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The epidemiological and clinical profile of benign paroxysmal positional vertigo over a period of 6 months about 39 cases

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ABSTRACT

Benign paroxysmal positional vertigo accounts for one-third of all vertigo cases. It is a true rotational vertigo triggered by changes in head position, which lasts less than 30 seconds, isolated from any auditory and neurological signs. It is due to a displacement of otoliths in one of the semicircular canals of the vestibule of the inner ear. In 89% of cases, it is the posterior canal, in 10% of cases the lateral canal and in 1% of cases the anterior canal. The objective was to determine the epidemio-clinical and therapeutic parameters of this pathology at the ENT and Head and Neck Surgery Department, Mohammed V Military Hospital of Instruction.
A prospective and descriptive study on benign paroxysmal positional vertigo was carried out over a period of 6 months from September 2023 to February 2024 in ENT and Head and Neck Surgery Department, Mohammed V Military Hospital of Instruction in Rabat. The parameters studied were age and gender, the patient's history, the side and semicircular canals affected, the duration and intensity of vertigo, warning signs, signs of examinations, as well as the therapeutic maneuvers undertaken.

Our sample included 39 patients. The age of the patients varies between 39 and 74 years with an average of 57.9 years. Our group consists of 22 women and 17 men. A total of 53.85% of the cases involved the left side and 46.15% for the right side.
31 patients have posterior canal BPPV, 8 patients have lateral canal BPPV, 5 patients have the geotropic form and 3 patients have the ageotropic form and 0 cases for the anterior canal.
A total of 37 (94.88%) of the patients recruited were cured after liberatory maneuvers, including 29 (78%) after one or two Sémont-Toupet maneuvers and 8 (21.62%) after Epley maneuvers.
In the geotropic form, healing is obtained after 1 maneuver in 40%, after 2 maneuvers in 40%. A 3rd maneuver is necessary in 20% of cases. For the ageotropic form, release is obtained only after 2 maneuvers in 33.3%, and after 3 maneuvers in 50%. In 16.7% of patients, release was not obtained despite a 4th maneuver and the use of a vibrator.
The management of PPPV of the posterior canal is essentially based on two therapeutic maneuvers that aim to move the canaliths from the posterior semicircular canals to the utricle in order to be resorbed
VPPB of the lateral canal has 2 forms: Geotropic and Ageotropic. They are defined by the direction of the nystagmus triggered during rolling, depending on the position of crystals in the lateral canal. The determination of the side is essential because it determines the direction in which the repositioning maneuver must be carried out.

KEYWORDS

Benign paroxysmal positional vertigo (BPPV) , Vertigo , Otoliths , Canaliths, Geotropic, Ageotropic Form

MAIN ARTICLE

INTRODUCTION:

Benign paroxysmal positional vertigo (BPPV) is the most common cause of vertigo, accounting for about 17% to 42% of consultations for vertigo

BPPV manifests clinically as bouts of true rotational vertigo triggered by changes in position that last less than 30 seconds, isolated from any auditory and neurological signs.

BPPV is caused by floating otoconia that move freely through one of the semicircular canals (canalolithiasis). More rarely, it is due to otoconia adhering to the cup (cupulolithiasis).

It affects the posterior semicircular canal in more than 85% of cases, while it affects the lateral semicircular canal in only 10 to 15%. [1] Involvement of the anterior semicircular canal is even rarer, representing less than 1% of the head, which lasts less than 30 seconds, isolated from any auditory and neurological signs

The diagnosis is based on the triggering of a typical nystagmus by provocative maneuvers. The characteristics of the nystagmus make it possible to specify the affected canal. The treatment is based on so-called "liberating" repositioning maneuvers, specific to each channel, associated with instructions to be followed in the first few days.

MATERIAL AND METHODS:

This work is a prospective and descriptive study carried out, ENT and Head and Neck Surgery Department, Mohammed V Military Hospital of Instruction, on 39 patients, over a period of 6 months from September 2023 to February 2024

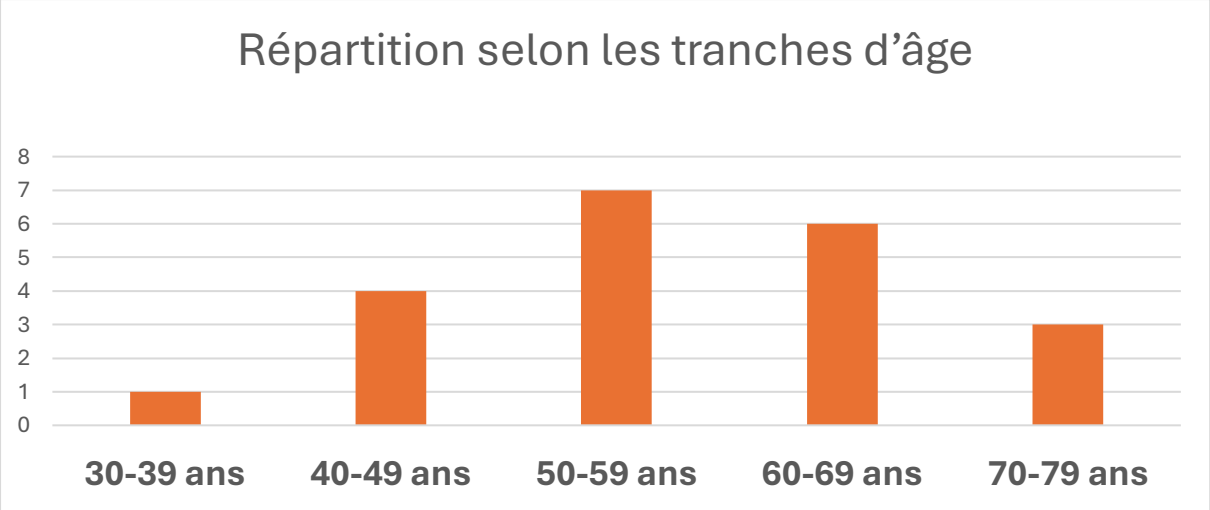
The aim of this study was to determine the epidemio-clinical and therapeutic parameters of BPPV at Mohammed V Military Hospital of Instruction

Inclusion criteria: All patients with positional vertigo, in whom diagnostic maneuvers with VNS have objectified nystagmus consistent with the diagnosis concluded at BPPV

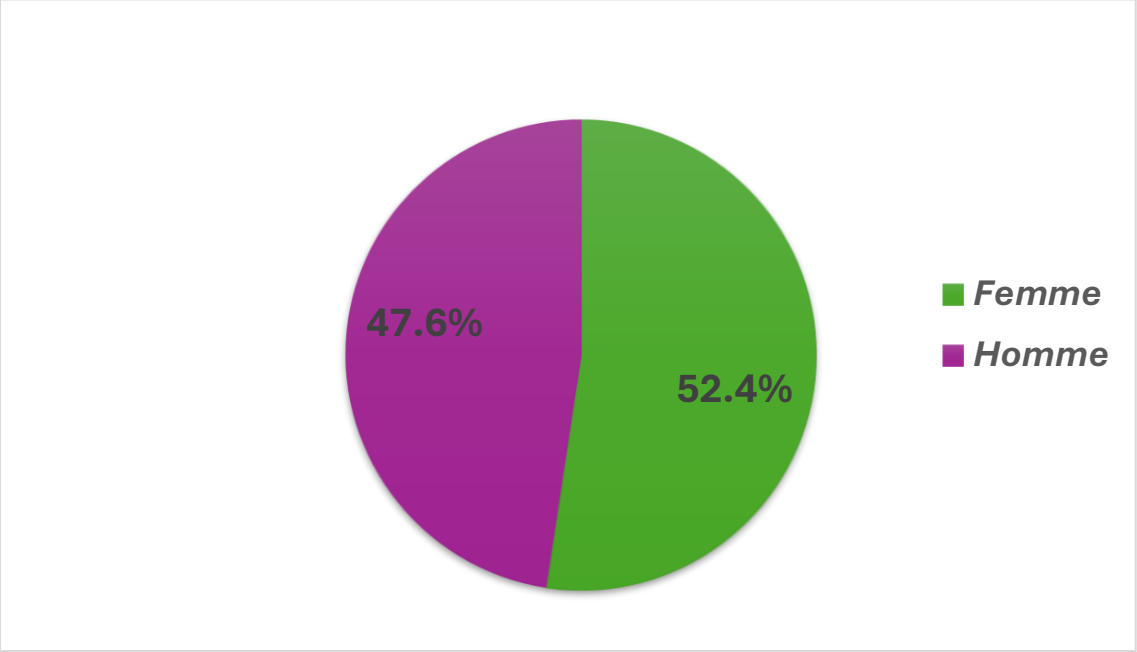
All patients underwent a complete ENT and neurological examination. A repositioning maneuver is carried out with a check-up after one week, giving the patient instructions. If at the check-up, there is still nystagmus during the examination, another maneuver is performed and a check-up in a week is scheduled. Liberation is taken into account when the provocative maneuvers no longer trigger nystagmus

We excluded patients with associated otologic signs or neurological pathologies, or those who did not present for check-ups.

RESULTS:

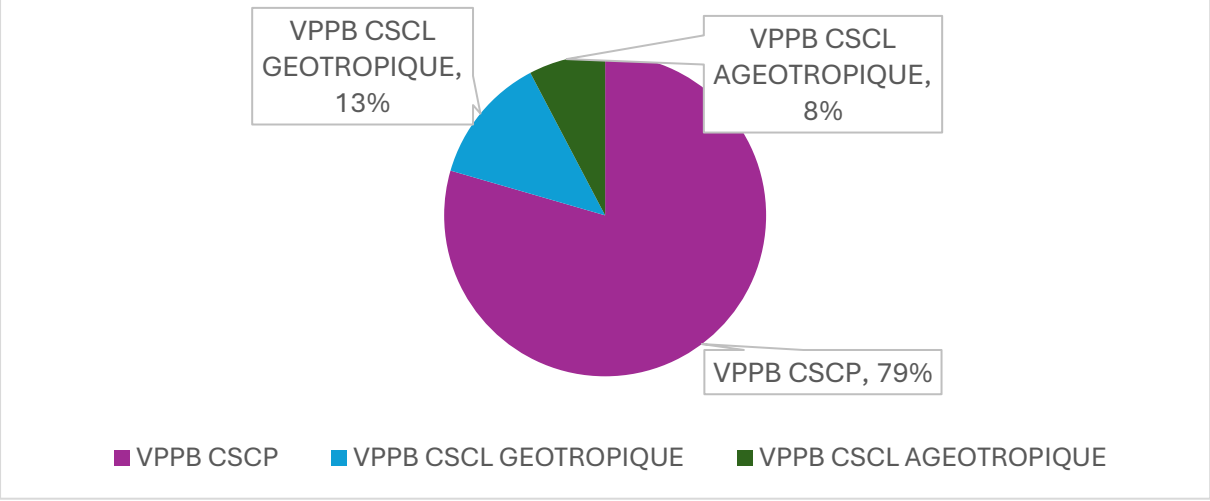


The age of our patients varies between 39 and 74 years with an average age of 57.9 +/- 9.6 years. The age groups of 50 to 59 and 60 to 69 are the most represented, with 7 and 6 patients respectively. These 2 age groups correspond to 61.9% of our sample.



Gender distribution of patients

Our series includes 22 female patients (52.4%) and 17 male patients (47.6%). There is no such thing as a female predominance



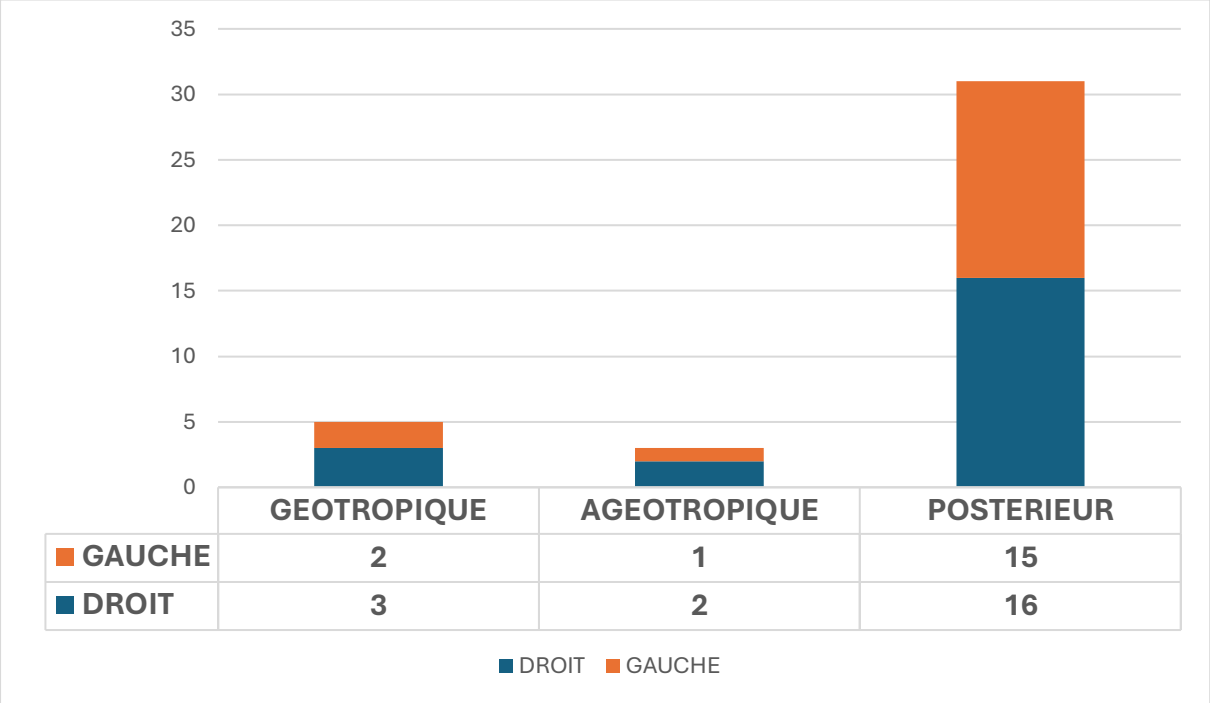
Distribution of patients by form of BPPV

Regarding Clinical Data:

31 patients in our series were diagnosed with posterior canal BPPV

8 patients were diagnosed with BPPV of the lateral canal, which has 2 forms depending on the direction of nystagmus triggered by the provocative maneuvers. The geotropic form corresponds to a nystagmus that beats downwards or towards the ground, whereas in the ageotropic form, the triggered nystagmus beats upwards or towards the roof.

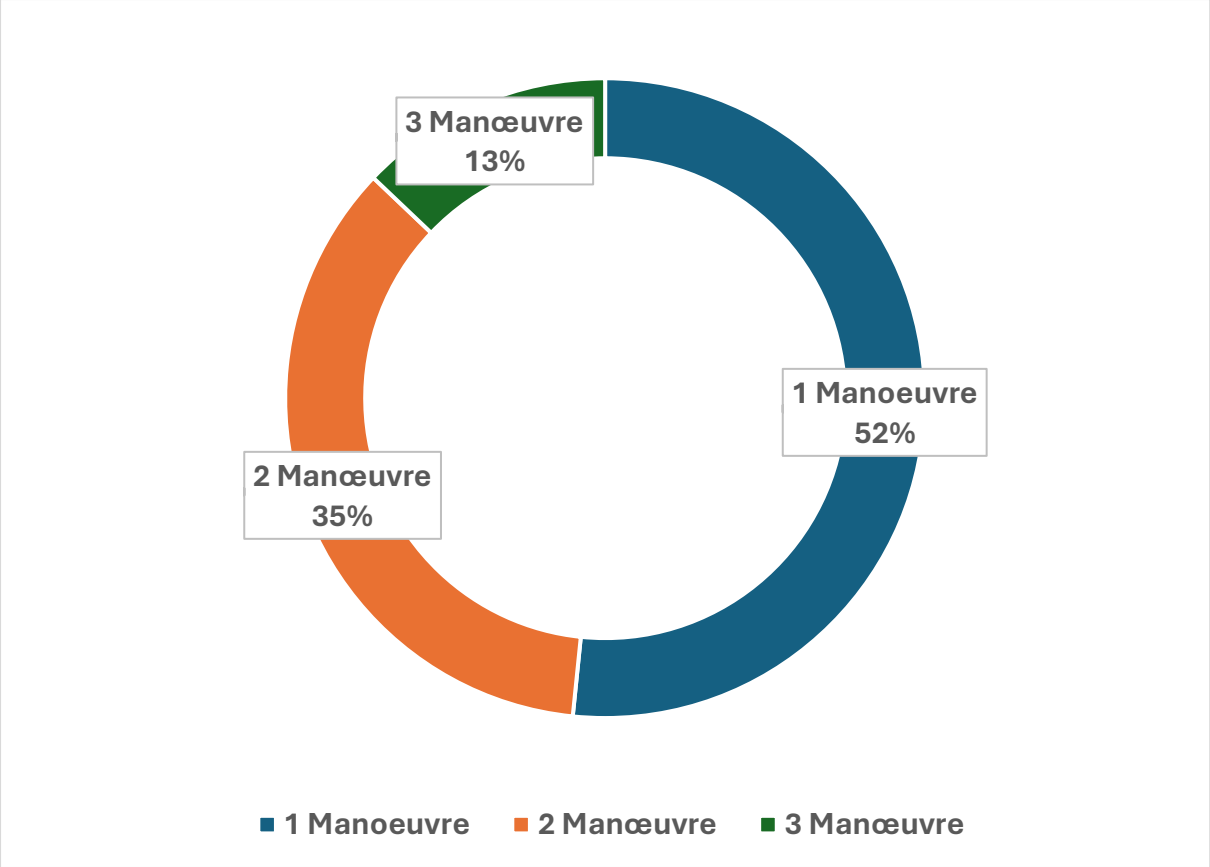
In our series, 5 patients presented with the geotropic form and 3 had an ageotropic form



Distribution of patients according to the affected side:

In our series, concerning the posterior canal, the right side is the most affected with 21 cases (53.85%), the left side being affected in 18 cases (46.15%)

In the geotropic form, the right side is affected in 3 cases, while the left side is the affected side in 2 patients. For the ageotropic form, the affected side is the right side in 2 cases, and the left side in only one patient

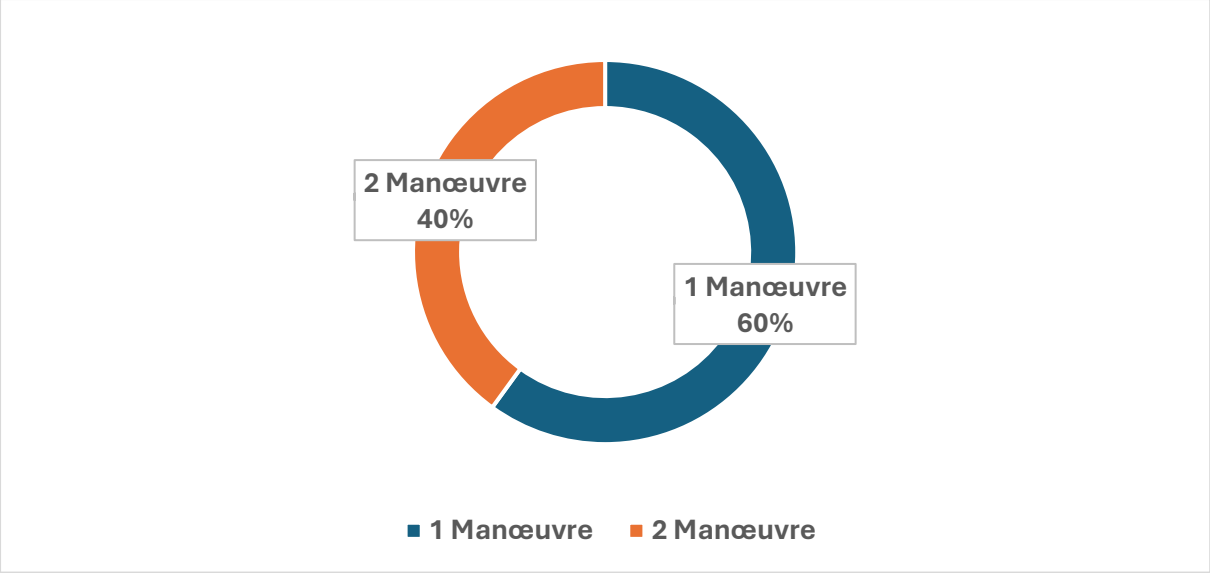


Distribution of patients with posterior canal BPPV according to the number of maneuvers required to achieve release

Regarding therapeutic data: for post-canal BPPV

The most frequently used maneuver was the channel repositioning maneuver (MRC) described by Epley (83.87%), and the Semont maneuver (16.12%)

Release, defined by clinical improvement and the absence of nystagmus triggered by a provocative maneuver, was obtained after 1 maneuver in 16 patients (51.61%), after 2 maneuvers in 11 patients (35.48%). A 3rd maneuver was necessary in 4 patients (12.90%).

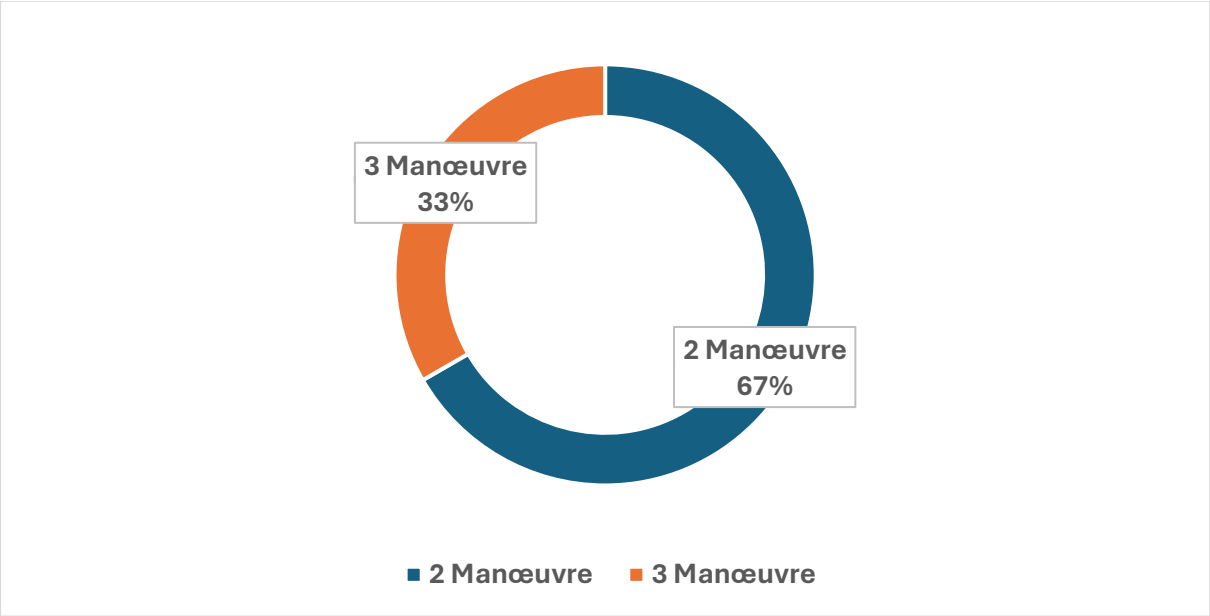


Distribution of patients with a geotropic form of BPPV of the lateral canal according to the number of maneuvers required to obtain release

For the geotropic form:

The most frequently performed maneuver is the Baloh-Lempert maneuver known as the barbecue

Release is obtained after 1 maneuver in 3 patients (60%), after 2 maneuvers in 2 patients (40%)



Distribution of patients with ageotropic lateral canal BPPV according to the number of maneuvers required to achieve release

For the ageotropic form, all patients benefited from a Gufoni maneuver alone or followed by a Barbecue maneuver after inversion.

All patients retained nystagmus at the follow-up after the first maneuver. Healing was obtained after 2 maneuvers in 2 patients (66.66%), after 3 maneuvers in 1 patient (33.33%).

DISCUSSION :

Patients with vertigo symptoms are eventually diagnosed with BPPV in 17-42% of cases, making it the most common cause of vertigo. Lateral semicircular canal BPPV is the second most common type of BPPV after posterior canal. This wide range of incidence of lateral semicircular canal BPPV described in the literature is probably related to the speed with which the patient can be seen in each health facility after the onset of vertigo. In Japan, for example, according to 2 studies carried out in centers with access to rapid care, the incidence of BPPV of the lateral semicircular canal reached 31 to 33%.

Kaliberg M et al noted that BPPV was less common in adults than in children [2], which differs from our results where adults were more affected.

Lee SH et al in Korea found a peak in the frequency of BPPV after the age of 60 [3], while the majority of our patients were in the 41 to 50 age group

Just like in the Bronstein AM study [4], we also observed a female predominance in our series. The predominance of BPPV in women is thought to be due to the existence of premenstrual BPPV, relating to otoconial degeneration and alteration of ductal function[1]. This female predominance is also linked to the influence of estrogen on otolith calcium metabolism [5].

The determination of the affected side, fundamental for the management of BPPV, is obtained by the Dix-Hallpike diagnostic maneuver for the CSCP, Brevern M et al had noted that the right side was more often affected than the left side [6]. In our study, the right side was the most affected with 53.85% of cases.

Korres S et al noted a more frequent involvement of the posterior semicircular canal in 60 to 90% of cases [7] , whereas in our study the same posterior semicircular canal was affected in 79.48% of our patients.

In the literature, after the posterior semicircular canal, the lateral semicircular canal is the second to be affected [8], in our series, the involvement of this semicircular canal represented 20.51% of our cases

CONCLUSION :

Benign paroxysmal positional vertigo is the most common peripheral vestibular disorder that presents with brief and episodic vertigo, without other otological or neurological signs, its diagnosis can be made through clinical presentation and diagnostic maneuvers, and usually does not require additional paraclinical testing, the provocative Dix-Hallpike maneuver represents the key examination for diagnosing posterior semicircular canal bppv, The decubitus roll maneuver is the reference test for the diagnosis of lateral canal BPPV with its 2 geotropic and ageotropic variants. For the treatment of BPPV of the lateral canal, the Lempert maneuver, the Gufoni maneuver, and the forced prolonged positioning are the three most suitable therapeutic choices.

ACKNOWLEDGEMENTS

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