

Complications of MVD for Trigeminal Neuralgia

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This standard approach describes the decompression of offending vessels at the root entry zone of 5th cranial nerve. We have operated upon 25 patients with different age group. C.T. Scan of all patients was normal except two. One had CP angle tumor and other had right epidermoid cyst. The aim of study was to evaluate the outcome and complication in one year follow up.

Key words: Vascular decompression.

Trigeminal Neuralgia is a condition characterized by intense, unilateral paroxysmal facial pain waxing and waning in character involving one or more division of trigeminal nerve. This disease has long history and firstly was narrated by Wilkins (1677) as a separate clinical entity. This painful paroxysmal condition has been managed by variety of treatments through centuries. It is more common in women than in men.

The aims and objective was to study in outcome of MVD for trigeminal neuralgia in one year follow up and to evaluate the complications associated with the procedure of MVD. This also includes the mortality and recurrence of the patients after MVD.

Method and materials

Twenty five patients underwent MVD for trigeminal neuralgia in department of Neurosurgery Nishtar Hospital Multan (10) and Lahore General Hospital Lahore (15) Unit - I from 1994 to 1996.

All the patients initially were treated medically (carbamazepine). These patients were refractory to medical therapy because of lack of response, loss of effective response or development of intolerable side effects.

Evaluation

1. For comparison, each patient had detailed neurological examination with special emphasis to the crucial nerve.
2. X-ray skull PA/lat view were taken in every case.
3. CT Scan brain plain and with contrast done of every patient. In position Fossa skill thickness was 5mm to 10mm. This has mainly done to exclude a Tumor an unsuspected structural lesion in the position Fossa.
4. Four vessels angiography was done in only one case to rule out emergency in the vicinity of trigeminal nerve root.

Results

In our study the age of patient ranged from 21-70 years. 17 patients has involved right side of face while 8 patients have symptoms on left side of face. No case of bilateral neuralgia was examined there were twenty males and four females.

Majority of patients has maxillary and mandibular nerve involvement. Seven patients had ophthalmic and maxillary involvement. In four cases only mandibular and in other four cases only maxillary division was involved. Two patients had neuralgic pain in all division of trigeminal nerve and in only one patient; there was involvement of ophthalmic and mandibular division.

CT Scan of all patients were normal except two patients. One had CP angle tumour and other had right epidermoid cyst.

Table 1: Offending Vessels / other Lesions (n=25)

Vessels	=n	%age
Superior cerebellar artery	14	56
Anterior inferior cerebellar artery	4	16
Posterior inferior cerebellar artery	2	8
Unnamed / unidentified vessel	2	8
Epidermoid cyst	1	4
Rt CP angle tumour (acoustic neuroma)	1	4
Vein	1	4
Total	25	100
Site of Compression		
Anteroinferior	10	40
Anterosuperior	12	48
Inferolateral	2	8
Between sensory and motor roots	1	4

Twenty out of 25 patients had compression at anterior superior side of nerve. All patients had mandibular and maxillary nerve involvement. Ten patients had vascular compression anteroinferiorly and they had maxillary division involvement. Two patients had compression at inferior and lateral aspect. In these ophthalmic and maxillary division were involved.

It is interesting to note that we had one patient where epidermoid cyst was compressing the V nerve, which was removed.

Complications

In our study of 25 patients, three patients had vomiting, vertigo which settled after 5-7 days. No patient had permanent sensory or motor deficit. Undue retraction of facial and vestibulocochlear nerve was mainly responsible for vertigo. One patient complained of burning sensation on ipsilateral half of face. He had also been suffering from

some psychogenic problem. He got relief off and on by continuous use of antidepressant drug like clonazepam. No patient had complaint of facial nerve palsy.

Complication	=n	%age
Cranial nerve Palsy (VII N)	-	-
Sensory disturbance of face	-	-
Vertigo & vomiting	3	12%
CSF leak	1	-
Meningitis	-	-
Hearing disturbance	-	-
Ataxia	-	-
Diplopia	-	-
Burning sensation	-	-
Total	3	12%

Discussion

Numerous surgical approaches to trigeminal neuralgia problem have developed as a result of uncertainty surrounding the etiology of the disease. Currently one of the most debatable explanation for disease is that it is due to distortion and compression of the trigeminal nerve root entry zone by one or more tortuous vessels. Dandy (1934) and later Gardner Miklos (1959) were the first to propose the vascular and compressive etiologies respectively. Jannetta (1977) took a definite step in developing and popularizing the posterior fossa MVD operation for the treatment of trigeminal neuralgia.

We attained favourable results in our series of twenty five patients study.

In identification of vascular compression, routine radiographic procedure including CT scan were not helpful except in two cases, in which we identified CP angle tumour (Acoustic neuroma) and epidermoid cyst. Out patients were non affording and we did not utilize the facility of magnetic resonance imaging technique. High resolution magnetic resonance imaging for demonstration of vascular compression and oblique sagittal magnetic resonance imaging method have been developed to provide better visualization of vascular compression of nerves.

In our study, we found that trigeminal neuralgia is a disease of middle age group (21-70 years). There was a slight difference, noted in the findings of Bederson and Wilson (1989) who reported a mean age group of 53 years. Akio Morita (1989) reported 66 years etc. Barba Alksne (1984) reported trigeminal neuralgia in very old patients who were above 90 years of age. In the study of Klun (1992), 125 cases, out of 220 were above 50 years and 56 patients of 42 years.

In our series, male predominance as twenty two males and three females, making a ratio of (7:1). This is quite in contrast to reports from other authors. Bederson et al (1989) presented a report of 2:5 male to female ratio, was 9:12 in Klun (1992) in Akio Morita series there was

female predominance. There may be two following causes. The main cause of this gross difference could be the criteria for the selection of the patients.

Conclusion

Although our series of twenty five patients, is not as large as others but it clearly confirms the vascular compression is highly related to pathogenesis of trigeminal neuralgia.

Patients treated with microvascular decompression seems to have a number of advantages. Neuralgia is relieved in all patients with preservation of sensation in distribution of trigeminal nerve so there is no risk of anaesthesia dolorosa.

CT scan of brain was helpful to rule out any SOL at CP angle. Microvascular decompression offers the greatest potential for relief of symptoms without drastic side effect. Experience is required to safely expose the 5th nerve at root entry zone. We strongly believe that after medical treatment microvascular decompression should be the treatment of choice in trigeminal neuralgia. With experienced hand, good results with minimum side effects may be anticipated.

It is a major surgical procedure on vital area of brain with a potential for serious side effect.

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