

# Idiopathic Bilateral Trigeminal Neuralgia Treated by Bilateral Microvascular Decompression

## Bilateral Mikrovasküler Dekompresyon ile Tedavi Edilen Bilateral Trigeminal Nevralji

### ABSTRACT

Idiopathic trigeminal neuralgia is the most common type of cranial neuralgia. Trigeminal neuralgia is a form of facial pain characterized by proximal lancinating pain confined to the somatosensory distribution of the trigeminal nerve. Bilateral trigeminal neuralgia is a rare situation with an incidence of 1% to 6% in large trigeminal neuralgia series. There is no single or standard method for the treatment of bilateral trigeminal neuralgia. Microvascular decompression for treatment trigeminal neuralgia is an effective and relatively safe method in older patients. We report a rare case of bilateral trigeminal neuralgia treated by bilateral microvascular decompression.

**KEY WORDS:** Trigeminal neuralgia, Bilateral, Microvascular decompression

### ÖZ

İdiopatik trigeminal nevralsi kranial nevralsi sendromlarının en sık görülen tipidir. Trigeminal nevralsi yüzde görülen, trigeminal sinir duyusal alanlarının dağılımına uyan tarzda yayılım gösteren paroksizmal bir ağrıdır. Bilateral trigeminal nevralsi, geniş serili çalışmalarda %1 ile %6 arasında görülen nadir bir durumdur. Bilateral trigeminal nevralsi tedavisinde uygulanmakta olan standart bir tedavi yöntemi bulunmamaktadır. Mikrovasküler dekompresyon yaşlı hastalarda da, trigeminal nevralsi tedavisinde kullanılabilen etkili ve güvenilir bir yöntemdir. Bu vakada, bilateral mikrovasküler dekompresyon ile tedavi edilen bilateral trigeminal nevralsi nadir bir hasta sunulmaktadır.

**ANAHTAR SÖZCÜKLER:** Trigeminal nevralsi, Bilateral, Mikrovasküler dekompresyon

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## INTRODUCTION

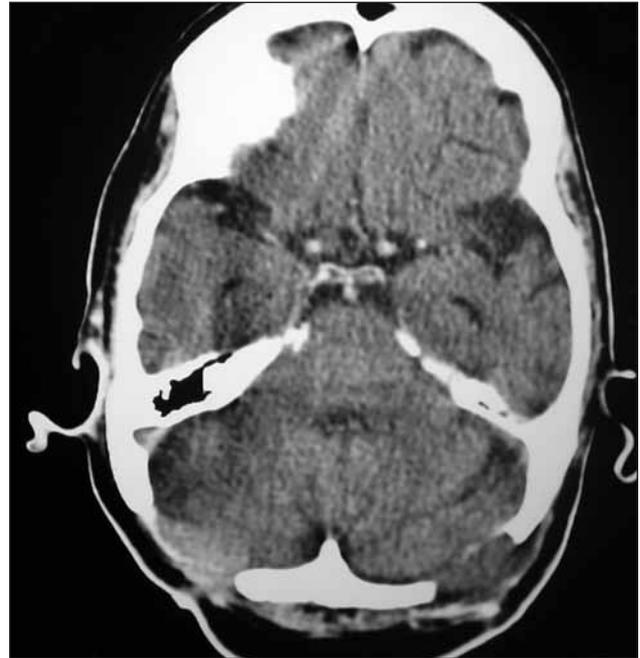
Idiopathic trigeminal neuralgia is the most common type of cranial neuralgia. Trigeminal neuralgia is a form of facial pain characterized by proximal lancinating pain confined to the somatosensory distribution of the trigeminal nerve. The cause of trigeminal neuralgia has not been well described but the most common cause is vascular compression at the pontocerebellar angle. (6) The pain may occur spontaneously and could be triggered by any stimulus. (2, 4)

Bilateral trigeminal neuralgia is a rare situation with an incidence of 1% to 6% in large trigeminal neuralgia series. (3, 5, 7) Multiple sclerosis is an important factor for bilateralism. An association between Paget's disease, Tabes dorsalis and bilateral trigeminal neuralgia has been reported. (7) We present an idiopathic bilateral trigeminal neuralgia case treated by bilateral microvascular decompression.

## CASE REPORT

A 67-year-old female was admitted to our hospital with a history of pain in the right trigeminal sensory part. The patient complained of a pain as paroxysmal electrical sparks. She underwent a course of medical therapy with carbamazepine. The neurological examination was normal except for neuralgia in the right trigeminal sensory part. Cranial magnetic resonance imaging (MRI) excluded any lesion or tumor in the pontocerebellar angle, petrous apex, cavernous sinus and cranial base. The patient underwent microvascular decompression using microsurgical operative techniques. The compressing right superior cerebellar artery was mobilized away from the trigeminal nerve root at the entry zone and maintained in position by applying a Teflon felt.

After recovery there was no pain in the right trigeminal sensory region but the patient complained about the newly begun pain on the left trigeminal sensory side. The patient described that the pain was acting similarly to the right trigeminal side. The patient underwent microvascular decompression to the left side in the second week of the postoperative period. (Figure 1) She was free of pain after the second operation. There was no complication of bilateral microvascular decompression during follow-up.



**Figure 1:** The cranial computed tomography showed bilateral craniectomy associated with bilateral microvascular decompression.

## DISCUSSION

Bilateral trigeminal neuralgia is an infrequent finding among patients with trigeminal neuralgia in most large series. Although the association of bilateral symptoms with multiple sclerosis has been emphasized by several authors, the vast majority of cases are the "idiopathic" variety. In bilateral trigeminal neuralgia, the pain rarely begins concurrently on both sides and is often more severe on one side. After treating the symptomatic side, the other side's pain becomes more disturbing. (7) Our patient also noticed neuralgia of the other side after treating the symptomatic side by microvascular decompression.

There is no single or standard method for the treatment of trigeminal neuralgia. The most important aspect in the selection of a treatment method is its suitability for the patient's features such as age and the distribution of pain. (6) Many techniques have been described for the treatment of trigeminal neuralgia and include medical treatment, retrogasserian rhizotomy, peripheral neurectomy, trigeminal tractotomy, percutaneous radiofrequency thermo-coagulation, gasserian ganglion block with glycerol or alcohol and microvascular decompression. Most of these treatments have also been used for bilateral trigeminal neuralgia. (1)

Percutaneous radiofrequency thermo-coagulation is a minimal invasive and effective method in older patients who have pain in the second or third branches of the trigeminal nerve. (6) However, it is associated with anesthesia dolorosa, sensory loss, bilateral masseter weakness, postoperative dysesthetic complications (up to 19%), pain recurrence (17%), absent of corneal reflex (4%) and keratitis. (6, 8)

Microvascular decompression is a safe and effective treatment for bilateral trigeminal neuralgia as well because microvascular decompression directly addresses the basic etiology of symptoms while avoiding the risk of bilateral trigeminal nerve injury. Sensory loss, masseter weakness, cerebrospinal fluid leakage, pulmonary embolism and death are potential complications of microvascular decompression. Bilateral trigeminal neuralgia patients with multiple sclerosis should be excluded during the preoperative evaluation. (7)

In our clinical experience, microvascular decompression is the preferred treatment for trigeminal neuralgia in older patients. Preferring microvascular decompression means that the patients are protected from the complications of

radiofrequency thermo-coagulation such as bilateral masseter weakness and keratitis. Our surgical outcomes are successful in terms of pain control in all patients. In our opinion, microvascular decompression is a suitable and safe treatment for bilateral trigeminal neuralgia for older patients as well.

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