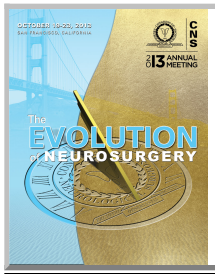

Predictors of Outcomes after Percutaneous Balloon Compression for Trigeminal Neuralgia

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Introduction

Percutaneous balloon compression is effective and safe to treat medically refractory trigeminal neuralgia. The optimal duration of balloon compression remains to be determined. We aimed to assess the optimal duration of balloon compression and to identify risk factors of pain recurrence in patients having undergone percutaneous balloon compression for trigeminal neuralgia.

Methods

Pain recurrence was analyzed in 122 patients treated by percutaneous balloon compression for medically intractable trigeminal neuralgia by a single experienced neurosurgeon, and followed-up between January 2000 to June 2010. Univariate and multivariate analysis using cox-proportional hazards model was performed to search for predictors.

Conclusions

This study suggested that the optimal compression time in percutaneous balloon compression is equal to or longer than 90 seconds.

Results

Median follow-up was 10-years (range, 0.5 to 10). Compression time of less than 90 seconds was a strong predictive factor of pain recurrence (hazard ratio [HR] 4.33; 95% confidence interval [CI], 1.83-10.22). Previous gamma knife stereotactic radiosurgery was associated with an increased risk of trigeminal pain recurrence (HR, 4.64; 95% CI, 1.42-15.11), but association was no longer significant when adjusting for age and compression time (adjusted HR, 3.13; 95% CI, 0.95-10.28). Age, side of the lesion, trigeminal division affected, previous microvascular decompression or peripheral neurectomy, and compression volume (less than 1 ml) were not associated with a modified risk of pain recurrence.

Learning Objectives

By the conclusion of this session, participants should be able to: 1) list the indications of percutaneous balloon compression; 2) seek the differences between percutaneous balloon compression and other percutaneous procedures 3) tell which risk factor can be controlled to improve outcome.

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