

# TRIGEMINAL NEURALGIA CAUSED BY A PONTINE ABSCESS: CASE REPORT

## Ahmet Bekar, M.D.

Department of Neurosurgery,  
Uludağ University School of  
Medicine, Görükle Bursa, Turkey

## Hasan Kocaeli, M.D.

Department of Neurosurgery,  
Uludağ University School of  
Medicine, Görükle Bursa, Turkey

## Emel Yilmaz, M.D.

Department of Infectious Disease  
and Microbiology, Uludağ  
University School of Medicine,  
Görükle Bursa, Turkey

## Şeref Doğan, M.D.

Department of Neurosurgery,  
Uludağ University School of  
Medicine, Görükle Bursa, Turkey

### Reprint requests:

Ahmet Bekar, M.D.,  
Department of Neurosurgery,  
Uludağ University School of  
Medicine, Görükle,  
16059 Bursa, Turkey.  
Email: abekar@uludag.edu.tr

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**OBJECTIVE AND IMPORTANCE:** Various intracranial abnormalities, including infectious conditions, may manifest as trigeminal neuralgia.

**CLINICAL PRESENTATION:** A 33-year-old man presented with a 15-day history of right-sided facial pain and numbness. Neurological examination revealed diminished corneal reflex and facial sensation in the right V<sub>1</sub>-V<sub>2</sub> distribution. Magnetic resonance imaging revealed a contrast-enhancing lesion centered at the right pons with extension of the enhancement to the sphenoid sinus.

**INTERVENTION:** Broad-spectrum antibiotics were administered for 6 weeks. This resulted in alleviation of symptoms and resolution of the lesion as revealed by repeat magnetic resonance imaging.

**CONCLUSION:** Presentation of a pons abscess with trigeminal neuralgia is rare, and to the best of our knowledge has not been reported previously. The patient was treated successfully with antibiotics alone.

**KEY WORDS:** Abscess, Pons, Sinusitis, Trigeminal neuralgia

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**T**rigeminal neuralgia (TN) is the most common craniofacial pain syndrome. It is characterized by paroxysms of intense, lancinating pain in the distribution of the V<sub>th</sub> cranial nerve. Most cases are thought to be idiopathic; vascular compression, tumors, and multiple sclerosis have been the most common identifiable causes (1-4). TN also has been reported to be associated with infections such as herpes zoster and sinusitis but not with a pontine abscess (3, 8). We report a patient who presented with TN caused by a pontine abscess, which was thought to occur as an extension of sphenoid sinusitis. To the best of our knowledge, TN caused by a pontine abscess has not been reported previously.

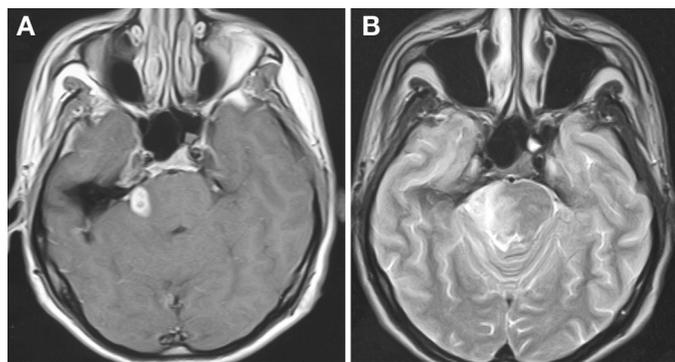
## CASE REPORT

A 33-year-old man presented with a 15-day history of paroxysmal lancinating pain confined to the distribution of the first and second branches of the right trigeminal nerve. After examination by his dentist, he underwent removal of two of his right upper incisors related to a common misdiagnosis. His personal history was remarkable for recurrent bouts of purulent nasal discharges, for which he was administered antibiotics. His neurological ex-

amination was remarkable for a right V<sub>1</sub>-V<sub>2</sub> hypoesthesia and diminished corneal reflex. A cranial magnetic resonance imaging scan revealed a 1.5- × 1.5-cm ring-enhancing lesion with surrounding edema at the right pons and faint staining of the roof of the sphenoid sinus (Fig 1). The lesion was considered a pontine abscess extending from sphenoid sinusitis, and the patient was administered a course of antibiotics, including intravenously administered metronidazole (Flagyl; Eczacıbaşı, Istanbul, Turkey) 1500 mg per day and ceftriaxone (Rocephin; Hoffmann-LaRoche, Basel, Switzerland) 4 gr per day for 6 weeks. The patient experienced gradual resolution of his TN, and repeat magnetic resonance images obtained 2 weeks after completion of antibiotic therapy revealed that the lesion had resolved (Fig. 2). At discharge from the hospital, the patient's corneal reflex remained diminished, but his neuralgia was relieved. He continued to experience mild neuropathic-type facial pain, which resolved completely after 6 months of orally administered amitriptyline hydrochloride (Laroxyl; Hoffmann-LaRoche) 25 mg per day.

## DISCUSSION

TN is characterized by severe, paroxysmal, lancinating facial pain in the territory of the



**FIGURE 1.** Axial T1-weighted (A), T2-weighted, (B) and coronal T1-weighted (C) cranial magnetic resonance imaging scans with and without contrast administration showing a 1.5- × 1.5-cm ring-enhancing lesion with surrounding edema at the right pons and faint staining of the roof of the sphenoid sinus.



**FIGURE 2.** Repeat axial enhanced T1-weighted (A) and T2-weighted (B) cranial magnetic resonance imaging scans obtained 2 weeks after completion of antibiotic therapy showing complete resolution of the lesion.

trigeminal nerve that is usually unilateral and associated with a cutaneous and/or mucous trigger zone. Most cases are referred to as primary (idiopathic) because of lack of an identifiable cause. Secondary TN results from compression of the trigeminal nerve at the root entry zone by vascular loops, various intracranial abnormalities that may occupy the cerebellopontine angle, and multiple sclerosis (1, 4, 5). TN also has been reported to be associated with infections such as herpes zoster and sinusitis (3, 8). In the patient described here, extension from sphenoid sinusitis was the most likely cause of the pons abscess.

Brainstem abscess is a rare condition associated with high mortality, and the best method of treatment has yet to be defined. It can be managed by medical treatment alone, stereotactic aspiration of the pus and medical treatment, or surgical excision/drainage of the abscess. Surgical drainage of a

brainstem abscess is indicated when medical therapy fails (7). With high-resolution stereotactic imaging and an appropriate intraparenchymal trajectory, stereotactic techniques within the brainstem have been performed with low risk and high accuracy (6). Because of the relatively small size of the abscess and the absence of life-threatening neurological findings in this patient, we instituted medical treatment, which resulted in a satisfactory outcome.

The differential diagnosis of secondary TN should include pontine abscess, which, to the best of our knowledge, has not been reported previously. Although the best treatment strategy for patients with pons abscess has not yet been defined, we suggest that surgery for biopsy or decompression should be reserved for patients in whom medical therapy fails and a diagnosis cannot be substantiated with a noninvasive approach.

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## COMMENTS

**P**ontine abscess as a cause of trigeminal neuralgia is obviously an oddity, but an important one, and I think it is worth re-emphasizing that occasionally, trigeminal neuralgia is created by intrinsic pathological conditions, which are usually demonstrable on magnetic resonance imaging (MRI) scans. Of course, multiple sclerosis is the most common such condition. The successful treatment of a small abscess in this situation is also an important observation.

The MRI abnormality could easily have been mistaken for a small cerebellopontine angle tumor. I can certainly imagine a scenario in which it would have been irradiated. This case re-emphasizes the important fact that trigeminal neuralgia will occasionally be caused by an intramedullary process and that substantial care must be taken in the diagnosis of MRI abnormalities to eliminate these kinds of lesions from the typical acoustic tumor. It is probable that many of the 10 to

12% of suspected acoustic tumors that are said to disappear with observation are not tumors at all. The astute neurosurgeon will always keep these facts in mind when diagnosing either trigeminal neuralgia or acoustic tumor.

**Donlin M. Long**  
*Baltimore, Maryland*

**T**his is an interesting study. This case demonstrates importance of early MRI studies to reveal the real cause of acute pain attacks. Immune deficiency syndrome as a cause of this type of clinical problem must especially be remembered.

**Yücel Kanpolat**  
*Ankara, Turkey*