Demographic Prevalance of Trigeminal Neuralgia in Rajasthan - A Short Study

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Abstract

Trigeminal neuralgia is a chronic condition which have a major impact on quality of life. There are few reports of trigeminal neuralgia in oriental populations. The objectives is to evaluate the patients diagnosed with idiopathic trigeminal neuralgia and to understand the disorder in the Indian populace.

Keywords - Trigeminal neuralgia, carbamazepine, cranial nerve

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Introduction

Trigeminal neuralgia is as a chronic, debilitating condition resulting in brief and intense episodes of facial pain in the distribution of one or more branches of the fifth cranial nerve [1-3]. The episodes of facial pain are sporadic, sudden and often like "electric shocks", lasting from a few seconds to several minutes.

Etiology may be either idiopathic or secondary to intracranial lesions such as tumor, infarction and multiple sclerosis. Mostly cases are with no underlying cause i.e., idiopathic type. Intracranial lesions that cause compression or traction of the trigeminal nerve are a recognized cause of secondary trigeminal neuralgia not primary reason. Patients with multiple sclerosis may develop trigeminal neuralgia; however, it is relatively rare. Trigeminal neuralgia is sometimes misdiagnosed due to non-availability of clear physical or laboratory diagnosis; and many a times, patient seek the help of numerous clinicians before a firm diagnosis is made. Though a benign disorder, it can have a major impact on quality of life and even gets refractory to various treatment modalities after some time.[4]

Trigeminal neuralgia is rare and statistical data regarding it is limited. The estimated annual incidence of trigeminal neuralgia is 12.6 per 100000 persons per year [5] and its incidence increases with age. Peak onset age is between 50 and 70 years, but thie disorder can also occur in children. Current data indicate that approximately 60% of patients with trigeminal neuralgia are female [6]. Women is approximately 5.9 cases per 100,000 women and men is approximately 3.4 cases per 100,000 men as annual incidence [7].

Due to relapses and reoccurrences there is no definitive cure for trigeminal neuralgia at present. However, plethora of medical and surgical treatment options do exist to alleviate the patient's symptoms.There are few reports of trigeminal neuralgia in oriental populations (2,58). Because of the paucity of Indian data on incidence and management, a retrospective study of patients was undertaken with the purpose of understanding the disorder in the local context.

Case Report

This study was conducted at Wisdom Dental Clinics, Jaipur with an aim to look into prevalence of disease in urban, rural and mixed population.

In the last year from January 2018 to December 2018, at Wisdom Dental Clinics, a total of 256 patients reported having signs and symptoms similar to Neuralgic pain. They were clinically evaluated and diagnosed for having Trigeminal Neuralgia.

Out of this, 190 patients were from rural areas of Rajasthan & Haryana (villages and small towns) and were referred from local primary health centers and dentists.Only, 25 patients were belonging to urban demographic sector (major cities).

All patients responded well to neuralgia drugs like Carbamazepine and Gabapentin initially, with some modifications to drugs in doses and content in some of the patients.All the patients were kept on the treatment with minimum dosage as possible and regular follow ups were advised with continued timely doses of prescribed medicines.

Remaining 41 patients, were coming from mixed rural-urban demographic background.
Out of 256 patients ,in 40 patients Alcohol block injections were given , to control local symptoms and pain of neuralgia, when no relief was achieved from pharmacological means.

Out of these 40 patients, in 10 patients, neurectomy was done, as symptoms presented even after alcohol injections. 7 patients under local anesthesia for Infraorbital neurectomy and 3 patients under general anesthesia for Inferior alveolar neurectomy.

So there was a marked difference in prevalence of the mysterious disease on the basis of there demographic living area, which might or might not have a etiologic component in the disease process.

Discussion

Trigeminal neuralgia is an uncommon disorder seen in dental and neurologic practice, which presents with brief lancinating pain in the facial region in the area distributed by the trigeminal nerve. The disease is also known by less familiar names such as 'Fotergill's disease' or 'tic douloureux'. Trigeminal neuralgia can be classified based on etiology as primary or idiopathic and secondary or symptomatic.[4]

The reported peak age of onset of trigeminal neuralgia is in fifth to eighth decades of life [7-9]. Younger age has been found to be associated with symptomatic trigeminal neuralgia. However, considerable overlap in age ranges of patient with classical trigeminal neuralgia and symptomatic trigeminal neuralgia has also been reported [10,11]. Similar trend was also observed in the present study with the peak age of onset between fifth and sixth decades of life.

Female predominance has been reported in the ratio of 5.9:3.4 in literature [7,9]. Conversely, a male predominance has been reported in three reports from India [8]. Although the disorder appeared to have a gender inclination, Zakrzewska [12] noted an equal representation of male to female incidence when adjustment was made to account for the older female population. However, the present study favors reflects an elevated risk for female subjects with a ratio of 2.13:1

In the present study it was observed, a rural predominance is more when compared to urban population. The other possibility could be hypothesized that rural females are more prone to domestic violence, poor nutrition ignored behavior and with time the accumulated psychological stress may have some role in etiology or precipitation of trigeminal neuralgia. Most commonly it is unilateral, but 3% of cases with bilateral involvement have also been reported. Bilateral cases need special attention due to complexity of presentation and management [7,8,13]. The trigeminal neuralgia usually affects right side of face as reported in literature [9,14,15] . Not even a single case of bilateral trigeminal neuralgia was found in the present study.

According to the literature ,the mandibular division (V3) is more commonly involved than the ophthalmic division (V1) [9,15-17]. Shankland [16] reported that a one third of the patients in their study involved both the second and third divisions of the fifth nerve, who were presented with neuralgic pain. In the present study also some patients had involvement of both mandibular and maxillary divisions.

The possible reason could be related to the inherent higher prevalence with involvement of mandibular division in Asian population [9]. The other possibility could be hospital bias yielded due to patients reporting to ophthalmologist for pain in the 1st division of 5th cranial nerve and does not report to maxillofacial or dental departments. Hence patient should refer to dental surgeon so to rule out any pain due to dental origin.

For the treatment of trigeminal neuralgia , it is simple medical to complex surgical management. The first line of defense is medicinal which includes carbamazepine and other related anticonvulsant drugs. These drugs work as Na+ channel blockers and relieve pain in trigeminal neuralgia by suppressing membrane resonance and firing in injured

afferents.[4]

Carbamazepine is the most studied and remains the drug of choice for treating trigeminal neuralgia [2,9,10,18-21]. Treatment begins with 100 to 200 mg two to three times daily. Doses should be increased very progressively and titrated to the severity of the patient's pain. In some cases to keep the patient pain free , maintenance dosage of 200 to 400 mg per day is sufficient. Studies have reported that in long-term treatment the drug was effective [18]

The patients who do not respond to medicinal treatment, some form of surgery should be proposed. It is estimated that up to 50% of the patient will sooner or later be in this situation [18]. The various procedure which falls under first surgical group are the peripheral procedures, which include neurolytic alcohol block, neurectomy, radiofrequency thermocoagulation of the peripheral branches, cryotherapy and peripheral acupuncture.

Alcohol injections are useful in those who are refractory to drug therapy and in whom surgery is delayed or defer for any reason.[22] In cases, where medicinal and alcohol block is ineffective, peripheral neurectomy is a safe surgical method.[23]

Conclusion

Though medical treatment of trigeminal neuralgia is usually the first option but Carbamazepine was found to be highly effective for this condition. Other treatment modalities were employed in more refractory cases including add-on of gabapentin and neurolytic alcohol blocs. Simple surgical intervention was used for few patients who did not respond to medical therapy. In the present study,patients from rural areas got successfully treated with Carbamazepine and Gabapentin only but some who were from mixed rural-urban demographic background were given Alcohol block injections to control local symptoms and pain of neuralgia and in some patients neurectomy was performed. Hence there was clear predilection of more rural cases affected according to the present study. Up till now, no such prevalence of the disease was mentioned in the literature so more such studies need to be done in order to ascertain the result of the present study.

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