

A Case Series Study of Trigeminal Neuralgia Secondary to Brain Tumor Meningioma

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Abstract

Trigeminal Neuralgia as a symptom caused by microvascular compression of brain tumor meningioma near to trigeminal nerve is rare. It could be missed in early stage detection of a brain tumor. The aim of this study, which was conducted on patients presented with brain tumor; is representing, under what conditions, diagnosing trigeminal neuralgia as secondary pain, can be useful in detection of brain tumor in early stages. This is a case series of 614 patients with brain tumor which 145 of these patients had meningioma and trigeminal neuralgia was detected in 4 of them, in which, 17% of patients with C-P Angle meningioma and 17% of patients with Petroclival meningioma had trigeminal neuralgia, suggests explanation of pathophysiology of subsequent trigeminal neuralgia as well as detection of underlying condition in early stages.

Keywords: Trigeminal Neuralgia; Brain Tumor Meningioma

Introduction

Trigeminal neuralgia is neuropathic facial pain. Also, trigeminal neuralgia is a prototype of neuropathic pain, typical trigeminal neuralgia does not fit grading system for the diagnosis of neuropathic pain [1]. Trigeminal neuralgia is commonly unilateral shock like pain but some patients also have continuous pain. pathophysiological mechanism of trigeminal neuralgia is demyelination of sensory afferents in the root entry nerve zone. Demyelination is caused by neurovascular compression [2]. Trigeminal neuralgia is categorized in two types: primary (idiopathic) or secondary. Trigeminal neuralgia has a prevalence of 0.1 - 0.2 per 1000 and is more prevalent in female than male that female to male ratio is 3/2. A review of several case series showed that pain is more predominant on the right side [3].

Trigeminal neuralgia as the result of microvascular compression, would be caused by a small tumor that compresses the nerve and causes the symptoms of trigeminal neuralgia. Regarding previous studies, meningioma is a rare cause of Trigeminal neuralgia. Patients with meningioma, depending on the situation of tumor in their brain, may experience symptoms include: Leg or arm weakness, Headaches, Seizures, Personality or memory changes, Loss of feeling or numbness in the face, Loss of patches of sight within field of vision, blindness, double vision, Loss of smell, Sharp pains in the face, facial numbness, and spasms of the facial muscles, Loss of hearing, Difficulty swallowing, Trouble walking, Dizziness. Meningioma is the most prevalent type of tumors in the head which occurs mostly in women. Epidemiology of meningioma is ranging from 1.3/100,000 to 7.8/100,000 for cerebral meningiomas [4].

Patients and Method

We studied on meningioma among 614 patients with brain tumor (consists of meningioma, glioma and pituitary tumor). we found that 145 patients had meningioma. Our trigeminal neuralgia study secondary to brain meningioma tumor was conducted on these 145 patients. 96 patients were female and 49 patients were men. Female to male ratio was 2. The mean age of our study sample was 50.

The initial symptoms of our patients with meningioma were:

1. Headache: 51%
2. Visual problems: 38.6%
3. Motor deficits: 22%
4. Seizure: 18.6%.

According to our study results 2.7% of our study sample had trigeminal neuralgia secondary to meningioma. All of our 4 patients with trigeminal neuralgia were women and the mean age of patients with trigeminal neuralgia secondary to meningioma was 43.

50% of our patients with trigeminal neuralgia had C-P Angle meningioma. 25% had Petroclival and 25% Parasellar. Otherwise C-P Angle meningioma prevalence among all patients with meningioma was 8.3% and Petroclival was 4%.

We found that 17% of patients with C-P Angle meningioma had trigeminal neuralgia, and 17% of patients with Petroclival meningioma had trigeminal neuralgia.

Our case series description study:

1. 41 years old woman with right Parasellar meningioma had V1-V2 pain and right ear hearing loss.
2. 31 years old woman with left Petroclival meningioma had V1-V2-V3 pain, jaw pain, vomiting and headache during 2 years.
3. 49 years old woman with C-P Angle meningioma had left V2 pain during 6 months, left hearing loss during 8 years and left peripheral facial palsy.
4. 51 years old woman with right C-P Angle meningioma had right trigeminal neuralgia, right hearing loss during 4 years, tinnitus during 4 months.

Conclusion

According to our case series, Trigeminal neuralgia can be most suspected as a secondary (known etiologic) pain when:

1. Trigeminal neuralgia was diagnosed in older patients, age \geq 40.
2. Trigeminal neuralgia is in companion with other neurological symptoms like headaches, rising intra cranial pressure symptoms (vomiting, double vision) and seizures.
3. Trigeminal neuralgia is in companion with focal neurological deficit.
4. Trigeminal neuralgia localized in specific anatomical branch of trigeminal nerve.

It is necessary here to mention that trigeminal neuralgia secondary to brain tumor is rare and the most patients with this diagnosis have an idiopathic pain. Our aim for publishing this article is to explain secondary type of trigeminal neuralgia, so that, we can understand the physiopathology of this disease as well as detection of an underlying condition (a brain tumor) in early stages.

Bibliography

1. Giorgio Cruccu., *et al.* "Trigeminal neuralgia, New classification and diagnostic grading for practice and research". *American Academy of Neurology* 87.2 (2016): 220-228.
2. Maarbjerg S., *et al.* "Trigeminal neuralgia - diagnosis and treatment". *Cephalalgia* 37.7 (2017): 648-657.
3. Manzoni GC and Torelli P. "Epidemiology of typical and atypical craniofacial neuralgias". *Neurological Sciences* 26.2 (2005): s65-s67.
4. Baldi I., *et al.* "Epidemiology of meningiomas". *Neurochirurgie* 64.1 (2018): 5-14.

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