

Pulsed Radiofrequency: A Management Option for Recurrent Trigeminal Neuralgia Following
Radiofrequency Thermocoagulation

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Introduction

As a minimally invasive treatment for trigeminal neuralgia (TN), radiofrequency thermocoagulation (RFT) is viable for elderly and poor surgical risk patients. However, the recurrence rate remains high, and the repeat procedure is frequently performed with increased temperature, resulting in significant risks. Pulsed radiofrequency (PRF) was reported to relieve pain from TN without causing neurological side effects or complications. Although its efficacy remains elusive, patients with TN were reported to benefit from combination treatment involving PRF and short-duration continuous RFT. Therefore, PRF represents a promising treatment modality for TN.

Methods

We report the successful management of recurrent TN following RFT with single PRF in two patients. The RFT treatment was performed in 2-3 cycles for each division with the lesion setting at 75-80° for 90 s. The PRF treatment was applied for 120 s with a generator output of 45 V, not exceeding a temperature of 42° at the tip of the electrode.

Results

In case 1, pain relief was immediately achieved by RFT (75° for 90 s) with moderate hypesthesia. Relapse of the triggered pain occurred 6 months later, and PRF was then applied. Long-term (18 months) pain relief without any additional pharmacological or other treatment was reported. In case 2, a second RFT treatment at a higher temperature (80°) was performed after recurrence following the first RFT within a week. Accompanied by worse hypesthesia, complete pain relief lasted for 6 months until the recurrence of pain triggered by tooth brushing. PRF was then applied, and complete analgesia with long-term follow-up (28 months) was achieved.

Conclusions

The PRF treatment for recurrent TN following RFT in this study could be viewed as a combination of PRF and RFT treatments in succession. Therefore, PRF and RFT should be considered to be complementary rather than alternative in the management of TN.

Learning Objectives

By the conclusion of this session, participants should be able to: 1) Describe the importance of combination treatment of PRF and short-duration continuous RFT, 2) Discuss the potential mechanisms underlying the effect of PRF on refractory trigeminal neuralgia, 3) Identify an effective treatment for refractory trigeminal neuralgia.

[Default Poster]

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