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Original Research Article

A retrospective study of posterior canal benign paroxysmal positional vertigo cases in a tertiary care industrial hospital

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ABSTRACT

Background: Balance disorders form a significant proportion of the patients attending ENT OPD. Among the various otologic causes responsible for balance disturbances, BPPV is one of the important causes. The etiological mechanism responsible for BPPV are canalithiasis and cupulolithiasis. Positional maneuver such as Epleys maneuver are used for treating posterior canal BPPV along with medications.
Methods: We are retrospectively studying the posterior canal BPPV cases seen in our hospital from January 2022 to January 2024. There were total 192 vertigo cases seen in the vertigo clinic of ENT Department after taking into account inclusion and exclusion criteria. Diagnosed cases of posterior canal BPPV were treated by Epleys maneuver along with pharmacological treatment.
Results: Total 50 cases of posterior canal BPPV were diagnosed which constituted 26.04% of the total no of vertigo cases. Regarding the etiology of posterior canal BPPV, 2 cases were posttraumatic while 48 cases were idiopathic. The success rate of Epleys maneuver along with Betahistine was 78% in treating such cases.
Conclusions: This retrospective study shows that most of the posterior canal BPPV cases were idiopathic. Epleys maneuver along with Betahistine was effective in the management of BPPV patients in our setup.

Keywords: Benign paroxysmal positional vertigo, Epleys maneuver, Otologic

INTRODUCTION

Giddiness affects a large percentage of population at any time. Amongst the various causes can be divided into otologic and non-otologic causes of vertigo. Among otologic causes, those commonly regarded were benign paroxysmal positional vertigo (BPPV), vestibular neuritis, labyrinthitis, and Meniere's disease. BPPV is the most common peripheral vestibular disorder. It is caused either by free floating particles in the semicircular canal (canalithiasis) or by deposition of particles on the cupula of the semicircular canals (cupulolithiasis). BPPV was first described by Barany in 1921.[1] The clinical features include true sudden onset vertigo lasting few seconds which was aggravated by change of head position. Possible etiology includes idiopathic, inflammatory insult (Viral) and trauma.[2]

A study by Arya and Nunezhad showed 22% patients to be of BPPV.[3,4] A study by Bansal et al had 18.75% patients as BPPV.[5] A study by Das et al had 20% patients as BPPV.[6] Clinically, the 2 most common BPPV variants are posterior canal BPPV and lateral canal BPPV.[7,8] The posterior canal is the most commonly affected site (88-90%) of BPPV because of the lowest position among the 3 canals.[9]

Aim and objectives

The main objective of this retrospective study was to find out the proportion of posterior canal BPPV among all

cases of vertigo seen in the vertigo clinic of ENT department and to find out the treatment outcomes of Epleys maneuver and pharmacological treatment in such cases.

METHODS

This is a retrospective study based on the records of the patients evaluated in vertigo clinic of ENT Department, SAIL ISP Burnpur hospital between January 2022 to January 2024. The convenience sample included 192 patients who presented to the vertigo clinic during this period. We included those patients aged 18-80 years who presented with at least one episode of vertigo. We excluded those patients having CNS neoplasms and patients who have undergone ear surgery. Details were entered in Microsoft excel sheet. Patients were diagnosed on the basis of history taking, clinical examination, Dix hallipike maneuver etc to confirm the diagnosis. The patients diagnosed as posterior canal BPPV on Dix hallipike maneuver were treated by Epley maneuver along with Betahistine. The retrospective study was compliant with the ethical standards of 1964 Helsinki declaration and its later amendments.

RESULTS

The retrospective study of medical records showed 50 cases which were diagnosed as having posterior canal BPPV which constituted 26.04% of the total vertigo cases during the study period. Maximum cases of BPPV were found in the age group of 41-60 years (Table 1).

Table 1: Age distribution of patients of posterior canal BPPV.

Age groups (years)	N	%
<25	1	2
26-40	6	12
41-60	34	68
>60	9	18

Table 2: Gender distribution of posterior canal BPPV patients.

Gender	N	%
Males	23	46
Females	27	54

Table 3: Distribution of etiology of posterior canal BPPV.

Etiology	N	%
Idiopathic	48	95.65
Trauma	2	4.34

Out of the 50 cases, 27 cases were of female gender and 23 cases were of male gender (Table 2). 2 Cases of BPPV were attributed to head trauma while the rest of the causes were idiopathic (Table 3). 78% of the posterior canal BPPV patients showed improvement with Epleys maneuver along with betahistine (Table 4).

Table 4: Outcomes of Epley maneuver plus medical treatment in posterior canal BPPV patients.

Outcome	N	%
Improvement	39	78
No improvement	11	12

DISCUSSION

Posterior canal benign paroxysmal positional vertigo (PC-BPPV) is a disorder of the inner ear characterized by repeated episodes triggered by head position changes in the direction of gravity with abrupt onset and rapid decrease.[10] It occurs most often in people age 50 and older, but can occur at any age, with a highly variable prevalence of 10.7-64/100,000.[11] The most common symptoms are positionally-triggered vertigo, dizziness, unsteadiness, and loss of balance and nausea.[12] Study has revealed that more cases of BPPV present in the age group of 41 to 60 years and over 60 years.[13] Many published studies have shown female predominance in BPPV cases as compared to males.[13-16] Effectiveness of particle repositioning maneuver for treating BPPV patients ranges from 78% to 95%.[17-20] Epleys maneuver is a noninvasive and effective procedure which can be used for the management of BPPV. It can be performed in the office and immediate results have been observed. There is reduction of unnecessary repeat visit to the OPD and procedure may be repeated without any fear. In the study by Munjal et al 84.81% of the patients got symptomatic relief with Epley maneuver.[2] Through a series of head movements, the crystals are returned to the utricle, where they are either absorbed or eliminated by the endolymphatic sac.[21] However a study done by Kavathia et al showed that the Epley maneuver with medical therapy provides effective and longterm control of symptoms in patients with BPPV.[22] In the comparative study conducted by researchers on the treatment of BPPV by Betahistine alone, Epley maneuver alone,epley maneuver followed by oral betahistine they have concluded that concurrent prescription of Betahistine and Epley maneuver is superior to other two options. They have also suggested Betahistine alone as an appropriate alternative treatment for patients who cannot tolerate repositioning maneuvers.[23]

Limitations

The main limitations of the study were; limited no of investigations and tests used during vertigo diagnosis and other positioning maneuvers not utilized for treatment of posterior canal BPPV.

CONCLUSION

This retrospective study shows that most of the posterior canal BPPV cases were idiopathic, with female

predominance and most cases in 41-60 age group. Epleys maneuver along with Betahistine was very effective in the management of BPPV patients in our setup.

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