



“A CLINICAL STUDY OF 25 CASES OF TRIGEMINAL NEURALGIA”

Surgery

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ABSTRACT

Introduction: Trigeminal neuralgia is a chronic pain condition that affects the 5th cranial nerve, one of the most widely distributed nerves in the head.

Aims and objectives: 25 cases of trigeminal neuralgia were studied from the point of view of clinical features and treatment.

Material and Methods: Twenty five patients were taken from the Neuro Surgery Department, S.M.S. Medical College and Hospital, Jaipur. The following treatment regimens were employed: Drug Treatment, Injection treatment and Surgical treatment.

Results: Trigeminal neuralgia was most common in the age group of 51 to 60 years. Males were more commonly involved than females i.e. males 56% and females 44%. Trigger zones were present in 16% of the cases. Combined involvement of second and third division was commonest which occurred in 36% of cases. Post operative complications occurred in four cases out of thirteen cases operated for.

Conclusion: Drug treatment should be tried in all cases of trigeminal neuralgia especially those who are unfit or reluctant for surgery.

KEYWORDS

INTRODUCTION

Trigeminal neuralgia was well known to the physicians of antiquity but the first clear picture of this clinical condition was described by Nicolaus Andre in 1756 under the name "Tic Douloureux." Fothergill in 1773, gave the clinical picture of this disease which still remain unchanged. He described trigeminal neuralgia as "a well defined syndrome characterised by paroxysms of intense pain within the distribution of trigeminal nerve."

The maximum incidence rate is found in fifth to seventh decade of life; it is exceptionally rare below the age of 20 years. Handerson in 1967, carried out a study of 650 individuals suffering from it and found the entry of stab to be in the region of third division of nerve in 35%, of second division of nerve in 36% and first division in 12% of the cases. The pain appeared simultaneously in upper and lower gums in 12% of the cases. In India male predominance is seen in this disease (Abraham and Chandu, 1962) and others including present series (right side more common than left side). But in western countries female predominance is reported by various workers.

AIM AND OBJECTIVES

In present series 25 cases of trigeminal neuralgia are studied from the point of view of clinical features and treatment of the disease with special reference to the different types of treatment available and their suitability for our patients.

REVIEW OF LITERATURE

From the very start a number of treatments have been tried for the relief of symptoms of the disease. The earliest treatment consisted of the division of extracranial branches of the nerve, but it gave a temporary relief lasting few months only.

In 1821, John Lizare of Edinburgh performed the division of mandibular nerve in infratemporal fosse. Pose in 1890, became more radical by partly evulsing the Gassarian ganglion after excising maxilla and enlarging the foramen ovale. Spillar and Frazier in 1901, did the first successful division of nerve root. Dandy (1929) divided the sensory root of nerve through a small unilateral suboccipital craniotomy, in the cerebello-pontine angle. Wilking (1938) was the first to do the sensory root division through intradural approach across the floor of temporal fossa. The operation of decompression-compression was introduced in 1952 by Taarnhoj. Injection treatment was first described by Harris, in 1910, through lateral approach. Anterior approach was used by Hertel in 1912. Kirschner in 1931 advised electrocoagulation of Gassarian ganglion.

To reduce the number of attacks certain drugs have been tried. King in 1958, suggested that sodium hydantoin and mephenesin reduced the

trigger response.

Buton in 1975, introduced radio-frequency coagulation of Gassarian ganglion and suggested that it was a safe and effective mode of treatment.

Non Surgical Treatment Of Trigeminal Neuralgia

1. Inhalations of trichloroethylene.
2. Daily doses of 2-3 gms. of Hydantoin drug.
3. Vasodilator drugs, such as nicotinic acid used by Cooper (1938) and betamethyl choline chloride by Adams and Robinson (1941).
4. Use of radiation in trigeminal neuralgia.
5. Carbamazepine (tegretol) 600 mg per day in divided doses.
6. Alcohol injection in trigeminal division and branches.

Surgical Treatment Of Trigeminal Neuralgia

1. Trigeminal peripheral neurectomy.
2. Subtemporal dorsal root section.
3. Dorsal root section at the pons.
4. Descending trigeminal tractotomy nucleo tractotomy.
5. Trigeminal dorsal root decompression-compression block of the great auricular and great occipital nerves.
6. Radio frequency percutaneous gasserian ganglion lesions.
7. Percutaneous electro coagulation of the trigeminal nerve.

MATERIAL AND METHODS

Twenty five patients were taken from the Neuro Surgery Department, S.M.S. Medical College and Hospital, Jaipur. A detailed history was taken and a thorough clinical examination was conducted on each patient. Special attention was paid to the following points.

1. Age of the patient,
2. Sex of the patient,
3. Character, duration and frequency of the pain.
4. Side involved - right or left, unilateral or bilateral and the division of the nerve involved, any radiation,
5. Presence of trigger zones and their location,
6. Precipitating causes if any,
7. Neurological examination.

The following treatment regimens were employed:

Drug Treatment : Drugs used in this study were -

1. Dilantin Sodium (Eptoin) 100 mg. three times a day.
2. Carbamazepine (Tegretol) 100 mg. three to four times a day.

Either drug was given in the above mentioned doses until the pain was relieved. Thereafter the dose was gradually tapered off.

Injection Treatment : Maxillary division, mandibular division or the Gasserian ganglion was injected with absolute alcohol depending upon the division/divisions involved.

Surgical Treatment : Decompression - Compression Operation (Taarnhoj Technique)

RESULTS AND OBSERVATIONS

TABLE No.: 1 Showing various parameters studied.

Sr. No.		No. of Cases	Percentage
1. AGE IN YEARS	21-30	2	8%
	31-40	6	24%
	41-50	4	16%
	51-60	7	28%
	60-70	6	24%
2. SEX	Male	14	56
	Female	11	44
3. DURATION OF SYMPTOMS	Below 1 yr.	10	40%
	1 - 2 yrs.	2	8%
	2 - 5 yrs	8	32%
	5 - 10 yrs	5	20%
4. SIDE OF FACE INVOLVED	Right Side	13	52%
	Left Side	12	48%
5. DIVISIONS INVOLVED	First	4	16%
	Second	4	16%
	Third	5	20%
	First & Second	2	8%
	Combined	9	36%
	Second & Third	1	4%
	Combined First, Second and third combined		
6. PRESENCE OF TRIGGER ZONES	Present	4	16%
	Absent	21	84%

DISCUSSION

The present clinical study was done on 25 cases of trigeminal neuralgia, taking in consideration different clinical aspects, treatment and post operative results.

Trigeminal neuralgia was most common in the age group of 51 to 60 years. Males were more commonly involved than females i.e. males 56% and females 44%. Right sided involvement of the face was more frequent than the left i.e. 52% of the cases.

Trigger zones were present in 16% of the cases. In the present series combined involvement of second and third division was commonest which occurred in 36% of cases. All the three divisions were involved in only 4% of the cases Drug Treatment was instituted in 17 cases out of which 10 had complete relief while 7 had recurrence i.e. 41% of the total cases.

13 cases underwent surgical treatment, out of them 10 had complete relief and remained free of symptoms throughout the period of follow up while 3 had recurrence within 1 year of operation and required injection treatment (Injection of absolute alcohol in the affected division of the nerve).

Injection treatment was administered to 5 patients. None of them had recurrence and all remained free of symptoms through out the period of follow up.

Post operative complications occurred in four cases out of thirteen cases operated for. Facial paralysis was seen in two cases which improved within one month of operation. Cerebrospinal fluid leak was seen in one case and it subsided after about 10 days. One case developed post-operative infection (wound sepsis) and so had secondary haemorrhage. Wound was reopened and haemostasis was obtained by packing the wound.

CONCLUSION

From the present study it is concluded that the surgical treatment of the disease is the treatment of choice. Drug treatment gave paramount relief in only 58.9% of cases. The remaining 35.29% of the cases have

to undergo surgery while 5.81% of the cases had injection of absolute alcohol, so drug treatment should be tried in all cases especially those who are unfit or reluctant for surgery.

REFERENCES

- 1- Borsook H. Relief of Symptoms of major Trigeminal Neuralgia following use of Vitamin B₁ and Concentrated Liver Extract. J.A.M.A.1940; 114: 1421-1423.
- 2- Cooper MJ. Clinical observations on effects of choline compounds in neurologic disorders with special reference to Meniere's Syndrome. Am.J.M.Sc.1938; 195: 83-84.
- 3- Fields WS, Hoff HE. Relief of pain in Trigeminal Neuralgia by crystalline Vitamin B₁₂ Neurology 1952; 2: 131-139.
- 4- Frazier CH. An operable tumour involving the Gasserian Ganglion. Amer. J. Med. Sci.1918; 156: 483-490.
- 5- Glasser MA. Treatment of Trigeminal Neuralgia with Trichlorethylene. J.A.M.A.1931; 96: 916-920.
- 6- Grant FC. Alcohol injection of second and third divisions of trigeminal nerve: Clinical results with more exact technique. J.A.M.A. 1922; 78: 1780-1781.
- 7- Hyndman OR. Tic douloureux : partial section of the root of the fifth cranial nerve; a comparison of the subtemporal and cerebellar approaches from surgical and physiological standpoint. Arch. Surg. 1938; 37: 74-99.
- 8- King RB, Meagher JN, Barnett JC. Studies of trigeminal nerve potentials in normal compared to abnormal experimental preparations. J. Neurosurg.1956; 13 : 176-183.
- 9- McGrogan M. The significance of certain measurements of the skull in the diagnosis of basilar impression. Brit. J. Radiol. 1948; 21: 171-181.