ASSESSMENT OF PERIPHERAL ALCOHOL INJECTION WITH DIFFERENT CONCENTRATIONS IN MANAGEMENT OF TRIGEMINAL NEURALGIA

A Thesis submitted to Oral and Maxillofacial Surgery Department, Faculty of Oral and Dental Medicine, Cairo University, for partial fulfillment of the requirements of the Master Degree in Oral and Maxillofacial Surgery

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بسم الله الرحمن الرحيم

((وعلمك ما لم تكن تعلم وكان فضل الله عليك عظيماً))

صدق الله العظيم

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LIST OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF ABBREVIATIONS

TN: Trigeminal Neuralgia.

PRTG: Percutaneous Radiofrequency Trigeminal Gangliolysis.

PMB: Percutaneous Micro-compression Balloon.

PRGR: Percutaneous Retrogasserian Glycerol Rhizotomy.

MS: Multiple Sclerosis.

NNT: Number-Needed-to-Treat.

NNH: Number-Needed-to-Harm.

MVD: Micro Vascular Decompression.

GK: Gamma Knife.

GR: Glycerol Rhizotomy.

RFT: Radio-Frequency Thermo-coagulation.

SEP: Somatosensory Evoked Potential.

TSEP: Trigeminal Somatosensory Evoked Potential.

DEDICATION

Dedicated to my supportive family, my wife, my son, my father in law and to everyone helped me to make this work possible.

INTRODUCTION AND REVIEW OF LITERATURE

Wilkins (1985) stated that Cephalgia was a term used in the first century by Aretaeus to describe the condition known as trigeminal neuralgia (TN). In 1773, John Fothergill described 14 cases and noted that the pain is sudden in onset and occurs in paroxysms. (1)

Moreover Tic Douloureux; the sudden wincing contraction of the facial muscles in response to severe pain of trigeminal neuralgia was primarily affecting older women more than men. Over the years since 1773, this condition has become well recognized as clinical entity. (1)

Wilkins (1993) revealed that Sir Charles Bell was the first to distinguish the sensory and motor roles of the trigeminal and facial nerves and stated that the trigeminal and facial nerves have separate functions, thereby enabling physicians to localize Tic Douloureux to the trigeminal nerve. This is not only resulted in a second name for that illness; trigeminal neuralgia, but focused the researches for its cause and conditions affecting the trigeminal nerve. (2)

Rohrer and Burchiel (1993) stated that TN is a painful condition characterized by brief, lancinating paroxysms of pain. Such pain was described as an electric shock like sensation or an intense stabbing feeling that lasting for seconds or minutes along the distribution of the fifth cranial nerve. They found that the second and third divisions of the trigeminal nerve are most affected. Attacks occur spontaneously or during tooth brush, shaving, chewing, yawning or swallowing. [(3)]

Moreover, TN; known as tic douloureux or Fothergill disease, is a clinical syndrome distinguished by brief paroxysms of unilateral, lancinating facial pain that is characteristically triggered by cutaneous stimuli, such as a breeze on the face, chewing, talking, or brushing the teeth. [(4-7)]

Civelek et al (2005) stated that the etiology of TN has been suggested to be vascular compression of the central axons of the trigeminal nerve at the level of pontocerebellar region, so called hyperactive dysfunctional syndrome. Trigeminal neuralgia is one of the most known pain syndromes. Several neurosurgical procedures have been developed for the treatment of idiopathic trigeminal neuralgia. [(7)]

Scrivani et al (2005) stated that TN is a well recognized syndrome characterized by lancinating attacks of severe facial pain. The diagnosis of TN is based on a history of characteristic pain attacks that are consistent with specific widely accepted criteria for the diagnosis. Pain attacks of TN may result from physiologic changes induced by a chronic partial injury to the brain stem trigeminal nerve root from a variety of causes. An early and accurate diagnosis of TN is important, because therapeutic interventions can reduce or eliminate pain attacks in the large majority of TN patients. [(8)]

The annual incidence of TN has been reported as 4.3 per 100,000 populations, with a slight female predominance. The incidence of TN in patients with multiple sclerosis is between 1 and 2 percent, making it the most common associated disease. Patients with hypertension have a slightly higher incidence of TN than does the general population. Trigeminal neuralgia is generally sporadic, although there have been reports of the disease occurring in several members of the same family. Spontaneous remission is possible, but most patients have episodic attacks over many years. [(9)] Primary care physicians might expect to encounter this condition two to four times over the course of a 35-year career. The peak incidence is

at 60 to 70 years of age, and classical TN is unusual before age of 40 years. [9, 10]

Edlich et al (2006) concluded that trigeminal neuralgia is the most common facial neuralgia, and is considered to be one of the most painful conditions to affect patients. The rate of occurrence of TN in men and women is 2.5 and 5.7 per 100,000 per year respectively. Trigeminal neuralgia is generally characterized by lancinating, unilateral, paroxysmal pain occurring in the distribution of the fifth cranial nerve. [11]

The diagnosis of TN is made clinically by excluding other possible causes of facial pain and is based on signs and symptoms from the patient history such as a trigger zone, typical unilateral lancinating paroxysms following neural disturbance, and a refractory period. Generally, TN can be diagnosed by the typical patient history, a negative neurologic examination, and response to a trial of carbamazepine. Imaging studies should be considered if the diagnosis is uncertain or neurologic abnormalities are noted. [11]