Is Posttraumatic Benign Paroxysmal Positional Vertigo Different From the Idiopathic Form?


Carlos R. Gordon, MD, DSc; Ronen Levite, MD; Vitaly Joffe, MD; Natan Gadoth, MD

FROM ABSTRACT

Background: Although head trauma is considered a common cause of benign paroxysmal positional vertigo (BPPV), clinical presentation and outcome of traumatic BPPV (t-BPPV) have not been systematically evaluated.

Objectives: To compare the clinical presentation, patient’s response to physical treatment, and outcome of patients with t-BPPV with those with the idiopathic form (i-BPPV).

Methods: We reviewed the clinical records of 247 consecutive patients with posterior canal BPPV during the years 1997 to 2000. All patients were diagnosed using the Dix-Hallpike test and treated using the particle repositioning maneuver.

Patients with an onset of positional vertigo within 3 days of well-documented head trauma were included in the t-BPPV group. The outcome was compared with the outcome of 42 patients with i-BPPV who were similarly treated and followed up.

Results: The most common cause [of BPPV] was head trauma was motor vehicle crash, documented in 57% of the cases; half of the patients additionally suffered from a whiplash injury.

While the other causes were diverse, common falls were predominant.

Only 2 of the patients involved in motor vehicle crashes experienced brief loss of consciousness.

67% of patients with t-BPPV required repeated physical treatments for complete resolution of signs and symptoms in comparison to 14% of patients with i-BPPV.

During the follow-up of 21.7 ± 9.7 months, 57% of t-BPPV patients and 19% of i-BPPV controls had recurrent attacks.

Conclusions: The nature and severity of the traumas causing t-BPPV are diverse, ranging from minor head injuries to more severe head and neck trauma with brief loss of consciousness.
It appears that t-BPPV is more difficult to treat than i-BPPV, and also has a greater tendency to recur.

THESE AUTHORS ALSO NOTE:

“Benign paroxysmal positional vertigo (BPPV) is a very common form of vertigo caused by dislodged otoconia making its way from the utricle mainly into the posterior semicircular canal.”

“In 5% to 22% of cases, the otoconia will be displaced into the horizontal canal, or more rarely, the anterior canal.”

“The majority of patients experience attacks of rotational vertigo lasting 10 to 30 seconds that are precipitated by lying down, sitting up, turning over in bed, looking up, or bending forward.”

“Prolonged and disabling sensations of drunkenness and light-headedness that may cause falls are also frequently reported.”

“A diagnosis of BPPV stemming from the posterior semicircular canal can be easily established at bedside by the Dix-Hallpike positional test (placing the patient in the lateral head-hanging position elicits the typical attack of vertigo accompanied by transient, up-beating, torsional nystagmus with the upper poles of the eyes beating toward the undermost affected ear).”

“Establishing a diagnosis of BPPV is beneficial since it is treated by relatively simple physical maneuvers without the need for additional investigations or drug therapy.”

“About 80% of patients with posterior canal BPPV will be free of symptoms and signs following a single physical maneuver.”

In this study, following the confirmation of a BPPV diagnosis, all patients were immediately treated by a single particle repositioning maneuver (PRM).

“Patients were instructed to avoid bending over and to stay in the upright position for the remainder of the day (8-10 hours).”

A repeated examination 1 week later, which is the routine in our clinic, was performed to determine the PRM efficacy. When the results from the Dix-Hallpike test were positive for vertigo, PRM was performed and the patient was reexamined after 1 week. Once patients tested negative for vertigo, they were reexamined after 3, 6, and 12 months, and then contacted by telephone for further outcome information. All patients were treated.

RESULTS
86% of the i-BPPV controls had complete resolution of symptoms and signs (results were negative for vertigo on the Dix-Hallpike test) following a single PRM.

36% with t-BPPV were free of symptoms and signs after a single PRM.

During the 6- to 42-month follow-up, 57% of patients with t-BPPV and 19% with i-BPPV had recurrent attacks.

DISCUSSION

The causes of t-BBPV in this study include:
1) Minor blows to the head from a football or during a fall.
2) Moderate-severe head and neck trauma with brief loss of consciousness during MVCs.
3) Taking a violently shaky speedboat trip.
4) Drilling of a burr hole for insertion of a VP shunt.
5) Traumatic dental surgery using a hammer and a chisel.

t-BPPV accounts for 15% to 20% of all BPPV cases.

Inner ear diseases accounted for 8% to 39% of cases with BPPV.

“There is no clinical evidence that cervical injuries alone can elicit nystagmus with consequent vertigo.”

“BPPV should always be considered a possible diagnosis in cases of posttraumatic vertigo associated with cervical symptoms or head-neck movement avoidance.”

“Every patient complaining of dizziness following head trauma should be examined using the Dix-Hallpike test even if this could provoke pain and discomfort.”

[IMPORTANT]

Horizontal canal BPPV can be converted to typical posterior BPPV after a single ‘barbecue’ maneuver.

19% of these t-BPPV patients had bilateral BPPV (both ears simultaneously affected) while all of the i-BPPV patients had unilateral BPPV. [IMPORTANT]

“t-BPPV is significantly more difficult to treat than i-BPPV.”

67% of t-BPPV cases needed repeated physical treatment until complete BPPV resolution, in comparison with 14% of patients with i-BPPV.

“Recurrence was significantly more common in t-BPPV (57%) than in idiopathic cases (19%).”

Other studies have shown a recurrence rate between 26-34%.
“Otoconia are detached by trauma, and microscopic hemorrhages, or ‘tissue shearing,’ results in biochemical changes that enhance the formation of otoconial clots.”

“Following a successful maneuver, these microscopic changes may reactivate the production of new clots, accounting for the recurrence of BPPV.”

KEY POINTS FROM DAN MURPHY

1) Benign paroxysmal positional vertigo (BPPV) is a very common form of vertigo caused by dislodged otoconia [canaliths], usually found in the posterior semicircular canal.

2) In 5% to 22% of cases, the otoconia will be displaced into the horizontal canal, or more rarely, the anterior canal.

3) The usual attack of rotational vertigo lasts 10 to 30 seconds and are precipitated by lying down, sitting up, turning over in bed, looking up, or bending forward.

4) After this short attack of vertigo, there may be prolonged disabling sensations of drunkenness and light-headedness that may cause falls.

5) The diagnosis of BPPV is established by the Dix-Hallpike positional test.

6) The Epley canalith repositioning maneuver works in the treatment of both t-BPPV and i-BPPV.

7) Whiplash injury is the primary cause of t-BPPV, and it usually occurs without a loss of consciousness.

8) 14% of patients with i-BPPV require more than one treatment.

9) 19% of patients i-BPPV who were successfully treated will experience reoccurrence.

10) 67% of patients with t-BPPV required more than one treatment.

11) 57% of patients with t-BPPV who were successfully treated will experience recurrence.

12) t-BPPV is more difficult to treat than i-BPPV, and also has a greater tendency to recur.

13) t-BPPV accounts for 15% to 20% of all BPPV cases.
14) After treatment, patients were instructed to avoid bending over and to stay in the upright position for the remainder of the day (8-10 hours).

15) BPPV should be considered in all cases of posttraumatic vertigo associated with cervical symptoms or head-neck movement avoidance.

16) Every patient complaining of dizziness following head trauma should be examined using the Dix-Hallpike test even if this could provoke pain and discomfort.

17) 19% of t-BPPV patients had bilateral BPPV.

18) All of the i-BPPV patients had unilateral BPPV.

19) Otoconia are detached by trauma, caused by microscopic hemorrhages or tissue shearing.

COMMENT BY DAN MURPHY

The treatment of BPPV talked about in this article is the Epley’s canalith repositioning maneuver. I teach this maneuver in Module VIII of the ICA certification program in Spinal Trauma (Certified Chiropractic Spinal Trauma Program (800-423-4690), in the Advanced Laser Class through Erchonia (888-242-0571), and in my 11th quarter senior class at Life Chiropractic College West.

You can learn the procedure on your own by watching the video from John Epley. I have included the order form for his video.
ORDER FORM
The “Epley Maneuvers”
A Video Self-Instruction Course On
Canalith Repositioning for Treatment of BPPV
Vortex Media
545 NE 47th Ave.
Suite 212
Portland, OR 97213
The video and supporting documentation are $325.00 plus shipping and handling.
Please allow 4 to 6 weeks for shipping
Please Mail or Fax in Your Order

Name/Profession_________________________________________Quantity $___________

Address __________________________________________________Amount $___________

________________________________________________________________________Shipping $ $10.00*

City/State/Zip__________________________________________TOTAL $___________

*+$20 shipping outside North America

Phone Number______________________________________________

Method of Payment:  Check or Money Order  VISA  Master Card

Credit Card Number__________________________________________

Expiration Date_______/_________

Signature_____________________________________________________

Videotape Format

PAL          UK, West & North Europe, Brazil, Argentina, Singapore, Hong Kong
SECAM       France and most of Eastern Europe
NTSC         North America, Central America, Chile, Japan

FAX: (503) 233-6140
Referred by Daniel Murphy, DC