

Original Research Article

A retrospective study on benign paroxysmal positional vertigo in a tertiary health care facility of North India

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ABSTRACT

Background: Benign paroxysmal positional vertigo (BPPV) has been attributed to be one of the commonest causes of vertigo presenting to the clinician. However, this often remains undiagnosed and undertreated, epidemiology remaining an underexplored territory for this disorder.

Methods: A study was carried out at outpatient clinic, Ear Nose Throat, Head and Neck services, Dayanand Medical College and Hospital, Punjab over a period of one year from 1st January to 31st December 2018. Based upon history, detailed otological examination, and Dix-Hallpike testing, 374 patients were evaluated for benign paroxysmal positional vertigo presenting with complaint of vertigo and dizziness in the vertigo clinic and were treated with Epley's maneuver.

Results: Out of 374 patients evaluated, 79 patients were diagnosed as BPPV and underwent office management in the form of Epley's maneuver.

Conclusions: This study helps in effective team approach among practitioners and clinicians in the hospital for referring vertigo cases to ENT OPD for effective management of vertigo.

Keywords: Vertigo, Epley's maneuver, Benign paroxysmal positional vertigo, Positional testing

INTRODUCTION

Vertigo or disequilibrium is an incapacitating entity, with an underlying pathology ranging from a benign to life threatening intracranial space occupying lesion. Family physicians, cardiologists, ophthalmologists, neurologists, neurosurgeons and otolaryngologists are likely to be consulted, either at primary or referral level.¹ Benign episodic spells of vertigo lasting for a few seconds on a particular position of the head causes anxiety, fear and loss of concentration and thereby effective working hours. This entity being the commonest, in the panicky vertiginous patients presenting in our outpatient clinics needs adequate addressal for proper management and relief of symptoms. The most important step required while addressing this entity is clinical history.^{2,3}

Otoconial 'truancy' or 'release' consequent to viral infection or head injury and a 'ampullary bounce' on the neuro-epithelium 'of the posterior semi-circular canal is the microscopic level pathophysiology. A quick 45 degree head extension 'the Dix Hallpike 'positioning test, precipitates a symptomatic spin vertigo with signs of torsional nystagmus, on the involved side.

Head-torso manoeuvre, Epley and Semont manoeuvres helps to reverse the trajectory of the otoconia and thereby propel, them from the effected ampulla through the semi-circular ducts into the vestibule via the non-ampullated end or the crus commune. The vertiginous patient walks out of the clinic, unsupported and relieved. However, a repeat procedure maybe needed as a few otoconia creep back. Therefore, with the evolution of highly effective

positional manoeuvres, benign paroxysmal positional vertigo (BPPV) has become the most successfully treated cause of vertigo. Loophole lies in our daily practice, where prompt alleviation of symptoms becomes of prime importance and making the diagnosis takes a backstage. Frequent administration of vestibular suppressants further delay diagnosis as these medications mask the vestibular signs and produce sedation and only provide symptomatic relief for the duration of therapy.

A retrospective analysis of data of vertiginous subjects from our neuro-otology lab was carried out to ascertain the frequency of this aetiology of BPPV and efficacy of the Epley’s manoeuvre.

METHODS

The study was conducted as a retrospective analysis of vertigo clinic records of all the patients presenting with vertigo or dizziness attending ENT OPD from 1st January to 31st December 2018 Dayanand Medical College and Hospital; a tertiary care health facility in Ludhiana, Punjab. Children less than 10 years were not included in the study. Patients were evaluated on the basis of history taking which included complaint of brief, sudden attack of vertigo precipitated by lying on one side followed by clinical examination characterized by geotropic nystagmus with the affected ear down, predominantly rotatory fast phase down towards the under most ear, with latency of few seconds, limited duration (<20 sec), followed by reversal upon return to upright position and declining of response upon repetitive provocation.¹ Since the Dix -Hallpike testing is pathognomic, further, these patients were subjected to particle repositioning manoeuvre and records documented on final data sheet. Collected data were analysed and statistical test were done with the help of Microsoft excel and Epi info (5) software.

RESULTS

The records of patients attending the vertigo clinic in the otorhinolaryngology outpatient department during the year 2018 were evaluated. Total no. of patients attending OPD were 32,475. A total of 374- patients were attended in Neurotology lab between 1st January to 31st December 2018for complaints of vertigo (Table 1). Out of 374- patients, 79 (21.12%) patients were diagnosed with BPPV (Figure 1).

Out of 374 patients, 158 (42.25%) were males and 216 (57.75%) were females (Figure 2). 48 patients were in age group of 11 to 30 years, 117 were in age group 30 to 45 years and 138 patients were in age group 46 to 60 years and 71 were above the age of 60 (Table 2).

Out of 79 patients diagnosed with BPPV, 67 (84.81%) patients were relieved of the symptoms on being treated with the particle repositioning manoeuvre (Epley’s

manoeuvre), with 12 patients requiring repeat Epley’s manoeuvre for relief of symptoms (Table 3).

Table 1: Distribution of patients in ENT OPD (n=32,475).

Complaints	No. of patients	Percentage (%)
ENT, head and neck surgery ailments	32101	98.85
Disequilibrium	374	1.15

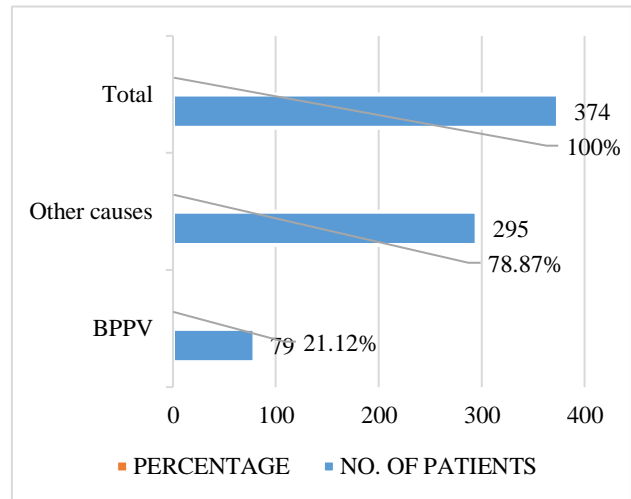


Figure 1: Etiology of patients with dizziness.

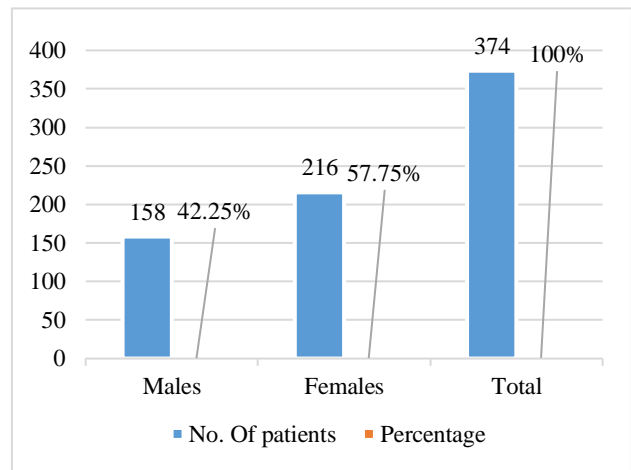


Figure 2: Gender distribution of patients with BPPV.

Table 2: Age distribution of patients (n=374).

Age group (in years)	No. of patients	Percentage (%)
11-30	48	12.83
31-45	117	31.28
46-60	138	36.89
>60	71	18.98

Table 3: Outcomes of Epley's manoeuvre in BPPV patients.

	No. of patients	Percentage (%)
Patients improved with Epley.	67	84.81
Patients requiring repeat management (unrelieved)	12	15.19
Total	79	100

DISCUSSION

Diagnosis of cause of vertigo remains a daunting task for most doctors. A detailed history with a systematic approach is the most important component in evaluating patients with dizziness.⁴ Vertigo is often an untreated symptom and is frequently associated with serious handicap and considerable psychological morbidity.⁵ True vertigo lasting few seconds and aggravated with change of head position are mostly BPPV.⁶ The onset of BPPV is typically sudden, mostly as a result of inflammatory insult (viral), trauma or idiopathic etiology.

The underlying cause is free floating endolymph particles (otoconia displaced from the otolithic membrane of the utricle) in the posterior semicircular canal. They typically settle in the dependent posterior semicircular canal and render it sensitive to gravity. The patient is asymptomatic at rest and in between the attacks and the attacks are precipitated by the change in position.⁷

In our study, it was observed that 1.15% of the patients in ENT OPD presented with vertigo out of which bppv accounted for 21.12% of the cases. Similarly in a study by Kumar, 1% of the patients presented with vertigo.¹ A study by Arya et al had 40% patients to be of Meniere's and 22% patients to be of BPPV, 2% labyrinthitis.⁸ In another study by Mohan Bansal in 2016, incidence of BPPV was found to be as 18.75% of all the cases.⁹ Das et al found BPPV as the commonest cause of vertigo, diagnosed in 20% of the cases presenting with dizziness.⁶ In a study by Breven et al, BPPV was reported in 8% of the cases.⁵

The incidence of vertigo noted in our study was seen maximum in age group 46 to 60 years (36.89%) followed by 31 to 45 years age group (31.28%) with minimum no. Of patients reporting in 11 to 30 years age group (12.83%). Similarly, in a study by Das et al, 41 of the total 75 patients were in the age group 21 to 40 years.⁶ Similarly in another study by Prasad et al in 2018, 24.78% of the cases were in the age group of 40-49 years.⁵ Kumar et al in 2018 reported maximum incidence of BPPV in 41-60 years age group.⁴

In our study, females complaining of vertigo were 57.75% with 42.25% of the males presenting with complaint of vertigo. Prasad et al in 2018 reported in his

study females to affected more than males with vertigo and dizziness.⁵ Similarly, in a study by Kumar et al in 2018, frequency of females were more than males.⁴

In the present study all patients who were diagnosed with BPPV were subjected to particle repositioning maneuver in the form of Epley's maneuver. Epley's maneuver is a non invasive and very effective procedure for the management of BPPV which can be performed in the office and gives immediate results. It also reduces repeated visits to the OPD and can be repeated without any fear. Out of 79 patients, 67 (84.81%) patients were relieved of their symptoms after Epley's manoeuvre with 12 patients requiring repeat Epley's manoeuvre. With the evolution of highly effective positional manoeuvres, BPPV has become the most successfully treated cause of vertigo.

CONCLUSION

Evaluation of a dizzy patient is a challenge due to the wide spectrum of the condition and lack of sophisticated equipment's in a peripheral set up. Though the symptom may be poorly described by the patient yet it is of utmost importance to carry out methodical clinical examination. Prompt referral to the specialist should be done instead of resorting to injudicious use of vestibular suppressants. It is also imperative to impart necessary training and education to the primary care physicians so that they can adopt a practical approach in evaluation and management of dizziness. The present study shows that vertigo patients form a sizable number of patients in an ENT OPD of a tertiary care Hospital, with BPPV being the commonest treatable cause of vertigo.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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