

## **Sphenopalatine Ganglion Block in Traumatic Trigeminal Neuralgia and the Outcome to Radiosurgical Ablation-One Year Results.**

### **Background:**

Continuous neuralgias of the face are characterized by a significant number which follow dental or surgical therapies. A lesion must be present in the trigeminal distribution to cause a continuous neuralgia. Symptoms are often described as a burning numbness, and most cases occur in females in their 4<sup>th</sup> decade. These findings define the trigeminal dysesthesia.

### **Objectives:**

Neuropathic trigeminal pain has responded to sympathetic blockade. Sphenopalatine ganglion block may offer relief for facial sympathetically maintained pain. This forms the basis for radiosurgical ablation of the sphenopalatine ganglion.

### **Methods:**

All patients studied were diagnosed with traumatic trigeminal neuralgia. Fifty four of these patients underwent fluoroscopically-guided sphenopalatine ganglion block using one ml of ¼% bupivacaine and 1 ml dexamethasone (10mg/ml). This was repeated if there was a greater than 60% reduction in pain. Those patients who had two positive responses to sphenopalatine ganglion block were offered Gamma knife ablation, using 90 Gy delivered through two 8 mm superimposed ports.

### **Results:**

Initially, fifty four patients underwent sphenopalatine ganglion blocks. The response rate was 45 out of 54 patients (83.3%) responding to the first block and 36/45 (80%) responding to the second block. The longest duration of relief was 4 months. Average duration of relief was 36 hours.

Pain was localized to V1 in 42.3%, V2 in 42.3%, and V3 in 42.3%. Those patients who responded to two sphenopalatine ganglion blocks were offered Gamma knife ablation. Sixteen patients subsequently underwent Gamma knife ablation and were followed for one year. Twelve out of these sixteen (75%) had more than 60% reduction in pain at one year follow-up. One patient had recurrence of pain after three months and three patients had no improvement in pain.

Complications to sphenopalatine ganglion block included one hematoma which resolved completely. Two cases reflected intravascular uptake based on continuous fluoroscopic injection and digital subtraction angiography. One case showed periorbital uptake of contrast agent. In these cases, the needle position was successfully adjusted without incident. There were no complications noted to Gamma knife.

**Conclusions:**

Patients who respond to two sphenopalatine ganglion blocks have a favorable outcome to radiosurgical ablation at one year follow-up.