

Trigeminal Neuralgia and Its Diagnosis: A Complete Review

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ABSTRACT

A most common phenomenon that affects many people worldwide is neuropathic pain. Trigeminal neuralgia is a neuropathic pain in which pain is unilateral, mostly radiating, shock like pain with trigger points; mostly occur by superficial touch on skin. The neuralgic pain can be experienced as a result of nerve injury or due to any pathological reason present centrally or at periphery. So in neuralgic pain misdiagnosis is common, due to lack to investigation and proper treatment plan.

The aim of this review is to discuss about trigeminal neuralgia and its currently available diagnostic procedures and treatment options of it.

Key words: Trigeminal neuralgia, neuralgic pain.

INTRODUCTION

Neuralgia is a pain of nerve occurs in its pathway and is a symptom of neurological or pathological disorder or nerve injury. Trigeminal neuralgia is a severe, sudden, recurrent stabbing pain usually unilateral and may be aggravated by various external factors. [1] In neuropathic pain, trigeminal neuralgia is common neuralgic pain in dentistry. Sensation of face is carried by the fifth cranial nerve (largest of the cranial nerve) called trigeminal nerve and is thought to be main cause of migraine. Its name suggests trigeminal means three branches: Ophthalmic nerve (V1), the maxillary nerve (V2) and the mandibular nerve (V3). The mandibular nerve is mixed, having both sensory and motor functions whereas ophthalmic and maxillary nerves are purely sensory. Motor functional fibers spread up to the masticatory muscles including tensor veli palatine and tensor tympani muscles. Gasserian ganglion also called semilunar ganglion in which branches

of trigeminal nerve have their cell bodies. In the temporal bone, Gasserian ganglion resides in Meckel's cave. [2]

Trigeminal neuralgia is defined by International Association for the Study of Pain (IASP) as a "sudden usually unilateral severe brief stabbing recurrent pain in the distribution of one or more branches of the Vth cranial nerve". The trigeminal neuralgia may be defined according to the International Headache Society (IHS) as a "painful unilateral affliction of the face characterized by brief electric shock like pain limited to the distribution of one or more divisions of trigeminal nerve". Pain is commonly evoked washing of face, brushing of teeth, shaving, even sometime by talking and may also occur spontaneously. [3]

ETIOLOGY

Trigeminal neuralgia also called tic douloureux. It commonly affects the lower area of face. From the causes of trigeminal

neuralgia, compression of nerve is the main cause usually occurs from few millimeters of entering in to the pons. Causes of trigeminal neuralgia include pressure caused by tumors, which may damage myelin sheath.^[2]

DIAGNOSIS

Trigeminal neuralgia clinically diagnosed by nature, intensity and duration of pain. The key feature is sudden onset and severe lancinating pain. Pain is sometime so severe that patient feel difficulty while eating, drinking and not able to perform routine daily functions properly.

Diagnostic criteria for classical trigeminal neuralgia are:

Paroxysmal attacks of pain, which affect one or more divisions of the trigeminal nerve. The duration of pain lasting from a fraction of a second to two minutes.

Pain has at least one of the following characteristics intense, sharp, superficial, or stabbing natures that aggravated mainly from trigger areas.

There is no neurological deficiency usually present. Similar attacks of pain occur in individual patient.^[3]

In some cases, the patient's pain of trigeminal neuralgia doesn't fit these criteria exactly; such a disease has been labeled as "atypical" or "mixed" trigeminal neuralgia.^[3]

The diagnosis of trigeminal neuralgia should be particular attention to the patient's description of the symptoms, which must fulfill at least two criteria in order to identify a possible TN: neuralgic pain must be characteristically paroxysmal, and must be affect only the territories innervated by the fifth cranial nerve. The presence of those two criteria raises high clinical suspicion of Trigeminal neuralgia.^[4]

Further for the conformation of trigeminal neuralgia, high resolution radiological examinations are fundamentals and must be capable of eliminating all others differential diagnosis. Magnetic Resonance Imaging (MRI) is the gold

standard radiological imaging in the diagnosis of TN according to the experience in the department of otology and otoneurological surgery in the hospital of la Conception in Marseille.^[4]

TREATMENT OF TRIGRMINAL NEURALGIA

Treatment planning includes pharmacological and surgical treatment. Anticonvulsant drug administration previously was first choice, but now-a-days varieties of treatment plans are available. Commonly drugs include Carbamazepine, Baclofen, Oxcarbazepine, Phenytoin and Lamotrigine etc. Surgical options includes: Glycerol gangliolysis, Microvascular decompression, Radiofrequency gangliolysis, Balloon compression, Stereotactic radiosurgery.^[2] After the trigeminal neuralgia become refractory, then to be transfer to a neurosurgeon.

CONCLUSION

Trigeminal neuralgia is a neurological condition which not affect only psychologically but also affects the daily routine life of the individual person. Correct diagnosis and treatment planning is the major barrier among clinician and patient. An important diagnostic criteria includes symptoms and by MRI. Clinicians must strictly follow the diagnostic criteria and should plan according to classified neuralgic conditions.

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