

Epley's Manoeuvre – Its Role In Management of BPPV – A Prospective Study.

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Abstract: Vertigo is a disorder involving different discipline of medical science . Thus, during management the approach involves different branches of medicine. ENT and Head and Neck Surgery manages vertigo of peripheral vestibular apparatus. Benign Paroxysmal Positional Vertigo is one of the common presentation in outdoor clinics of ENT department. A study was conducted to approach cases of vertigo in a systematic pattern. Broadly, vertigo is categorized as central and peripheral. Through a detailed evaluation these cases are differentiated. In this Study, only those cases attending OPD with pathology related to ENT and Head Neck discipline were taken into account. BPPV forms the commonest cause amongst these cases. BPPV is easily diagnosed from history and clinical examination. At times ,doesn't involves extensive investigations. This study involves managing these cases of BPPV by Epley's manoeuvre and their follow up. Epley's Manoeuvre is simple, cost effective, non invasive and easy to learn. Being easy to diagnose and manage, emphasis is made in this study to highlight the incidence of BPPV cases in ENT OPD and their effective management even in peripheral and remote health establishments.

Keywords: Vertigo, Benign Paroxysmal Positional Vertigo, Vestibular apparatus and Epley's Manoeuvre.

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I. Introduction

BPPV – Cupulolithiasis, canalolithiasis was described by Schuknecht in 1962, single most cause of peripherally induced vertigo. It is characterized by rotational vertigo induced when patients shifts his or her body position especially when turning over in bed or when extending the neck. With change of position there is a period of latency for few seconds before vertigo appears. Vertigo lasts for few seconds and then disappears. Vertigo is not associated with hearing impairment or tinnitus. Sometimes associated with nausea and vomiting or tinnitus. It is a self limiting condition and disappears after few weeks or months. However in few individual the condition lasts for longer period.

This condition is caused by detachment of otoconia from the utricle and floats freely in the endolymph. These, with endolymph movement , affects the cupula of the posterior semicircular canal , hence named Cupulolithiasis. Histologically they are basophilic in staining properties .Similarly free floating particles in posterior semicircular canal has been named as canalolithiasis. Otoconia are crystals of calcium carbonate that are normally found embedded in the gelatinous otolithic membrane of utricle and sacculle. BPPV may occur following head trauma or vestibular neuronitis. BPPV may also occur in inner ear diseases such as Meniere's disease or Cogan Syndrome. Women are more affected than men. This can occur in any age group, but mostly seen in elderly with a mean age of 54 years approximately. Posterior semicircular canal is commonly affected and anterior (superior) semicircular canal is rarely affected. The characteristic sign of BPPV is nystagmus following Dix – Hallpike's manoeuvre. There is latent period followed by vertigo with nystagmus . Vertigo rarely lasts more than a minute. Vertigo ceases or fatigue out on repeated manoeuvres due to habituation. BPPV is a clinical diagnosis which is made from history and thorough physical examination. BPPV is effectively managed by physically relocating the displaced otoconia from the superior semicircular canal to the vestibule by Epley's manoeuvre. The manoeuvre is performed after Dix and Hallpike test . Epley's manoeuvre is a series of steps whereby the head is rotated along different positions with the patients lying down and the head suspended beyond the edge of the bed / table.

The principle is to bring the displaced otoconia back into the vestibule. Studies shows that symptoms of BPPV disappears in 80% of patients treated with Epley's manoeuvre both effectively and rapidly. Following

Epley's manoeuvre, these patients were advised to do vestibular rehabilitation therapy (VRT) . It is seen that Epley's manoeuvre followed by VRT greatly reduced the recurrence rate.

II. Aims and Objectives

1. To find out the prevalence of vertigo.
2. To determine the incidence of BPPV amongst vertigo patients attending ENT department.
3. To determine the efficacy of Epley's manoeuvre in management of BPPV.

III. Materials and Methods

This study was carried out in ENT department of Tezpur Medical College and Hospital , Tezpur from June 2016 till June 2018. All the cases presenting with vertigo attending ENT OPD were thoroughly evaluated. Both male and female patients above 18 years were included in the present study. Informed consent was taken in all the cases. Detailed history was taken as per as proforma prepared, complete ENT and Systemic examination was done. Finally Dix and Hallpike manoeuvre was done to diagnose BPPV. Patients have history of episodes of vertigo , aggravated with change in position of head , lasting for less than a minute with positive Dix Hallpike test.

IV. Exclusion Criteria

- a) Cervical Spondylosis
- b) Associated cardiovascular diseases.
- c) Cases of CVA.
- d) Pregnant lady.

After selecting the cases , Epley's manoeuvre was done in all the cases as outdoor procedure. Some patients with severe presentation were subsequently admitted and antivertiginous medicines advised following Epley's manoeuvre . The patients were regularly followed for one year at regular interval . Some patients needed Epley's manoeuvre for the second time and few underwent the Epley's manoeuvre for the 3rd time. After 48-72 hours , these patients were again reviewed and vestibular rehabilitation exercises were given.

V. Results and Observations

During the period of our study, a total of 59 cases attended vertigo clinic. These cases either attended ENT OPD or were referred from medicine OPD after ruling out other causes of vertigo. A thorough history was taken and were examined. Being a clinical diagnosis, BPPV cases were selected / diagnosed from history and Dix Hallpike's manoeuvre. Altogether 24 cases were diagnosed to be having BPPV (40.67%). 13 cases (54.16%) had BPPV on right and 11 cases (45.83%) had on left. 14 cases were male and 10 cases were female. In our study , the highest incidence i.e 13 cases were in the age group of 41-60 years (54.16%). No cases were detected below 20 years. These patients were advised position while sleeping and were asked to avoid a turning of head abruptly.

All these patients were reviewed after 1 week and were given vestibular rehabilitation therapy. 18 cases (75%) had recurrence free period in the subsequent visits. 4 cases (16.66%) had mild symptoms of BPPV towards the previous side and needed Epley's manoeuvre to be repeated for the second time. 2 cases (8.33%) required Epley's Manoeuvre to be repeated for the 3rd time.

VI. Figures

Fig 1. Total number of BPPV cases of the total number of patients with vertigo attending ENT OPD (BPPV 24 cases , Others 25 cases)

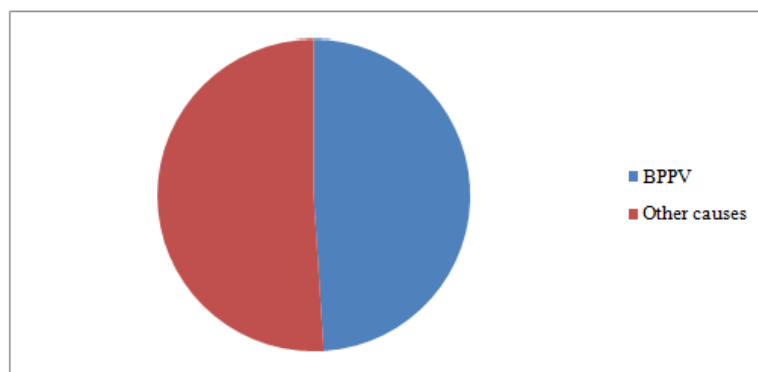


Fig 2 . Involved side (Rt. Side 13 cases, Lt. Side 11case

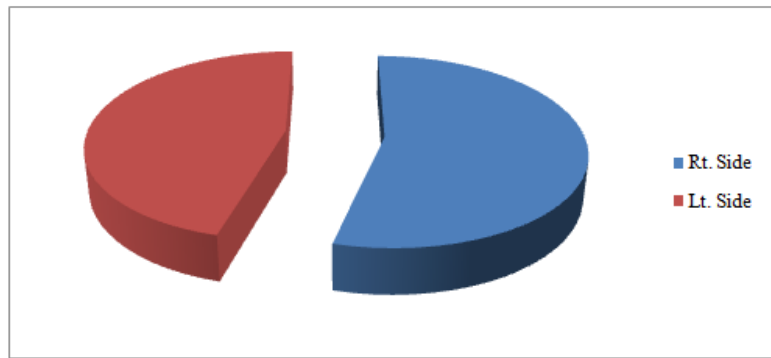


Fig : 3 Sex Distribution (Males 14 cases , Females 10 cases)



Fig 4 : Age Distribution (< 20 – Nil, 21 – 40 years – 10 cases, 41 – 60 yrs – 13 cases, > 60 years – 1 case)

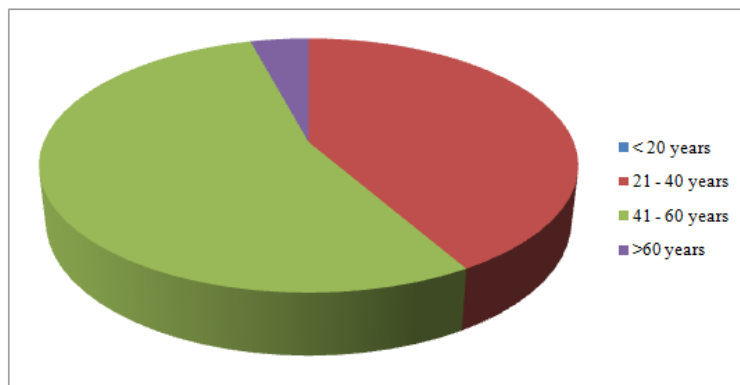
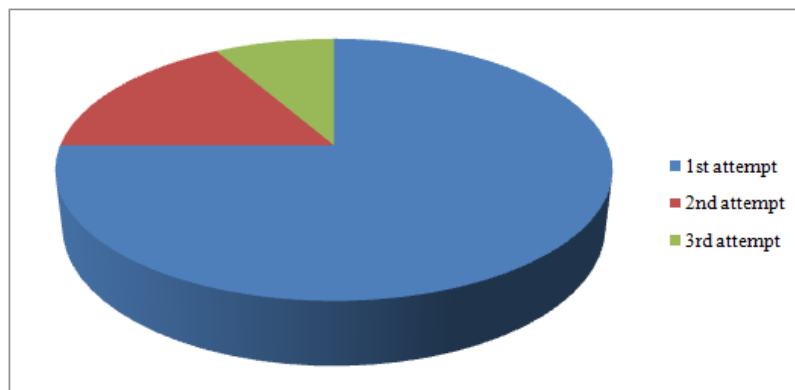


Fig : 5 Effectiveness of the Epley's Manoeuvre (1st attempt – 75%, 2nd attempt - 16.66%, 3rd attempt – 8.33%)



VII. Discussion

BPPV is one of the commonest cause of peripheral vertigo. It is self limiting disease. Epley's manoeuvre hastened up the duration. VRT greatly reduces the recurrence. The study conducted comprised of patients who attended ENT OPD with specific symptoms associated with Ear, Nose and Throat diseases and patients who were referred from Medicine and other departments after specific symptoms of a particular speciality was ruled out . The total number of patients in our study was 59 . Being a clinical diagnosis BPPV was confirmed in the OPD after thorough history taking, examinations ,audiological tests and vertigo work up. However serological and radiological investigations were advised in all cases for confirmation and to rule out vertigo of other causes.

24 cases(40.67%) were diagnosed to be having BPPV out of 59 cases. Though literature reveals that BPPV affects individuals of all age group , but common in elderly people . In our study majority of patients were in the age group 41-60 years of life. The oldest being a 76 years old male individual. No cases were detected below 20 years of age ^{1,2}. Males were seen to be commonly affected than females in our study. 13 patients have BPPV on Rt. Side (54.16%) and remaining 11(45.83%) had on left . This was seen by other researchers also that BPPV affects predominantly the right labyrinth ³. From our study we found that 75 % of patient reported benefit from first manoeuvre itself ⁴. Epley reported 90% success rate following single manoeuvre session. 16.66 % patients needed Epley's manoeuvre to be repeated twice before getting relieved of vertigo and 8.33 % patients got relieved after third session of Epley's manoeuvre. Literature reveals that Epley's manoeuvre is effective in management of BPPV. Our success rate in first session is (75%).⁵ The effectiveness of Epley's manoeuvre in treatment of BPPV was also cited by Khatri et al in a study conducted by them in 62 patients .⁶

All the 59 cases in our study were advised to restrict excessive and abrupt rotatory head movement for 48 – 72 hours and the head slightly elevated while sleeping at night . After 72 hours the cases were reviewed again and vestibular rehabilitation therapy was advised. Inclusion of VRT following Epley's manoeuvre greatly increased its efficacy and thereby its outcome. The results of unilateral BPPV of posterior semicircular canal involvement / origin is good with application of above treatment modality.⁷ Only few cases who had severe symptoms and nystagmus were prescribed antivertiginous drugs like betahistine and cinnarazine.

However , in our study no such attempts were made to determine the results following Epley's manoeuvre with or without the above medications . Above drugs were prescribed purely as secondary modality.

VIII. Conclusion

BPPV is one of the commonest cause of peripheral vertigo presenting in ENT out patient department. Seen commonly in elderly , it can affect either sex. Right labyrinth is is more affected.

A thorough clinical history and workup along with Dix Hallpike's test easily diagnose it . However to rule out comorbidity and confirm BPPV other serological and radiological tests are advised.

In our study it is established that Epley's manoeuvre is an effective mode of treatment. It is easily and can be safely executed as outdoor procedure. Our findings resembles with similar studies carried out in different institutions. This manoeuvre should be initial procedure of choice. It is cost effective and provides effective result in high percentage of cases.

The greatest advantage is that this manoeuvre can be easily learnt and effectively applied to BPPV patients . This procedure can also be repeated in cases of recurrence.

IX. Disclosure

- a. Competing interest of conflict – none.
- b. Sponsorship – none.
- c. Funding – none.

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References

- [1]. R.W.Baloh, V. Honrubia, and K. Jacobson, " Benign Positional Vertigo : clinical and oculographic features in 240 cases," *Neurology*, vol.37,no.3, pp371-378, 1987.
- [2]. E. Marciano and V. Marcelli, " Postural restrictions in labyrintholithiasis," *European Archives of Oto- Rhino – Laryngology*, vol. 24, no.1 pp.262 – 265, 2002.
- [3]. M. Von Brevern, T. Seeling, H. Neuhauser, and T. Lempart, " Benign paroxysmal positional vertigo predominantly affects the right labyrinth," *Journal of Neurology, Neurosurgery & Psychiatry*, vol.75, no.10,pp.1487 – 1488, 2004.
- [4]. S.J. Herdman, R.J. Tusa, D.S.Zee,L.R.Proctor, and D.E. Mattox, " Single treatment approaches to benign paroxysmal positional vertigo," *Archives of Otolaryngology : Head and Neck Surgery*, vol. 119, no. 4 ,pp. 450 – 454, 1993.
- [5]. S.S.U Waleem, S.M. Malik, S.Ullah, and Z.ul Hassan, " Office management of benign paroxysmal positional vertigo with Epley's maneuver," *Journal of Ayub Medical College , Abbottabad*, vol. 20, no. 1 , pp 77 – 79 , 2008.

- [6]. M. Khatri, R.M. Raizada, and M.P. Puttevar, “ Epley’s canalith – repositioning manoeuvre for benign paroxysmal positional vertigo,” Indian Journal of Otolaryngology and Head and Neck Surgery, vol.57, no.4, pp. 315 -319, 2005.
- [7]. A. Soto – Varela, M. Rossi- Izquierdo, G. Marinez – Capoccioni, T. Labella- Caballero, and S. Santos- Perez, “ Benign paroxysmal positional vertigo of the posterior semicircular canal : efficacy of Santiago treatment protocol, longt- term follow up and analysis of recurrence,” Journal of Laryngology and Otology , vol .126, no. 4 , pp. 363- 371, 2012.

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