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Abstract

Analysis of the Efficacy of Gamma Knife in Treating Primary Trigeminal Neuralgia

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Objective(s): To explore the efficacy of Infini gamma knife in the treatment of patients with primary trigeminal neuralgia, to study the difference in efficacy of Infini gamma knife treatment of vascular-free and vascular compression of trigeminal neuralgia, and to provide a basis for clinical treatment.

Methods: Retrospective analysis of 92 cases of trigeminal neuralgia admitted to the hospital, without any surgical and RF treatment, from August 2015 to August 2018. With MRI scanning before treatment, patients were divided into 51 cases of vascular compression and 41 cases of unresponsible vascular vessels. Description of treatment with Infini gamma knife: trigeminal nerve root of pontin is selected as the target area, with 8 mm collimator, 1-2 targets are designed, isodose curve 50%, peripheral dose 42-43GY, center dose 84-86GY; The cure rate, efficiency, facial numbness and recurrence rate were analyzed by statistical software.

Results: Post-treatment follow-up time 11-38 months with an average 14 months. Pain relief occurs 1 day - 8 months after treatment (median time 5.6 months), facial numbness occurs 3 months to 16 months after treatment (median time 8.4 months), recurrence occurs in 10-24 months; Pain grading with Alpert: for microvascular group after treatment, 21 patients have a class I pain rating (41.2% cure rate), 21 patients have a class II-III pain rating, 5 patients have a class IV pain rating (Totaling 47 cases having Class I.-IV pain, effective rate of 92.2%.), 4 patients have a class V pain rating. For non-vascular compression group after treatment, 19 patients have a class I pain rating (46.3% cure rate), 15 patients have a class II-III pain rating, 4 patients have a class IV pain rating (Totaling 38 cases having Class I.-IV pain, effective rate of 92.7%.), 3 patients have a class V pain rating.There were 11 cases of facial numbness after treatment in the microvascular compression, with a complication rate of 21.57%. There were 10 cases of facial numbness in the non-vascular compression group, with a complication rate of 24.39%. 6 cases of pain recurrence within 10-24 months of treatment (2 cases in the vascular compression group and 4 cases in the non-vascular compression group). Statistical analysis showed no statistical difference between the two groups of patients in terms of cure rate and efficiency (P>0.05). The same is true in complication incidence and recurrence rate in the two groups of patients (P>0.05).

Conclusion(s): Using Infini gamma knife treatment for trigeminal neuralgia does not show any

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correlation between unresponsible vascular vessels and the cure rate and effective rate of the trigeminal neuralgia, the associated side effects and the recurrence rate. Infini gamma knife can be used as one of the preferred treatments for primary trigeminal neuralgia.