

Natural History of Percutaneous Radiofrequency Trigeminal Gangliolysis for the Treatment of Trigeminal Neuralgia

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Introduction

With the advent of microvascular decompression surgery, the use of ablative procedures to treat trigeminal neuralgia (TN) has gradually declined. Here we present a series of patients who underwent percutaneous radiofrequency trigeminal gangliolysis (PRTG) procedure(s), that reflects a more aging and/or resistant patient population than previously described. We emphasize a comparison of initial versus repeat PRTG in terms of achieving complete pain relief and the sustainability of pain relief for TN type 1 (TN1) and symptomatic TN (multiple sclerosis-related TN).

Methods

This study was approved by the Oregon Health & Science University (OHSU) Institutional Review Board and a waiver of informed consent granted. We retrospectively reviewed electronic medical records and pain relief in patients treated by PRTG for TN1 and symptomatic TN (STN) at OHSU between 2002 and 2014. A strict definition of pain relief was employed and defined as pain relief attributed to the procedure alone without the use of medication(s). Groups were compared for efficacy in achieving pain relief and pain free survival data are represented by Kaplan-Meier curves.

Results

Two-hundred and forty-two procedures met the study inclusion criteria and data were available for 200 procedures (114 patients), follow up data was available for 189 procedures. Average age for TN1 and STN patients was 75 years and 59 years, respectively. Overall, the number of patients who underwent a 2nd, 3rd, 4th, 5th and 6th procedure was 49, 21, 12, 3 and 1, respectively. Complete pain relief with discontinuation of medications following a procedure was achieved in 96.5%, 75.5%, and 71.4% for the 1st, 2nd and 3rd procedures, respectively. Median therapy survival was 18 months and 14.7 months for the 1st and 2nd procedures, respectively. Anesthesia dolorosa occurred in 2 patients. Degree of pain relief seems to decline after the first procedure (p < 0.0001). Also, survival of pain relief trends toward decline after an initial procedure (p=0.122). There was no significant difference in procedure efficacy (p = 0.708) or survival (p = 0.997) between TN1 and STN patients. This study has been limited by its retrospective nature and a 40% early censorship rate in the Kaplan meier analysis due to loss to follow up. This may have sytematically excluded patients who did not have recurrence and thus reflected in the relatively short survival of pain relief in the current cohort.

Conclusions

Initial and repeat PRTG is an effective and well-tolerated ablative procedure for the relief of TN1 and STN pain although the efficacy and, possibly, the sustainability of therapy seem to decline with repetition.

References

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Comparison of pain free survival between TN1 and symptomatic TN

Pain relief survival by procedure order



Kaplan-Meier: pain-free off-medication survival for 1st, 2nd and 3rd radiofrequency lesions (RFL or PRTG)