

Comparison of Effectiveness of Epley's Maneuver only and Epley's Maneuver plus Betahistine in the Management of Benign Paroxysmal Positional Vertigo

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ABSTRACT

Objectives: To compare the effectiveness of Epley's maneuver only and Epley's maneuver plus betahistine in the management of benign paroxysmal positional vertigo in a tertiary care hospital of Peshawar.

Methodology: This comparative study was conducted in medical teaching institution, Khyber teaching hospital Peshawar, from 1st April 2015 to 31st March 2016. We divided our target patients in two groups. In group A where Epley's maneuver alone was performed for the management of benign paroxysmal positional vertigo, while in group B Epley's maneuver plus betahistine combined.

Results: A total of 94 patients were enrolled in the study. Group A 29(62%) were females and 18(38%) were males, while in group B 27(57.45%) were females and 20(42.53%) were males. The mean age of patients was 35 years of age. We found that Epley's maneuver plus betahistine is more effective for the management of benign paroxysmal positional vertigo (78.7% effectiveness in Group B Vs 61.7% in group A where only Epley's alone applied).

Conclusion: Our study shows that Epley's maneuver plus betahistine is more effective for the management of benign paroxysmal positional vertigo than Epley's maneuver alone.

Key words: Epley's maneuver, Epley's maneuver plus betahistine, benign paroxysmal positional vertigo.

INTRODUCTION

The most common peripheral vestibular condition is the benign positional vertigo (BPV). Vertigo is an illusion of movement and a vestibular proprioceptive system condition. Benign paroxysmal positional vertigo (BPPV) is characterized as an abnormal motion sensation that occurs in some place of the body or head¹. In this case, calcium carbonate particles known as otoconia, usually adhered to the utricle and saccule, are dissipated into the semicircular canals². The patient has spinning sensations that normally last less than one minute. In general, this form of vertigo is caused by a sudden head position shift in relation to gravity³.

BPPV was first identified in 1897 by Adler and then in 1992 by Barany. A patient with this condition usually has vertigo, while he is in or out of bed, turns in bed, turn his head back, or bends forward.³ This disorder is diagnosed clinically by the Dix-Hall Point Maneuver office positional examination. Most patients are treated successfully with the so-called Epley maneuver⁴.

The posterior semicircular canal accounts for around 90% of BPPV cases.⁵ Despite seemingly successful repositioning maneuvers, some patients, particularly elderly and nervous, may continue to have dizziness and imbalance. This may be due to systemic disorders that accompany or predispose the disease process⁵. Betahistine has previously been shown to increase the quality of life (QOL) of patients with peripheral vestibular vertigo by decreasing attack and dizziness and by improving overall conditions. However, no clinical evidence

is available to evaluate its impact on BPPV treatment⁵. Although BPPV often resolves spontaneously over time, the maneuver of Epley has shown that recovery is accelerating.⁶

The maneuver of Epley is successful, patient well tolerated and time-consuming. It can be done effectively by a healthcare provider in a clinic.⁶ 80 (92 percent) in 87 BPPV patients were dramatically improved by the full ceasefire with an epley maneuver alone⁷. Although pathophysiology and BPPV treatment are quite easy, this is typically very late⁸. In a second analysis, cure rates and overall successful rates of the treated group have been found to be higher than the control group after a week of treatment alone [78.57% vs. 50.00% and 92.86% vs. 80.95% P < 0,05 respectively].⁹ The purpose of this study is to see the successful role of betahistine in the treatment of benign paroxysmal vertigo patients, in addition to the maneuver by Epley.

METHODOLOGY

A randomized control trial was conducted in the Department of Otorhinolaryngology and Head & Neck Surgery, Khyber Teaching Hospital Peshawar, from 1st April 2015 to 31st March 2016. Non-probability methods used in sample selection and patients split into two categories. Group A (Epley only) 47 patients, Group B (Epley's + betahistine) 47 patients. 47 patients.

Both adult patients with vertigo complaints as the only short-lived symptom for less than one minute diagnosed with the Dix-Hall picking maneuver were included.

Patients of vertigo for more than one minute and other ear effects, such as hearing loss, tinnitus and aural fullness have been removed. Also omitted were patients with Meniere's disease and acute peripheral vestibulopathy.

The study began after approval by the Ethical and Research Hospital Committee. Both patients received informed consent before the operation. Patients were divided by random number table into two groups i.e. group A and group B. Group A patients were subjected to Epley's maneuver only when Group B in addition to Epley's maneuver was given oral betahistine. Betahistine was administered to group B in tablet form at a dosage of 48 mg daily in two 1-week dose divisions. After 1 week care, all patients were followed and the efficacy tested by provocative role testing (Dix-Hall pike).

Data analyzed with version 15.0 of SPSS. Age-like quantitative variable is stated in average \pm SD. As

frequencies and percentages, qualitative variables such as gender and effectiveness are registered.

RESULTS

The research involved a total of 94 patients. The majority of the women were women in group A (Epley's only) while 27 (57.45 %) were women and 20 (42.53 %) were men in group B (Table 1).

The age of the patients is between 16 and 65 years, with an average of 35 years. The majority of patients in Group A were aged between 26 and 35 years 36 percent while the highest number of patients (27 percent) in Group B was aged between 46 and 55 years (Table 2).

Epley has been shown to be more efficiently and efficiently administering benign paroxysmal vertigo in the dosage of 48 mg betahistine per day at two separate doses (78.7 % efficiency in Group B Vs 61.7 % in Group A, when only Epley has been used alone). (Table 3).

Table 1. Gender wise distribution of patients in both cadres.

Sex	Group B(Epley's manoeuvre plus oral betahistine)		Group A (Epley's manoeuvre alone)	
	Total	PERCENTAGE	Total	PERCENTAGE
Female	27	57.45	29	61.70
Male	20	42.55	18	38.30
Total	47		47	

Table 2. Age wise distribution of patients.

Age	Group B(Epley's manoeuvre plus oral betahistine)		Group A(Epley's manoeuvre alone)	
	Total	Percentage	Total	Percentage
16-25	2	4.26	6	12.77
26-35	17	36.17	12	25.53
36-45	3	6.38	8	17.02
46-55	14	29.79	13	27.66
56-65	11	23.40	8	17.02
Grand Total	47		47	

Table 3. Effectiveness of different approaches towards the management of benign paroxysmal positional vertigo.

Efficiency	Group B(Epley's maneuver plus oral betahistine)		Group A(Epley's maneuver alone)	
	Total	PERCENTAGE	Total	PERCENTAGE
No	10	21.28	18	38.30
Yes	37	78.72	29	61.70
Grand Total	47		47	

DISCUSSION

BPPV is usually an elderly illness, but it may take place at any age. Several major studies have shown that can happen in the mid-50s. Vertigo is mostly caused by labyrinthitis and vestibular neuronitis in young people. The former has a hearing loss although it is usual in the latter hearing. The ratio of women and men is 2:1. Benign Positional Vertigo (BPV) incidence is 64 cases per 100,000 population annually (conservative estimate) ¹⁰.

There are two BPPV versions. The first is caused by the rear semi-circular and the other is caused by the lateral semi-circular canal. The most frequently found posterior BPPV occurs in 85-95% of cases¹¹. BPPV can be diagnosed and treated by multi-specialty clinicians. There are substantial differences in the practice of BPPV management among practitioners of different medical specialties¹². These differences include both diagnostic and treatment methods. It is well known that the most important treatment options for BPPV and post-semicircular channel for adequate repositioning and rehabilitation exercises are BPPV can be handled effectively with a single Epley

maneuver¹³⁻¹⁴. In this context the objective of our analysis was not to equate the effectiveness of Epley's Golden Standard with an anti-vertiginous medicine such as Betahistine but to see any additive effect of Betahistine against the Epley Vertigo Resolution Maneuver. Some studies show that, despite repositioning, vertigo can continue in 20 % of patients for up to 3 months¹⁴⁻¹⁵. In order to improve this, several studies have been conducted to see if betahistine is additive to epley's maneuver for BPPV symptom resolution as Betahistine increases labyrinth microcirculation and reduces neuronal activity in vestibular receptor cells, afferent neurons and vestibular nuclei ¹⁶⁻¹⁸. Mira et al¹⁹ showed that betahistine was beneficial for the improvement of the quality of life at a dosage of 32 mg per day in patients with recurring or persistent BPPV. Della Pepa et al²⁰ indicated that betahistine had effectively reduced the symptoms of vertebrobasilar insufficiency, chronic or persistent BPPV, if administered in doses above 32 mg a day. In our research, we found that the management of the BPPV by Epley plus betahistine is

more effective and efficient (78.7 % effectiveness in Group B Vs 61.7 % in group A).

Study limitations: There were several factors limiting the reach of this report. Firstly, the follow-up cycle was just one week. Much longer follow-up could have been helpful in the evaluation of any symptom recurrence as BPPV is episodic. Secondly, we did not include a control group without proper comparison care, but we assumed that such a control group would be unnecessary because ample published evidence shows that the handling of Epley's was better than placebo²¹.

CONCLUSION

In conclusion, Epley's maneuver with betahistine is more successful than Epley's maneuver alone to handle benign paroxysmal positions. However, we are recommending additional randomized control trials for large populations of various organizations.

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