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## **Radiosurgery for trigeminal neuralgia**

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## **Radiosurgery for trigeminal neuralgia**

Alessandra Gorgulho

*Clinical and Research Affairs. Hospital do Coração. São Paulo, Brazil*

### **INTRODUCTION**

Radiosurgery for Trigeminal Neuralgia (TN) was the birth of radiosurgery. The popularization of this technique was only possible upon improvement of imaging techniques, which allowed proper targeting of the trigeminal pathway.

Our experience with the evolution of the treatment protocol, broadening the portion of trigeminal pathway where the isocenter could be placed, dose adjustments and abolishment of the stereotactic treatment is discussed.

### **METHODS**

We will present retrospective review of prospective collected data on over 200 patients. They were treated with a dedicated-LINAC (Novalis™, Brainlab/Feldkirchen) using different protocols, mainly regarding the position on the isocenter in the trigeminal pathway.

We also present the results of 56 patients, 67 SRS (due to 11 retreatments) submitted to frameless (Novalis TX™, Brainlab/Feldkirchen).

Patients self-completed a standardized questionnaire evaluating pain relief and complications immediately prior to consultation. Numbness was graded 1 (mild) to 5 (anesthesia) by subjective report and/or neurological examination.

### **RESULTS**

The cohort with Essential TN treated with frame-based system achieved excellent/good pain control (BNI 1-3) at 1 year in 95.7% of the patients and 79.1% at 3 years. At 3 years, 65.3% of the patients were pain free and medication free. For frameless cohort, 78% (25/32) of the patients with Essential-TN and 57% (8/14) of the patients with Secondary-TN had satisfactory improvement (BNI 1-3), with an overall improvement in 72% of the patients in this series.

### **CONCLUSIONS**

Radiosurgery centers offering Functional radiosurgery need to be aware of extra scrutiny during protocol implementation and treatment execution, noteworthy performing frameless treatments. Results seemed to be optimized with nuances of different radiosurgery protocols, in our experience, even though there is no randomized trial comparing these different protocols.

LINAC-frameless targeting provided reliable pain relief with acceptable secondary effects of the treatment. The results obtained with frameless technique are in line with those presented in the literature.

