

COMPARISON OF SEMONT MANEUVER AND VESTIBULAR SEDATIVE IN BENIGN PAROXYSMAL POSITIONAL VERTIGO (BPPV)

MUHAMMAD JAMALULLAH¹, SOHAIL BABAR NIAZI², KHALID AZAM³

ABSTRACT

OBJECTIVE: To see and compare the effectiveness of Semont maneuver and vestibular sedative in the management of patients diagnosed as Benign Paroxysmal Positional Vertigo.

STUDY DESIGN: A quasi experimental study

PLACE AND DURATION: ENT Department PAF Hospital Mushaf Base Sargodha from 1st February 2012 till 30th July 2012.

METHODOLOGY: A total of sixty patients of Benign Paroxysmal Positional Vertigo having age range of 30 to 75 years, were divided in two equal groups by random sampling. All patients were diagnosed by detail history and examination. Group A patients were treated by vestibular sedatives and group B with Semont maneuver and results were compared over the criteria of freedom from vertigo on Dix Hallpike Test.

RESULTS: A total of sixty cases were included in the study. 30 cases were treated by Semont maneuver and in this group 83.33% (n=25) cases showed complete recovery after 30 days. The other 30 cases were managed by vestibular sedative and 26.66% (n=8) cases were free from symptoms after 30 days in this group. All the patients were followed on day 3, 7 and 30 and were asked about the subjective improvement of vertigo, followed by confirmation with the objective test that is Dix Hallpike.

CONCLUSION: Semont maneuver has more efficacy as compared to vestibular sedative in the management of BPPV.

KEYWORDS: Semont Maneuver, Benign Paroxysmal Positional Vertigo, Vestibular sedative, Dix-Hallpike Test.

INTRODUCTION

Dizziness is a frequent complaint in a large number of patients visiting ENT clinics. Positional vertigo is one of its most leading causes¹. Fortunately, it can be readily diagnosed by positional testing. Recent insights into its patho-physiology have provided new means of effective treatment that can be applied in clinics. BPPV results when otoconia are displaced from macula of utricle into the semicircular canals of the inner ear. The main symptom of benign paroxysmal positional vertigo is brief attacks of vertigo which are provoked by certain head position transitions². The disease generally occurs between 50 to 70 years of age.

The episode of BPPV is triggered by changing of head posture. The episode is of very short duration lasting for a few seconds to a minute³. Vertigo occurs when the patient changes his position to the affected side. Many patients also complaint of marked nausea in addition to vertigo⁴. BPPV is confirmed by the Dix Hallpike test. The test is considered positive when nystagmus is seen on assuming of Dix Hallpike position⁵. This test is a simple

test and easy to perform in the outpatient clinic. It is an objective test and it distinguishes many patients having vague complaints of dizziness. It takes few minutes to perform this test and is very specific in diagnosing Benign Paroxysmal Positional Vertigo. Once the patients are diagnosed, they are offered more accurate therapy which is very beneficial to patients. A normal test result means that the patient did not have vertigo or nystagmus during the test. An abnormal test result means that he had vertigo or nystagmus during the test.

Benign Paroxysmal Positional Vertigo is treated by Semont maneuver and vestibular sedatives. Semont maneuver is very effective in treatment of BPPV⁶. Semont maneuver is a very specific therapy for the patients who are diagnosed as BPPV. It is easy to perform having a good compliance. In this positional therapeutic maneuver by assuming specific positions of the patients the debris in the semicircular canal first move to apex and then towards the exit of the canal followed by the fall of the debris into the utricle where it cannot stimulate vertigo. Many ENT surgeons employ vestibular sedatives in the management of positional vertigo. But still controversy remains over the most effective management of positional vertigo.

METHODOLOGY

It is a Quasi experimental study and was conducted in ENT Department PAF Hospital Mushaf Base Sargodha from 1st February 2012 till 30th July 2012. Age range of patients was 30-75 years, belonging to both genders. Inclusion criteria were the presence of vertigo lasting for few seconds having positional element. Patients with history of ear discharge and diagnosed cases of cervical spondylosis were excluded from the study.

The study was conducted after taking written permission from hospital ethical committee. All the patients were asked in detail about vertigo and associated symptoms. Detailed ENT

1. Associate Professor
ENT Consultant,
Al-Nafees Medical College & Hospital,
Isra University, Islamabad Campus, Islamabad
2. ENT Consultant,
PAF Hospital Mushaf Base Sargodha
3. ENT Consultant
CMH Muzaffarabad

Correspondence to:

Muhammad Jamalullah
Associate Professor
ENT Consultant,
Al-Nafees Medical College & Hospital,
Isra University, Islamabad Campus, Islamabad
E-mail: jamalullahm@gmail.com

examination was performed. The diagnosis of BPPV was confirmed by Dix Hallpike test. Informed written consent was taken and the patients were divided into two equal groups by randomized sampling. Group A was given vestibular sedative i.e. prochlorperazine (stemetil) 10 mg tablet after every eight hours for one week.

Semont maneuver was employed for the treatment of group B. Examination of patients was carried out on 3rd, 7th and 30th day and efficacy of treatment was recorded.

SPSS Version 15 was used for statistical analysis of data. Analysis of variables like age, sex etc was done. Frequency and percentage were used for qualitative data. Standard deviation and mean were calculated for numerical data e.g. age. Both groups were compared over the criteria of freedom from vertigo on Dix Hallpike test. Chi square test was employed for the comparison of both groups. P value of equal to or less than 0.05 was taken as significant.

RESULTS

Group A was treated with vestibular sedative. In this group Dix Hallpike test became negative in three patients (10%) (Table-I)

TABLE-I: FREEDOM FROM VERTIGO ON DAY 3 (n=60)

Patients	Freedom From Vertigo on Dix Hallpike Test		Total
	Yes	No	
GROUP A	3(10%)	27(90%)	30
GROUP B	19(63.3%)	11(36.6%)	30

TABLE-II: FREEDOM FROM VERTIGO ON DAY 7 (n=60)

Patients	Freedom From Vertigo on Dix Hallpike Test		Total
	Yes	No	
GROUP A	6 (20%)	24(80%)	30
GROUP B	22(73.33%)	8(26.66%)	30

TABLE-III: FREEDOM FROM VERTIGO ON DAY 30 (n=60)

Patients	Freedom From Vertigo on Dix Hallpike Test		Total
	Yes	No	
GROUP A	8 (26.66%)	22(73.33%)	30
GROUP B	25(83.3%)	5(16.7%)	30

• **Group A: Treated with Vestibular Sedative**

• **Group B: Treated with Semont Maneuver**

Since p value is less than 0.05 so Semont maneuver is more effective than vestibular sedative.

on third day and from the remaining twenty seven patients (90%) three more patients(20%) further became free from vertigo on the Dix Hallpike test on day seven(Table - II). After one month Dix Hallpike test was negative in eight patients (26.6%) (Table - III).

In Group B, Semont maneuver was used to treat the patients. In this group Dix Hallpike test became negative in nineteen patients (63.3%) on third day (Table - I) and from the remaining

eleven patients (36.6%),three patients that is total twenty-two (73.3%) further became free from vertigo on the Dix Hallpike test on day 7 (Table - II). After one month Dix Hallpike test was negative in twenty five patients (83.3%).

Chi square test was used for the comparison of both groups. P value was less than 0.05 on day three, seven and after one month. Hence the results clearly indicated that Semont maneuver has greater efficacy as compared to vestibular sedative in the treatment of benign positional vertigo (Table - III).

The patients were in the age group ranging from thirty years to seventy five years. The mean age incidence was 45.14 years with a standard deviation of 9.10.

DISCUSSION

Vertigo is a frequent complaint among the patients of adulthood and old age group. Many patients kept on roaming in different specialties. Once correctly diagnosed, these patients can be offered specific treatment modalities with very good results. Many trials have been carried out throughout the world to see the outcome of different treatment maneuvers for BPPV. Vaz Garcia⁷ steered his research by including 175 individuals from both gender. All these patients were diagnosed case of BPPV and were offered Semont maneuver. He concluded that after one week of treatment, 79% patients became symptom free. This result was comparable with that of our study. Pospeich⁸ took 46 cases of BPPV and compare the effectiveness of Semont and Epley maneuvers. 24 cases were treated by Semont maneuver and 62% of patients became symptom free. The result reflected considerable outcome of the first method, but in our work we ended with even more better results. Naimatullah and colleagues⁹ declared 70% of their patients became symptom free by Semont maneuver. In another study by Anagnostoxa, success rate of 67% was found with treatment by Semont maneuver¹⁰. Female predominance (58.3%) was observed in this study which is also according to the literature reports. Aranda Moreno and Jáuregui-Renaud¹¹ compared the efficacy of Epley maneuver and the ' Semont maneuver in the management of BPPV. The study revealed more than 90% cure rate of BPPV by the use of these maneuvers. Di Girolamo¹² also achieved excellent results of Semont maneuver in patients of BPPV and assessed the outcome by dynamic posturography. In our study dynamic posturography was not used. In this study the mean age of patients was 45.14. Tinnitus and hearing loss was seen in 2.6% and 8.3% of the patients respectively. These features were most probably representing the co-morbidities of older age. Vestibular suppressants did not affect the vertigo associated with this condition. At most, they may reduce the motion sickness, which frequently accompanies the attacks. Froehling and colleagues in a randomized controlled trial study adopted the canalith repositioning procedure for the treatment of Benign Paroxysmal Positional Vertigo with excellent results¹³. BPPV is the most common cause of vertigo, and disequilibrium and unsteadiness can be the result of vestibular and/or nonvestibular pathology. Antihistamine (meclizine

hydrochloride) is effective for the symptoms of nausea and vomiting associated with dizziness¹⁴

Lot of work has been done and the clinician came to the point of view that repositioning maneuver of otoliths remain an effective and non-invasive, simple technique for treating the patients of positional vertigo. Before these techniques, vestibular sedatives were in common use, but without the promising results. Still some controversy is there whether these maneuvers in fact have some outcome other than central tolerance. In addition some unyielding cases and divergent of the disease remained a remarkable issue.¹⁵

About 89% of patients with stubborn positional vertigo had some anatomical variations of the semicircular canals in contrary with the healthy individuals, but there was no harmony with these variants and the type of nystagmus. Minor differences in the diameter, length and width of the canals may have a predisposition to this disease with the resultant failure of treatment. In utricular dysfunction there may be misrepresentation of visual horizontal due to ocular torque as in cases of vestibular neuritis. In patients of positional vertigo mensuration of the visual horizontal was deviant in 42% of cases who were not offered the treatment, 15% after undergoing repositioning and 8% two weeks afterward giving clue of initial utricular dysfunction and its potential reparation from the revert of otoliths.¹⁶ Recent progressions in the imaging techniques may at the very end enable in vivo relationship. 3-dimensional, T2 weighted imaging techniques of MRI with steady-state acquisition sequences can now reveal some more knowledge and minor details of alteration in the semicircular canals, like narrowed segments and filling defects.¹⁷

This study was done to compare the two modalities of treatment for BPPV and to assess the efficacy of these methods, to provide a valid reason for implication of the most effective method, so that the patients may get rid of their devastating symptoms.

CONCLUSION

BPPV is one of the most common cause of vertigo. It is diagnosed by Dix Hallpike test. Semont maneuver has more efficacy than vestibular sedative in management of BPPV. All the patients of Benign Paroxysmal Positional Vertigo must be offered this simple and noninvasive method.

REFERENCES

1. Uneri A. Migraine and benign paroxysmal positional vertigo: an outcome study of patients. *Ear Nose Throat J* 2004; 83:814-5.
2. Gordon CR, Joffe V, Levite R, Gadoth N. Traumatic benign paroxysmal positional vertigo: diagnosis and treatment. *Harefuah* 2002; 141:944-7
3. Atacan E, Sennaroglu L, Genc A, Kaya S. Benign paroxysmal positional vertigo after stapedectomy. *Laryngoscope* 2001; 111:1257-9.
4. Sauvage JP, Aubry K, Codron S. Benign paroxysmal positional vertigo of the horizontal and superior semicircular canals *Rev Laryngol OtolRhinol (Bord)*. 2005; 126: 257-62.
5. Mchael G, George G B, Martin J B, RAY C, John H, Nicholos S et al. Evaluation Of Balance. Adolfo M B:Scott Browns Otorhinolaryngology, Head And Neck Surgery; 2008; 7(3):3721.
6. Chen Y I, Zhuang J, Zhang L, LiY, Jin Z, zaho z. et al. Short Term Efficacy Of Semont maneuver For BPPV. *Otol Neurotol*. 2012;3(7):1127-30
7. Vaz Garcia F. Treatment failures in benign paroxysmal positional vertigo. Role of vestibular rehabilitation. *Rev LaryngolOtolRhinol*2005; 126:271-4.
8. Pospeich L. Rehabilitation of benign paroxysmal positional vertigo in the experience of the Wroclaw Clinics. *Otolaryngol Pol*. 2000; 54:557-60.
9. Naimatullah, Yousaf N. Single treatment approaches to benign paroxysmal positional vertigo. *Pak of Otolaryngology* 2004; 20:3-5.
10. Ana G E, Stanboulis E, Kararizou E. Canal Conversion After Repositioning Procedures. *J Neurol*. 2014; 261(5):866-9.
11. Aranda-Moreno C, Jáuregui-Renaud K. Epley and Semont maneuvers in the treatment of benign paroxymal postural vertigo. *Gac Med Mex*. 2000; 136:433-9.
12. Di Girolamo S, Paludetti G, Briglia G, Cosenza A, Santarelli R, Di Nardo W. Postural control in benign paroxysmal positional vertigo before and after recovery. *Acta Otolaryngol*. 1998; 118:289-93.
13. Froehling DA, Bowen JM, Mohr DN, Brey RH, Beatty CW, Wollan PC, et al. The canalith repositioning procedure for the treatment of benign paroxysmal positional vertigo: a randomized controlled trial. *Mayo ClinProc* 2000; 75: 695-700.
14. Guo Xiang D. Benign paroxysmal. Positional vertigo. *J Neurosci Rural Pract*. 2011; 2(1):109-10
15. Niazi S B, Bhatti M A, Tahir M. BPPV-Efficacy of vestibular sedatives versus Epleys maneuver. *Professional Med J*; 2012; 19(3)1-5
16. Iwasaki S, Chihara Y, Ushio M, Ochi A, Murofishi T, Yamasoba T. "Effect of the canalith repositioning procedure on subjective visual horizontal in patients with posterior canal benign paroxysmal postional vertigo," *Acta Otolaryngol*. 2011; 131; 41-5.
17. Horii A, Kitihara T, Osaki Y. "Intractable benign paroxysmal positional vertigo: long-term follow-up and inner ear abnormality detected by three-dimensional magnetic imaging," *Otology & Neurotology*. 2010; 31; 250-5.