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Original Research Article

Evaluation of Epley's manoeuvre efficacy in posterior semicircular canal benign paroxysmal positional vertigo

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ABSTRACT

Background: Benign paroxysmal positional vertigo (BPPV) is the most prevalent cause of peripheral vertigo in the outpatient department.
Methods: After applying inclusion and exclusion criteria, 53 patients out of 96 who visited the outpatient department were included in this study. To rule out other disorders, pure tone audiometry, computed tomography etc were performed if needed. Epley's manoeuvre was performed, and the patient's response was noted. The manoeuvre was performed during weekly appointments, and the number of visits necessary by each patient was recorded. The patients were followed up for four months.
Results: Mean age of the patients was 48 years. In this study, out of 53, there were 31 females (58.49%) and 22 males (41.50%). The female to male ratio was 1.4:1. All patients experienced positional vertigo, which was accompanied by nausea and vomiting. The right side was found to be more involved in our study than the left. Out of 53 patients, 23 patients (43.39 %) recovered in the first visit, 15 patients (28.30 %) recovered in second visit, 8 patients (15.09 %) recovered in the third visit and remaining 7 patients (13.20 %) recovered in fourth visit. All the patients recovered eventually. In 5 out of 53 cases, that is, in 9.43%, recurrence was seen with return of the BPPV symptoms.
Conclusions: We concluded that majority of patients for whom Epley's manoeuvre was done recovered after the first visit itself. Patients presenting with recurrence were less probably due to the shorter period of follow up.

Keywords: BPPV, ENT disease, Epley's manuovre, Peripheral vertigo, Rehabilitation

INTRODUCTION

Benign paroxysmal positional vertigo (BPPV) is the most prevalent cause of peripheral vertigo in the outpatient department of otorhinolaryngology.[1] It has a typical history and is easily diagnosed on physical examination. Dix and Hallpike coined the term BPPV in 1952 to describe the condition's non-cancerous (benign) origin and brief (paroxysmal) bursts of acute vertigo caused by head movements (positional).[2] The most prevalent symptom is episodic vertigo, which is self-limiting and lasts less than 30 seconds.[3] The posterior semicircular canal is the most common site of BPPV, followed by the horizontal semicircular canal (less frequently) and the anterior semicircular canal (occasionally).[4] It is treated with a mix of vestibular rehabilitation and pharmaceutical therapy with vestibular rehabilitation being the first line treatment. Even more than vestibular rehabilitation, Epley's procedure is a safe, straightforward, and effective treatment for posterior semicircular canal BPPV.[5] Our study was intended to assess the effectiveness of Epley's procedure in the treatment of posterior semicircular canal BPPV patients in this study.

METHODS

From August 2018 to August 2019, the study was conducted in the outpatient department of secondary health care centres (Civil hospital Sandhole and Dharampur) in Himachal Pradesh, India. The study was prospective in nature. After applying inclusion and exclusion criteria, 53 patients out of 96 who visited the department were included in this study. The inclusion criteria include patients having a history of transient positional vertigo and a characteristic response to the Dix-Hallpike procedure. The exclusion criteria include patients with prior hearing or vestibular difficulties, neurological abnormalities, cervical spondylosis, cerebrovascular disorders, and metabolic diseases. Prior to the procedure, written informed consent was obtained. Every patient underwent a thorough physical, neurological, and otological assessment. To rule out other disorders, pure tone audiometry, computed tomography etc were performed if needed. There was a history and characteristics typical of BPPV in all of the cases. DHT, a gold standard test for diagnosis, was performed at the first appointment to identify BPPV and at following visits to ensure recovery. The patient was instructed to lie supine on a couch with his head barely over the end. The head was then turned 30^0 to 45^0 to one side and dropped 30^0 below the level of the couch. The patient was instructed to focus his attention on a finger held more than 25 cm away from his eyes. Rotatory nystagmus was seen after a significant latent period, with its direction towards the under most ear.[6]

Epley's manoeuvre was performed, and the patient's response was noted. The patient was requested to sit on a couch with his or her head rotated 45^0 to the affected side. The patient was quickly brought down, with the head still twisted 45^0 to the injured side and stretched over the table's border, and the neck was well supported. The head was turned 90^0 to the opposite side, followed by a 90^0 rotation of the body. The patient's head was then twisted 90^0 so that he was looking diagonally downwards. Legs were then crossed over the table's edge in preparation for a return to a seated position. The patient was then ordered to sit with his head moved forward 20 degrees.[7] The manoeuvre was performed during weekly appointments, and the number of visits necessary by each patient was recorded. Because a recent study recommended a positive effect of many sessions for posterior semicircular canal BPPV patients who were not completely clear of symptoms after the first sitting, the movement was repeated even if the symptoms lingered after the first visit. Twenty patients were followed for up to four months to look for recurrence. The data acquired was expressed as mean and percentages in the research article.

RESULTS

Fifty-three cases, diagnosed as posterior semicircular canal BPPV were enrolled for the present study after written informed consent and explanation regarding the need for the study. The mean age of the patients was 48 years. In this study, out of 53, there were 31 females (58.49%) and 22 males (41.50%) (Figure 1). The female to male ratio was 1.4:1. All patients experienced positional vertigo, which was accompanied by nausea in 52.8% and vomiting in 47.2%. The right side was found to be more involved in our study than the left. In 66% of the 53 patients, the right side was involved, while 34% were involved on the left side (Table 1). Out of 53 patients, 23 patients (43.39%) recovered in the first visit, 15 patients (28.30%) recovered in second visit, 8 patients (15.09%) recovered in the third visit and remaining 7 patients (13.20%) recovered in fourth visit. All the patients recovered eventually. In 5 out of 53 cases, that is, in 9.43%, recurrence was seen with return of the BPPV symptoms.

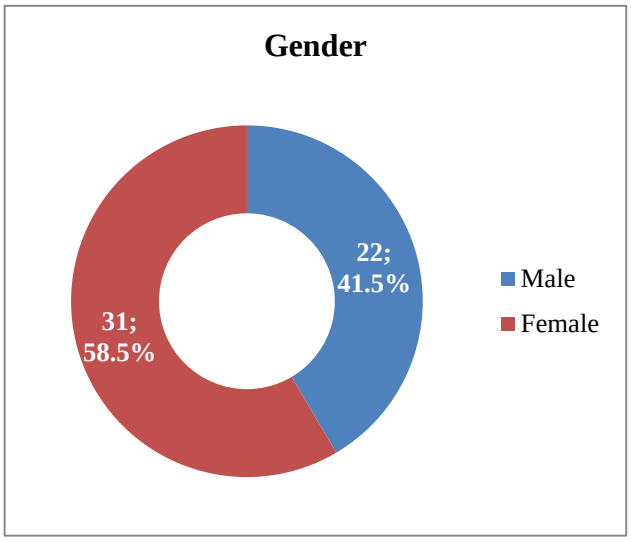

Figure 1: Number and percentage of males and females.

Table 1: Associated symptoms & laterality

Variables	Symptoms	N (%)
Associated symptoms	Nausea	28 (52.8)
	Vomiting	25 (47.2)
Laterality	Right	35 (66)
	Left	18 (34)

DISCUSSION

The average age of individuals with posterior canal BPPV in this study was 48.6 years. Previous research indicated that the average age was 55.6 years and 55 years.[8] There was a bias of the disease towards women in this study, with 67.82% females and 32.12% males, for a female to male ratio of 1.4:1. Previous research included 60% female participants and a male to female ratio of 2:1.[9]

In our study, all patients experienced positional vertigo, which was accompanied by nausea in 52.8% and

vomiting in 47.2%. The right side was found to be more involved in our study than the left. In 66% of the 53 patients, the right side was involved, while 34% were involved on the left side. In this study, out of 53 patients, 23 (43.39%) recovered in the first visit, 15 (28.30%) recovered in the second visit, 8 (15.09%) recovered in the third visit, and the remaining 7 (13.20%) recovered in the fourth visit.

Recurrence was observed in 5 of 53 cases (3.45%) in this investigation. In a prior study, 12% of the cases were found to be recurring.[10] The discrepancy in rates can be related to the shorter duration of follow-up in our trial, which was only 4 months, whereas the later required a minimum of 6 months. One study found that following treatment, there was a 15% return of BPPV symptoms per year, and by 40 months, up to 50% of patients experienced recurrence of positional induced vertigo, implying that the likelihood of recurrence increased with the length of follow-up.[11]

Limitation

Recurrence rate was less in our study due to smaller follow up period since it was being shown in previous studies that the rate of recurrence raises with the extent of follow up.

CONCLUSION

We concluded that majority of patients for whom Epley's manoeuvre was done recovered after the first visit itself. Patients presenting with recurrence were less probably due to the shorter period of follow up.

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

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