Original Article

Surgical Management of Idiopathic Trigeminal Neuralgia Using Spongiston A Single Centre Study

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ABSTRACT

Objective: A study of the effectiveness of micro vascular decompression as a therapy for trigeminal neuralgia.
Study Design: A single-center study
Place and Duration of Study: This study was conducted at the Neurosurgery departments of Bacha Khan Medical College/Mardan Medical Complex in Mardan from January, 2021 to July, 2021.
Materials and Methods: This study included 34 individuals of both genders who presented with trigeminal neuralgia. Following written permission, the patient's complete demographics were collected. Micro-vascular decompression was performed on all patients. Borrow Neurological Institute Pain score was used to measure outcomes (BNIP). On the fifth postoperative day, a check-up was performed. SPSS 24.0 was used to analyze the data.
Results: Patients' average age was 54.269.78 years old. Out of a total of 42 people, 20 were female (58.82%) and 14 were male (41.17%). Seventeen patients (50%) recovered completely after surgery with a BNIP score of 1-2 and no medication, twelve patients (35.29%) recovered partially with a BNIP score of 3, and five patients (14.71%) did not recover at all with a BNIP score of 4. It may be concluded that micro-vascular decompression is an effective and safe treatment for trigeminal neuralgia with a negligible risk of complications.
Conclusion: Trigeminal neuralgia is one of the most painful neurological disorders. Micro-vascular decompression is an effective and safe treatment for trigeminal neuralgia, with fewer adverse events and higher patient satisfaction levels than alternative options. On average, 90 percent relieved with surgical treatment.

Key Words: Micro-vascular Decompression (MVD), Trigeminal Neuralgia, Effectiveness

Citation of article: Naeem Ul Haq, Shah SN, Ali G, Iftikhar Ul Haq M, Khan M, Shah I. Surgical Management of Idiopathic Trigeminal Neuralgia Using Spongiston A Single Centre Study. Med Forum 2022;33(10):81-83.

INTRODUCTION

Trigeminal Neuralgia is a severe clinical disorder characterised by excruciating pain in the distribution region of cranial nerve V on the face and head, with characteristics of a shock, a knife, and tears. The discomfort may be produced by involuntary facial muscle movements such as those that occur while talking, smiling, or eating or by a sudden touch on the face. The duration of a burst might range from a few seconds to many minutes.

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Received: May, 2022
Accepted: July, 2022
Printed: October, 2022

While in remission, patients may go about their normal activities without restrictions. As the condition advances, attacks occur more often and with shorter intervals[1].

Suicide or mental illness may result from increasing pain. Thankfully, TN is relatively uncommon, affecting just roughly 8 out of every 10,000 individuals at some point in their lives. Only around 0.7% of people will get cancer at some point. This figure may be inflated since many patients are likely incorrectly diagnosed with oral disorders at the onset, leading to unnecessary operations[2]. Primary (idiopathic), typical and secondary TN was all identified by Giorgio Cruccu (secondary). While pharmaceuticals like carbamazepine or oxcarbazepine and other psychiatric treatments were first used to treat TN patients' pain, some 30%-75% of them eventually reported poor therapeutic pain-relief results or side effects, prompting them to opt for surgery despite the risks. 3. No mechanism has been identified so far. Pathophysiology of TN, in other words. On the other hand, the "compression-short circuit hypothesis" was primarily accepted in the academic community.

As the trigeminal nerve's bare axons approach the pons, they cause short circuits between afferent fibers and pain and non-pain fibres[4]. This results in demyelination of the peripheral and trigeminal nerve, which may produce a commingling of pain and non-pain fibres. The MVD procedure, in which spongiston is poured between the compressed nerve and the offending vascular, is the functional neurosurgery of choice for initial TN therapy[5]. This study looked at the effects of microvascular decompression on patients with trigeminal neuralgia[6].

MATERIALS AND METHODS

The Bacha Khan Medical College/Mardan Medical Complex in Pakistan completed this six-month research (between January and July of 2021). 34 trigeminal neuralgia patients, male and female, participated. After written permission, patient demographics were acquired. We considered age, gender, BMI, and illness duration. Exclusion considerations included brain tumors, TBIs, and lack of informed permission.

Borrow Neurological Institute offers pre- and post-op treatment. Quantifying suffering Brain surgery patients underwent CT and MRI scans. MVD afflicted everyone. Straight (3-5 cm) probe 1 cm beyond mastoid depression entrance site examines asterion. Sigmoid and transverse sinuses unite after a 2 x 3 cm craniectomy. Y-shaped sutures close dura incisions. Cerebellar atrophy by CSF drainage. Trigeminal nerve is near tentorium-petrous bone. Arachnoid examination down the trigeminal nerve from the pons to Meckel's cavern reveals the guilty boat in 90% of instances. Dismember guilty boats to ease strife.

Five days after surgery, subjects took the BNIP. CSF leakage, infection, hearing loss, and mortality were studied. Studying post-surgery contentment. SPSS version 24.0 examined the data. Mean and standard deviation were calculated. Tables display frequency and percentages.

RESULTS

Table No 1: Patient demographics and baseline data

Variables	(Frequency)	Ratio
Age Mean yrs	(54.26±9.78)	-
BMI kg/m^2	(25.34±3.18)	-
Duration Disease Yrs	(2.98±1.16)	-
Gender		
Woman	(20)	(58.82)
Man	(14)	(41.17)
Complex Sideways		
(Leftward)	(15)	(44.12)
(Rightward)	(19)	(55.88)

Patients had a mean age of (54) (69) (78) years old. There were 20 females (58.82%) and 14 males (41.17%). The average BMI was 25.343.18 kg/m2, which indicates a healthy amount of fat. For 19 individuals (54.88%), it was the right side affected, whereas, for 15 (44.18%), it was the left. The average time spent experiencing symptoms was 2.981.sixteen years show in table one.

Twenty-one patients (61.76%) had a BNIP score of 4 before surgery, whereas 13 patients (38.14%) had a BNIP score of 5.

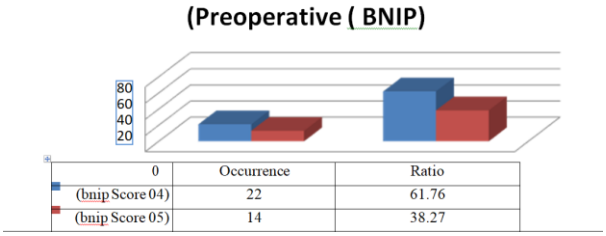

Figure No 1: BNIP Preoperative score

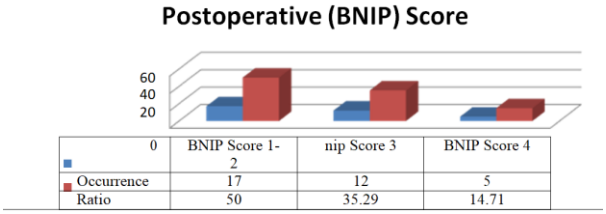

Figure No.2: Postoperative BNIP score

17 patients (50%) had BNIP scores of 1-2 (complete recovery, no medicine required), 12 (35.29%) had BNIP score 3, and 5 (14.71%) had BNIP score 4. (no recovery). (Fig. 2) Shafaat Hussain, Naeem Ul Haq, Anwar Shah, etc.

3 (8.82%) patients suffered CSF leaks, 2 (5.88%) had wound infections, and 1 (2.94%) had hearing loss post-op. (2)

Table No 2: Difficulties after surgery in participants

(Variable)	(Occurrence Ref.)	(Ratio)
(No Problem)	(27)	(81)
(leak csf)	(4)	(9)
(infected Wound)	(3)	(6)
(Loss Hearing)	(2)	(3)

DISCUSSION

This study evaluated micro-vascular decompression for trigeminal neuralgia (trigeminal nerve pain). 40 individuals received micro-vascular decompression. Most patients (59%) were female at age 54.269.78. 41% were men (ranges 32 to 65 years) [7]. Most patients were above 50, and the female-to-male ratio was outstanding (60-75%), consistent with earlier study[8].

The average duration of symptoms in this research was 2.981.6 years. Twenty-one patients (61.76%) had a BNIP score of 4, and thirteen patients (55.6%) had a BNIP score of 5 prior to surgery[9].

Following surgery, 17 patients (50%) were rated a 1 or

2 on the BNIP scale (full recovery; no medication needed), whereas 14 patients (14.71%) were rated a 3 or 5 on the scale (no recovery). According to Wang X et al., 18 out of 20 patients (82%) reported feeling no pain after surgery. Three (13%) of the patients treated with BNI II-III had complete pain relief after three months, while the other four (75%) saw at least some improvement from their symptoms.91.8% of trigeminal neuralgia patients reported pain decrease after MVD, whereas 8.2% reported no improvement[10]. In numerous studies, MVD decreased pain[11]. 65% of patients reported instant pain reduction following MVD, 15% delayed relief, and 20% no relief[12].

Three patients (9%) suffered CSF leaks, two (6%) had wound infections, and one (3%) had hearing loss. CSF leak, hearing loss, and wound infection are common consequences of micro-vascular decompression [13]. 80% of study participants were happy with their surgical results. 84% of trigeminal neuralgia patients treated with MVD were satisfied with their procedure, according to Sarsam Z et al[14].

CONCLUSION

In terms of neurological conditions, trigeminal neuralgia is towards the top in terms of agony. When compared to other treatment choices for trigeminal neuralgia, micro-vascular decompression had fewer side effects and greater levels of patient satisfaction. Ninety percent of patients reported feeling better after surgery.

Author's Contribution:

Concept & Design of Study:	Naeem Ul Haq
Drafting:	Syed Nasir Shah, Gohar Ali
Data Analysis:	Mian Iftikhar Ul Haq, Musawer Khan, Inayat Shah
Revisiting Critically:	Naeem Ul Haq, Syed Nasir Shah
Final Approval of version:	Naeem Ul Haq

Conflict of Interest: The study has no conflict of interest to declare by any author.

REFERENCES

1. Merrison AF, Fuller G. Treatment options for trigeminal neuralgia. BMJ 2003;327:1360-1361.
2. Gerganov VM, Giordano M, Elolf E. Operative management of patients with radiosurgery-related trigeminal neuralgia: analysis of the surgical morbidity and pain outcome. Clin Neurol Neurosurg 2014;122: 23-28.
3. Xia L, Zhong J, Zhu J. Effectiveness and safety of microvascular decompression surgery for treatment of trigeminal neuralgia: a systematic review. J Craniofac Surg 2014;25: 1413-1417.
4. Barker FG, Jannetta PJ, Bissonette DJ, Larkins MV, Jho HD. The long-term outcome of microvascular decompression for trigeminal neuralgia. N Engl J Med 1996;334(17):1077-83.
5. Ihsanullah, Khanzada K, Alam M, Hameedullah. Functional outcome of Microvascular Decompression for Trigeminal Neuralgia (TN). Pak J Neurol Surg 2019; 23(2).
6. Wang X, Wang H, Chen S, et al. The long-term clinical outcomes of microvascular decompression for treating trigeminal neuralgia compressed by the vertebra-basilar artery: a case series review. BMC Neurol 2019;19:217.
7. Adela WU, Tina D, Alice H, Garzon-Muvdi, Tomas, Bender, Matthew T; Bettegowda, Chetan; Lim, Michael. Immediate and Long-Term Outcomes of Microvascular Decompression for Mixed Trigeminal Neuralgia. World Neurosurg 2018;300-e307.
8. Sharma R, Phalak M, Katiyar V, Borkar S, Kale SS, Mahapatra AK. Microvascular decompression versus stereotactic radiosurgery as a primary treatment modality for trigeminal neuralgia: A systematic review and meta-analysis of prospective comparative trials. Neurol Ind 2018;66:688- 94.
9. Li Y, Yang L, Ni J, Dou Z. Microvascular decompression and radiofrequency for treating trigeminal neuralgia: a meta-analysis. J Pain Res 2019;12:1937-1945.
10. Bhaskar RG, et al. Clinical outcome following microvascular decompression for trigeminal neuralgia. Int J Res Med Sci 2017;3(7):1741-1744:2017.
11. Bohman LE, Pierce J, Stephen JH, Sandhu S, Lee JY. Fully endoscopic microvascular decompression for trigeminal neuralgia: technique review and early outcomes. Neurosurg Focus 2014;37(4):E18.
12. Régis J, Tuleasca C, Resseguier N, Carron R, Donnet A, Yomo S, et al. The very long-term outcome of radiosurgery for classical trigeminal neuralgia. Stereotact Funct Neurosurg 2016; 94 (1): 24-32.
13. Sarsam Z, Garcia-Fiñana M, Nurmikko TJ, Varma TR, Eldridge P. The long-term outcome of microvascular decompression for trigeminal neuralgia. Br J Neurosurg 2010;24 (1):18-25.
14. Adela, Tina D, Alice H, Tomas GM, Bender, Matthew T, et al. Immediate and Long-Term Outcomes of Microvascular Decompression for Mixed Trigeminal Neuralgia. World Neurosurg 2018;300-e366.