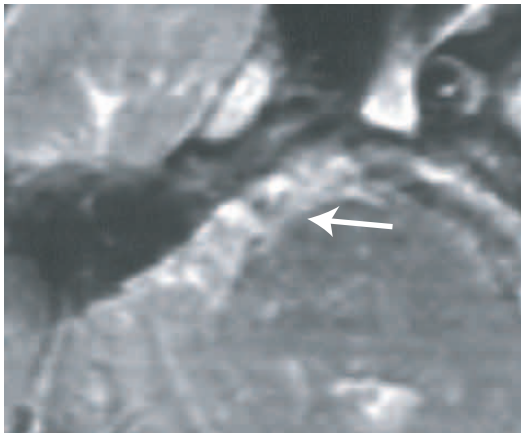


## CASE STUDY

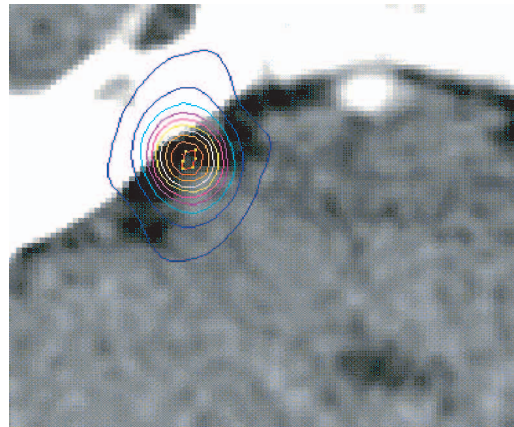
# Trigeminal Neuralgia

## Treatment of right-sided V1 and V2 distribution Trigeminal Neuralgia



Courtesy of M. Davis MD & S. Chenery PhD, Newport Diagnostic Center, Newport Beach, CA USA

BEFORE TREATMENT



TREATMENT PLAN

### Patient History

An 87-year old female presented with a 20-year history of right-sided V1 and V2 trigeminal neuralgia that had in the past been partially controlled on Dilantin. However, in the last 1½ years prior to presentation, she had suffered severe, frequent, daily attacks that were unresponsive to escalating doses of Dilantin. Of note, the patient had developed Tegretol toxicity many years prior, that prompted the change from Tegretol to Dilantin. Various options open to the patient were discussed with her, including microvascular decompression, glycerol injection, radiofrequency rhizotomy, balloon compression, and radiosurgical treatment. An MRI of the brain showed no vascular loops, enhancing soft tissue masses, or other focal lesions in association with the right-sided trigeminal root entry zone.

### CyberKnife Advantage

The patient's age made the CyberKnife a particularly attractive alternative to the other options for the relief of her tic pain.

### Treatment

The patient was treated on the frameless CyberKnife system at Newport Diagnostic Center with a single fraction to a total dose of 80 Gy centered at the root entry zone.

### Outcome & Follow-Up

The patient's trigeminal neuralgia attacks ceased the day after the radiosurgical treatment. She was pain-free for approximately 1½ weeks. At one month, she reported having experienced occasional, very mild forms of right-sided trigeminal neuralgia; however, in comparison with her pre-radiosurgical treatment pain, the tic douloureux pain was negligible. The patient tapered her medication and ceased taking any five months following treatment. In follow-up examinations at 3, 6 and 12 months after treatment, she reported complete resolution of her pain. At 12 months, she reported a mild degree of medial periorbital subjective sense of numbness. Otherwise, she has had no other neurological symptoms.

### CyberKnife Team



Neurosurgeon: Farzad Massoudi, M.D.  
Radiation Oncologist: Marshall Davis, M.D.  
Medical Physicist: Stafford Chenery, Ph.D.