

Neurovascular Compression Does not Affect the Efficacy of Percutaneous Radiofrequency Rhizotomy in Trigeminal Neuralgia Patients

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Introduction

It has been suggested that neurovascular compression in root entry or exit zone may play a role in surgical outcome of trigeminal neuralgia, especially in microvascular decompression. In this study, we investigated whether neurovascular compression caused different results in patients receiving percutaneous radiofrequency rhizotomy.

Methods

Thirty-one patients with classical trigeminal neuralgia receiving percutaneous radiofrequency rhizotomy were retrospectively examined. All the patients had brain MRI before the procedure to evaluate the neurovascular compression. The pain intensity was measured on a Numerical rating scale (NRS) before and after operation. The duration of the illness and demographic characteristics were recorded and reviewed. All the patients were followed up at our neurosurgical clinic for at least one year.

Results

Thirty-one patients with trigeminal neuralgia with or without neurovascular compression, 15 and 16 respectively, were included. All the patients had significant improvement in NRS (mean 7.74 \pm 2.816) one year after the procedure. However, there was no difference between the two groups (7.81 \pm 2.664 without compression vs. 7.67 \pm 3.063 with compression, p=0.609).

Conclusions

Neurovascular compression has been the speculated cause to trigeminal neuralgia. However, it is neither necessary nor sufficient for patients with trigeminal neuralgia.

To date, there has not been a definite pre-procedural study that can guide the choice of trigeminal neuralgia. For microvascular decompression, it is important to emphasize the impact of the blood vessel on the nerve which possibly predicts the pain relief after the surgery. Our study demonstrates that percutaneous radiofrequency rhizotomy is equally effective in patients with trigeminal neuralgia either with neurovascular compression or not.

Learning Objectives

1. Acknowledge the importance of neurovascular compression in classic trigeminal neuralgia

2. Familiarize the treatment choice of classic trigeminal neuralgia including microvascular decompression, rhizotomy and radiosurgery

3. Learn that neurovascular compression does not affect the efficacy of percutaneous radiofrequency rhizotomy in treating classic trigeminal neuralgia

[Default Poster]

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