Linear Accelerator Based Radiosurgery for Treatment of Trigeminal Neuralgia: 7 Years Period Results in a Single Institution

Jaime Jesus Martinez Anda MD; Sergio Moreno-Jimenez MD; Mauricio Martinez-Moreno

Introduction

Trigeminal Neuralgia is described as one of the most common causes of facial pain, especially in the elderly; microvascular decompression is the treatment of choice when this pathology is severe and become refractory to medical management; some of the population affected have a high risk profile for a neurosurgical procedure or are reluctant to it; stereotactic radiosurgery is a valid option in this cases, being Gamma Knife radiosurgery the most studied.

Methods

We analize a single institution experience with LINAC based radiosurgery using the BrainLab® system. Of 232 treated with the diagnosis of primary trigeminal neuralgia refractory to medical management between January of 2003 and August of 2010, 32 patients where refered to the radiosurgery unit becouse of a contraindication to surgical treatment or becouse of patient desire. The 32 patients underwent LINAC based radiosurgery, with procedure planning using BrainLab® system. The trigeminal root entry zone (Target volume 0.01 – 0.29cm3) was targeted by use of a multileaf collimator to deliver 75 – 85Gy to the 80% isodose.

Results

Median follow up was 28 months; 93% of patients had some relief from trigeminal pain in a mean time of 0.9 months after treatment; 21.8% of patients had complete relief of pain and needed no medication afterwards; 59.3% of patients had significant improvement requiring medication for pain control; 18.7% of patients had no pain relief or recurrence of pain after an initial improvement. 2 patients had a second procedure with no improvement of pain. There was no major complications reported after treatment.

Conclusions

We concluded that LINAC based radiosurgery is a valid option for treatment of patients with trigeminal neuralgia refractory to medical management who were not candidates for neurosurgical treatment.

Learning Objectives

By the conclusion of this session, participants should be able to: 1) describe LINAC based radiosurgery as an option for treatment for trigeminal neuralgia 2) describe patients population who are candidates for this option 3) discuss about the different treatment options for trigeminal neuralgia