



Effectiveness of Epley's Manoeuvre in Benign Paroxysmal Positional Vertigo- A Prospective Study

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Abstract

Introduction: *Benign Paroxysmal Positional Vertigo (BPPV) is one of the most common causes of vertigo. The patient complains of brief but severe episodes of rotatory vertigo lasting less than a minute upon sudden changes in head position.*

Aim of the study is to find the effectiveness of Epley's manoeuvre in BPPV.

Materials and Methods: *The prospective study presented here includes analysis of 63 cases of positional vertigo in a tertiary teaching hospital over a period of 2 years. The cases were analysed using simple clinical methods except in a few cases where we needed investigations to detect rare pathologies. A control group was not included in this study as we thought it to be unethical not to provide a treatment measure with such a great success rate in literature.*

Results: *Results obtained were tabulated and analysed. After 2 weeks, we got 93.7% success rate. On repeating the manoeuvre in recurrent cases success rate came up to 100%.*

Conclusion: *Epley's manoeuvre can be used very effectively to treat BPPV. This was so simple and effective that we got nearly 100% success rate after 6 months as we repeated the manoeuvre in recurrent cases.*

Keywords: *Epley's manoeuvre, Benign Paroxysmal Positional Vertigo.*

Introduction

Vertigo is a very common symptom in clinical practice. It is also a confusing condition. Often it is very difficult for the patient to describe the condition. The overwhelming vertigo, the awful sickness and the turbulent eye movements – all enhanced by the slightest movement of the head – combine to form a picture of helpless misery that has few parallels in the whole field of injury and disease.

Benign Paroxysmal Positional Vertigo (BPPV) is one of the most common causes of vertigo. It is often sudden in onset. The patient complains of brief, but severe episodes of rotatory vertigo

lasting less than a minute, upon sudden changes of head position, especially on lying down and turning towards the affected ear. The complaint may last for months or years, during which time the natural history of the disorder is that of relapses and remissions with eventual complete recovery in the otherwise healthy patients.

Present study was carried out to find the effectiveness of Epley's manoeuvre in BPPV.

Materials and Methods

This study was done at a tertiary centre over a period of two years. The sample size was determined by a pilot study conducted in the

hospital and then finding the size using statistical methods.

The cases were analysed using simple clinical methods.

The study included all cases of positional vertigo that came to our department during this period. A total of 63 cases were studied. In all cases, a detailed history and general examination were done, followed by ENT examination. All the systems were examined with the nervous system in detail. Baseline investigations, X-Ray cervical spine, PTA and caloric test (cold) were done for all.

Sophisticated techniques of investigations were not done partly due to the non availability of adequate facilities in a state government run hospital and also due to the fact that most of our patients were from the lower socio economic group.

In three cases, where there were doubts regarding the diagnosis we asked the patients to take CT and MRI scans. The positional test was done on those patients for whom all other causes for the symptoms were excluded.

Positional test positive cases were treated by Epley’s manoeuvre. Cases were reviewed after two weeks and after six months. In between they were asked to report to our Out Patient Department, if symptoms recurred.

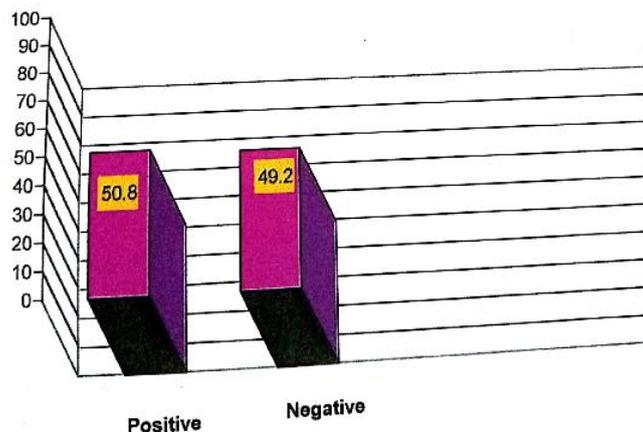
Results

Among the 63 cases with symptoms of positional vertigo, 32 cases were positive on doing Dix Hallpike test. For all the 32 cases Epley’s manoeuvre was done and 93.7 % success rate was obtained after two weeks, For two patients who developed recurrence Epley’s manoeuvre was repeated which led to complete resolution of symptoms in a six month follow up.

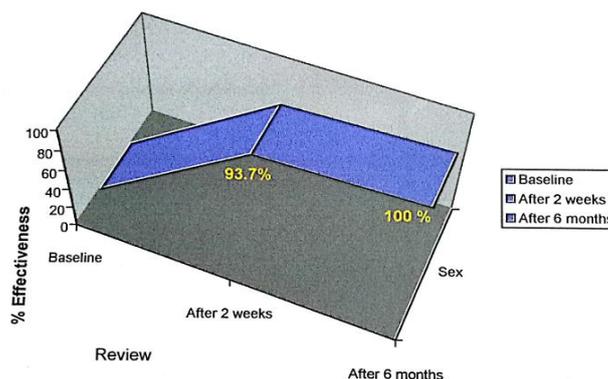
Result of Positional Test

		Number	Percent
PT	+ VE	32	50.8
	- VE	31	49.2
Total		63	100.0

Percentage Distribution of Result of Positional Test



Effectiveness of Epley's Manoeuvre



Discussion

In this study, 63 cases presented with symptoms of positional vertigo. Of these, 32 cases turned out to be BPPV. Among the BPPV cases 13 cases had history of minor head trauma. Though trauma is a common cause of BPPV, most of the cases are idiopathic. For all the 32 cases we did Epley’s

manoeuvre and 93.7% success rate was obtained after two weeks. Epley's original study demonstrated 97.7 % success rate. For the two patients among the thirty-two cases who developed recurrence after two weeks, a repeat Epley's manoeuvre was done which led to complete resolution of symptoms in a six month follow up. The natural history of BPPV is incompletely understood. Although spontaneous resolution of symptoms is common it is also clear that some patients have frequent recurrences.

Parnes and Price-Jones treated 38 patients, 69% exhibited a complete early response, 10 % improved, and 10% experienced failures and 10% were lost to follow up. Harvey et al reported on 25 patients, 44% had a complete early response; 24 % improved and 32% had failures. In a randomised prospective trial Lynn et al 31 demonstrated an 89 % response rate after one treatment as compared with a 26.7 % response rate in a control group. Blakley 4 reported on 16 patients, 44% had complete early response, 50% reported improvement but not complete resolution of symptoms.

For the two patients among the thirty-two cases who developed recurrence after two weeks, a repeat Epley's manoeuvre was done which led to complete resolution of symptoms in a six month follow up. The natural history of BPPV is incompletely understood. Although spontaneous resolution of symptoms is common it is also clear that some patients have frequent recurrences. Four new recurrences developed in a six month follow up for which Epley's manoeuvre was repeated. An enquiry over telephone was done after two weeks. There were no further complaints during this period.

In an article adapted from the OCNA and published in the Kerala Journal of Otolaryngology and Head and Neck Surgery, August 1998, Vol.4, No.2, complete resolution is defined as negative Dix Hallpike test on follow up and no positional vertigo for one month.

The value of mastoid vibration was suggested by Li 29. But Levy-Reis et.al²⁸ reported equivalent

results after performing the manoeuvre with and without mastoid vibration. In our study vibrator was not used. Our patients were advised to remain in head upright position for 48 hours.

Epley recommended that patients remain in head upright position 48 hours after repositioning to prevent loose debris from assuming a dependent position in the posterior semicircular canals.

Some has advocated the use of cervical collars. Although use of post procedure instructions to remain upright seems logical, in reality, there is not sufficient data available to determine whether maintaining an upright position after repositioning is effective; how long it is necessary; or whether patients are actually able to comply with these instructions.

Difference in the reported success may also be due, in part, to difference in the classification systems used to define success and failure. Many authors have relied primarily on the patient's self report of symptoms. Some consider negative Dix Hallpike test as the gold standard of success. But the intensity of nystagmus and vertigo induced by the test may vary from day to day and can be affected by performance factors such as the speed and plane of head movement during the test. Infact, it is advisable not to rely solely on the results of Dix Hallpike test to define success and failure. Epley defined recurrences solely as renewed symptoms after an asymptomatic month. Our patients were advised to remain in head upright position for 48 hours. They were advised to use cervical collar, if available, just to make them aware of the condition and to avoid sudden head turning for one week. They were reviewed after two weeks. Recurrences were defined based on symptoms as well as a positive Dix Hallpike test.

Precautions and complications of Epley's manoeuvre

1) Aggravation of existing medical problems

Appropriate precautions should be taken in those with hypertension, neck and back problems.

2) Canalith jam

Occasionally during the head manoeuvres, there can be a sudden development of rapid nystagmus that persist even with change of head position. The patient experiences intense vertigo and tends to panic. This may be due to jamming of the canaliths while they are migrating from a wider to narrower segment.

It is cleared by turning the head 180 degrees from the position in which the jam started, following the plane and slow phase of nystagmus and reapplying the oscillator so that the jammed canaliths will gravitate back out of the narrowed area.

3) Reverse migration

If during the positioning sequence, the fast phase direction of the induced nystagmus is counter to that expected but its rotational axis is correct, the canaliths are probably migrating in the wrong direction. The positioning sequence should be restarted after the target canal and technique are confirmed to be appropriate.

4) Conversion to another canal

A change in the rotational axis of the induced nystagmus during the procedure indicates a side tracking of the canaliths into a different canal. (Less likely, it may be due to contra lateral involvement) Most commonly, this conversion occurs from the posterior to the horizontal canal. If this new nystagmus profile persists, the operator should change to the appropriate positioning sequence.

Conclusion

Of the 63 cases studied here, nearly half of them turned out to be BPPV for which Epley's manoeuvre was found to be very effective. A control group was not included as it was thought to be unethical not to provide a treatment measure which had such a great success rate in literature. In this study, BPPV was found to be more in middle aged house wives. From the 32 cases of BPPV, 13 had cases of minor head trauma in the

recent past. The BPPV cases treated with Epley's manoeuvre were reviewed after two weeks and we got a success rate of 93.7 %. On repeating the manoeuvre for those with recurrence, the success rate came upto 100 %

Finally it may be concluded that BPPV is one of the major causes of positional vertigo and that it could be effectively treated with Epley's manoeuvre

References

1. Ballenger JJ, Douglas E. Mattox. Otorhinolaryngology Head and Neck Surgery 15th edition p 1125-1129
2. Baloh RW, Honrubia V, Jacobsen K. benign paroxysmal positional vertigo: clinical and oculographic features in 240 cases. Neurology 1987; 37:371-378
3. Baloh RW, Yue Q, Jacobsen KM, Honrubia V. Persistent direction-changing positional nystagmus; another variant of benign positional nystagmus? Neurology 1995; 45: 1297-1301.
4. Blakley BW. Randomised controlled assessment of the canalith repositioning manoeuvre Otolaryngol Head Neck Surg 1994; 110: 391-6
5. Brandt T, Daroff RB. Physical therapy for benign paroxysmal positional vertigo. Arch Otolaryngol 1980; 106: 484 – 5.
6. Charles W Cummings, Jai H Ryu, Dietrich WF Schwarz. Otolaryngology Head and Neck Surgery. 1990 vol 4 (Ed. Lee A. Harker) BI publications p 2609-2672; 2679-2718
7. Citron L, Hallpike CS. Observations upon the mechanism of positional nystagmus of the so called "benign paroxysmal type". J Laryngo lOtol 1956; 70:253-259.
8. Dix MR. The pathology, symptomatology and diagnosis of certain common disorders of the vestibular system. Ann Otol Rhinol Laryngol 1952; 61 : 987-1016

9. Epley JM. New dimensions of benign paroxysmal positional vertigo. *Otolaryngol Head Neck Surg* 1980; 88: 599-605.
10. Epley JM. Particle repositioning for benign paroxysmal positional vertigo. *OtolaryngolClin North Am* 1996 Apr;29(2): 323-31.
11. Epley JM. Positional vertigo related to semicircular canalithiasis. *Otolaryngol Head Neck Surg* 1995;112: 154-161.
12. Epley JM. The canalith repositioning procedure: for treatment of benign paroxysmal positional vertigo. *Otolaryngol Head Neck Surg* 1992;107: 399-404.
13. Gacek RR. Further observations on posterior ampullary nerve transection for positional vertigo. *Ann Otol Rhinol Laryngol* 1978; 87:300-305.
14. Levy-Reis I, UddlinMK,Hain TC. Vibration does not improve the results of the Epleymanoeuvre, *Neurology* 1997; 48(Suppl): A134-5
15. Li JC, Mastoid oscillation: a critical factor for success in the canalith repositioning procedure. *Otolaryngol Head Neck Surg* 1995; 112-670-5
16. Nylen CO. clinical study on positional nystagmus in cases of brain tumour. *Acta Otolaryng* 1931; (suppl 15) : 1-111
17. Parnes LS, Price-Jones RG. Particle repositioning manoeuvre for benign paroxysmal positional vertigo. *Ann Otol Rhinol Laryngol* 1993: 102:325-31
18. Schuknect HF. Cupulolithiasis. *Arch Oto Laryngol* 1969;90:765-778
19. Schuknecht HF, Ruby RRF. Cupulolithiasis. *Adv Oto-Rhino-Laryngol*1973; 20: 434-443
20. Scott Brown's *Otolaryngology* sixth edition vol 2 (Ed Dafydd Stephens) Reed Educational and Professional Publishing Ltd 1997(p 2/20/1- 2/21/34)