopathic» GPN that can be cured in a conservative way by freeing the adhesive arachnoid membrane compressing the IXth–Xth nerve

complex. Out of a series of 17 patients suffering from glossopharyngeal neuralgias and having undergone a posterior fossa exploration for microsurgical decompression, we have found such a thickened arachnoid as the sole cause of the neuralgia in one case and a thickened membrane associated with an elongated VA and/or PICA in six cases. (Sindou M., Henry J. F., Blanchard P.). Idiopathic neuralgia of the glosso-pharyngeal nerve. Study of a series of 14 cases and review of the literature. *Neurochirurgie*, 1991, 37: 18–25.

A large – if not exhaustive review of the literature can be found in a recent article by Patel *et al.*: «Microvascular decompression in the management of Glosso-pharyngeal Neuralgia: analysis of 217 cases. *Neurosurgery*, 2002, 50: 705–711.

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