



ORIGINAL ARTICLE

Benign Paroxysmal Positional Vertigo – A Review of 101 Cases[☆]



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KEYWORDS

Vertigo;
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Abstract

Introduction and objective: Benign paroxysmal positional vertigo is one of the most common vestibular disorders, with a lifetime prevalence of 2.4%. This study aimed to assess age, gender, lesion type and site, association with other vestibular diseases, progression and recurrence in a Portuguese population.

Methods: This was a retrospective observational study of 101 patients diagnosed with benign paroxysmal positional vertigo by the same senior doctor, in a tertiary academic hospital, between January 2009 and May 2011.

Results: A total of 101 cases were pooled, with a mean age of 56.57 ± 15.33 years (15–90 years). From these, 72.3% were women. The posterior canal was affected in 72.3%, the lateral in 24.7%, the anterior in 2% and multiple canals in 1%. Unilateral canal and left labyrinth involvement were more frequent. The therapeutic maneuver used most was Epley's. Recurrence was observed in 10.9% of the cases. It was idiopathic in 83.2% of cases. No association was found between the number of maneuvers necessary to treat benign paroxysmal positional vertigo and etiology.

Conclusion: Benign paroxysmal positional vertigo is more frequent in female subjects, in the 6th decade and involves preferably the posterior semicircular canal of the right labyrinth. In most cases it is idiopathic and treatment with repositioning maneuvers has a mean success of 90%. Our results were in accordance with the literature; nevertheless, in this study the left labyrinth was most affected and the follow-up period was variable.

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PALABRAS CLAVE

Vértigo;
Laberinto;
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Vértigo posicional paroxístico benigno: revisión de 101 casos**Resumen**

Introducción y objetivo: El vértigo posicional paroxístico benigno es uno de los trastornos vestibulares más comunes con una prevalencia de 2.4 por ciento. Este estudio tiene como objetivo evaluar la edad, sexo, tipo y localización de la lesión, la asociación con otras enfermedades vestibulares, la progresión y recurrencia en una población portuguesa.

Métodos: Estudio observacional retrospectivo de 101 pacientes con diagnóstico de vértigo posicional paroxístico benigno, por el mismo médico de alto nivel, en un hospital terciario universitario, entre enero de 2009 y mayo de 2011.

Resultados: Un total de 101 casos se combinaron con una edad media de $56,57 \pm 15,33$ años (15-90 años). De estos 72,3% eran mujeres. El canal posterior se vio afectada en el 72,3%, el lateral en el 24,7% de la anterior en un 2% y multicanal en el 1%. Canal unilateral e implicación laberinto izquierda fueron más frecuentes. La maniobra terapéutica más utilizada fue de Epley. La recurrencia se observó en el 10,9% de los casos. Fue idiopática en 83,2% de los casos. No se encontró una asociación entre el número de maniobras necesarias para tratar el vértigo posicional paroxístico benigno y etiología.

Conclusión: El vértigo posicional paroxístico benigno es más frecuente en mujeres, en el sexto decenio e implica preferiblemente el canal semicircular posterior del laberinto derecho. En la mayoría de los casos es idiopática y el tratamiento con maniobras de reposición tiene un éxito medio del 90%. Nuestros resultados están de acuerdo con la literatura, sin embargo, en este estudio el laberinto izquierdo es el más afectado y el período de seguimiento es variable.

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Introduction

Benign paroxysmal positional vertigo (BPPV) is one of the most common vestibular disorders.¹⁻⁹ It is characterized by spells of vertigo and nystagmus of short duration that are elicited by turning the head in the plane of the affected semicircular canal.^{2,5} Vertigo and other associated symptoms are triggered by fragments of statocones coming from the utriculus macula, which move to one or more semicircular canals and turn the cupule into a gravity-sensitive organ.¹⁰

Pathophysiological theory of cupulolithiasis was described by Schneck. Such theory states that otolithic fragments detach from the utricle macula and stick to the semicircular cupule, which stops working as angular acceleration transducer and starts working as linear acceleration transducer. The canalithiasis theory explains that the fragments do not remain adhered to the semicircular canal cupula, but rather they float in the endolymph. Thus, the patient's head movement causes these fragments to move and thus an inadequate stimulation of the canal cupula, generating vertigo symptoms.^{3,6,8,11,12}

Posterior canal involvement is characterized by rotatory and upbeat vertical positional nystagmus (counterclockwise in right labyrinth lesions and clockwise in left labyrinth lesions).^{1,3,4,6} This is the most common type of BPPV accounting for up to 90% of the patients.^{3,4,7,12}

Anterior canal BPPV is quite rare and its incidence has been reported to range from 1%–2% to 15%. Anterior canal involvement is characterized by rotatory and downbeat vertical positional nystagmus (counterclockwise in right labyrinth lesions and clockwise in left labyrinth

lesions). Exclusively counterclockwise or clockwise rotatory positional nystagmus suggests involvement of the vertical canal, although not defining which vertical canal is affected. In vertical canal involvement, canalithiasis is characterized by nystagmus lasting up to 1 min, and cupulolithiasis is evidenced by nystagmus lasting more than 1 min.^{1,3-6}

Lateral canal involvement is characterized by horizontal positional or positioning nystagmus. Horizontal positional nystagmus is geotropic when tilting the head to the right causes right horizontal nystagmus and tilting the head to the left causes left horizontal nystagmus. It is ageotropic when tilting the head to the right causes left horizontal nystagmus and tilting the head to the left causes right horizontal nystagmus.^{1,3-7,12} BPPV originating from stimulation of the horizontal semicircular canal is the second most common type of BPPV, accounting for approximately 5%–15% of the patients.¹² Its frequency has been occasionally reported up to 30%.³

The main BPPV diagnostic maneuver for the posterior canal is the Dix Hallpike test, which aims at triggering the labyrinth symptom or sign such as vertigo, nausea and/or nystagmus.^{5,8,11} Anterior canal BPPV produces bilaterally positive Dix Hallpike maneuvers.³

The Dix Hallpike provoking maneuver is used to diagnose the disease by moving the patient rapidly from a sitting position to a position of head hanging with each ear alternately undermost.^{3-5,12} This maneuver produces intense vertigo in conjunction with nystagmus, with a short latency, intensity characterized by crescendo and decrescendo element, reversal on returning to the upright position, and fatigability on repetitive provocation may easily establish the diagnosis of BPPV.^{3,4,12}

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