Modified Epley CRP in treatment of benign paroxysmal positional vertigo

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Abstract

This is a prospective study was conducted in outpatient clinic of ENT department in Al. Ramadi General Hospital from Jan.2006-Mar.2008 on 37 patient with BPPV, two patients were excluded from the study because they had cervical spine pathology. Twenty eight (80%) patients were improved with first session of modified Epley CRP (canal repositioning procedure) and five (14.28%) patients were improved with a second session, so the total numbers of patient who they improved were 33(94.28%) patients. Other 2 (5.72%) were not improved even with a second session of modified Epley CRP, and this because one patient (2.85%) suffered from migraine and the other one (2.85%) suffered from Ménière's disease. We conclude that, modified Epley CRP is effective method for treatment of BPPV.

Key words: BPPV, modified Epley CRP

Introduction

Benign paroxysmal positional vertigo is defined as recurring paroxysmal, short-lived attacks of vertigo in certain critical positions of the head in space [1]. Of all the inner ear disorders that can cause dizziness or vertigo, benign paroxysmal positional vertigo (BPPV) is by far the most common. In one large dizziness clinic, BPPV was the cause of vertigo in about 17% of patients [2]. It is a condition that is usually easily diagnosed and, even more importantly, most cases are readily treatable with a simple office-based procedure. Bárány [3] first described the condition in 1921: As a disorder of otolithic part of the vestibular apparatus [1].

In most cases, BPPV is found in isolation and termed "primary" or "idiopathic" BPPV. This type accounts for about 50%–70% of cases. The most common cause of "secondary" BPPV is head trauma, representing 7%–17% of all BPPV cases.[2-4] Other secondary causes are, viral labyrinthitis (15%) [4], Ménière's disease (5%)[5,6], Migraines (< 5%)[7,8], Inner ear surgery (< 1%).[6,9,10]

The brief period of vertigo is caused by abnormal stimulation of the dependent semicircular canal. Currently it is thought that most BPPV is caused by canalithiasis, free debris within the long arm of the semicircular canal. [11-12]

The history of violent vertigo provoked by turning into a particular position in bed, or reaching upwards in a particular direction, say to remove a book from a shelf, is very typical. Sometimes the symptoms are so severe, and so often repeated, that the patient describes continuous vertigo lasting for hours or even days, while lying in bed. Patient dissection of the story, minute by minute, may be needed to reveal the intermittent paroxysmal nature of the vertigo that distinguishes the condition from vestibular failure. [12,13]

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). [14]

Vestibular suppressant and antiemetic medication is generally ineffective in benign paroxysmal positional vertigo. In recent years treatment has been greatly enhanced by the introduction of physical treatment which disperses the canal debris. The Epley maneuver entails a sequence of movements of head and trunk to rotate the posterior semicircular canal in a plane that displaces the plug of debris from the canal into the utricle of the inner ear, where it is inactive. [15]

The status of instructions given to patients after treatment is controversial. Anecdotally, many patients are advised to minimize head turning (if necessary with a soft collar) and sleep with their head raised on pillows, with the affected ear uppermost, for 48 hours. Although this advice is based on a sound theory, there is no clinical evidence to support it. Since the instructions are difficult to adhere to strictly, it may be no more than a subtle way of shifting blame for treatment failure from doctor to patient.

The aim of this study is to evaluate the effectiveness of modified Epley CRP for treatment of BPPV.

Patients and methods

This is a prospective study was conducted in outpatient clinic of ENT department in AL-Ramadi General Hospital from Jan.2006 to March.2008 on 37 patients with BPPV, 2 patients were excluded from the study because they had cervical spine pathology. Ear, nose, and throat and neurological examinations were performed on patients who were initially seen with vertigo symptoms. Audiometric tests were conducted when indicated. The Dix-Hallpike test was performed on patients. [14]

Our patients have vertigo and vertical upbeating and torsional nystagmus toward the lower ear. Fifteen to 20 minutes after the Dix-Hallpike test, patients underwent the modified Epley CRP. During the maneuver, the patient's head was leaning off the examination table and was rotated 45° toward the affected ear. The patient was placed in a supine position with the neck forcibly extended, keeping the extension slightly less than maximal. The head was supported by the examiners, and the patient's eyes were open.

Three minutes later, the head was rotated 90° toward the other side. Care was taken during this rotation to keep the patient's head in extension and to prevent even the slightest flexion. After waiting 3 more minutes in this position, the whole body was turned 90° toward the opposite side, and the patient reclined on his or her shoulder. The patient's head was kept motionless during this rotation. Three minutes later, the patient was placed in a seated position and was brought to 20° to 30° flexion without disturbing the 45° position. Three minutes later, the head was brought into the normal position, and after waiting 3 minutes in this position, the test was completed.

Our patients were instructed to elevate their heads in bed using 2 to 3 pillows for 2 days and to refrain from turning toward the affected ear. The patients were followed up after 7 days and were evaluated using the Dix-Hallpike test. The maneuver was repeated in patients who were found to have nystagmus and vertigo.

Results

Out of 35 patients, 21(60%) were females and 14 (40%) were males with a ratio of 3:2. The age of patients range from 40 to 65 years old with mean of 48 years. Twenty eight (80%) patients were improved after first session of modified Epley CRP and 5 (14.28%) Patients were improved after second session, so the total number of patients who they improved was 33 (94.28%) patients. The other 2 (5.71%) patients were not improved with modified Epley CRP, the cause of BPPV was migraine in one patient (2.85%) and Ménière's disease in the other one (2.85%).

Discussion

The efficacy of modified Epley CRP is comparable with the Epley procedure and the Semont maneuver, with success rates ranging from 70% after single application to nearly 100% after repeated application. [15-19]

In this study 28 (80%) patients were improved after first session with modified Epley CRP, which is similar to M von Brevern et.al. study.[20] And 94.28% is the success rate after second session, which is statistically highly significant (P value <0.001), so the modified Epley CRP is highly effective in treatment of BPPV.

In our study, only 2 (5.72%) patients not improved even with second session of modified Epley CRP (one of them had migraine and the other had Ménière's disease so secondary causes of BPPV affect such form of treatment), Epley[15] reported an overall 30% recurrence of BPPV during a 30-month follow-up, while Fung and Hall[21] found that following a successful physical treatment, 34% of cases had recurrence after

a mean follow-up of 19 months. Recently, Nunez et. Al [22] recorded a recurrence of 26.8% during a mean follow-up of 26 months and calculated a yearly recurrent rate of 15%, Janet Odry Helsinki[12] et al. show 37% recurrence rate after canalith repositioning procedure with daily routine of Brandt-Daroff exercises while 47% recurrence rate without exercises in same study. So, I suggest a further study in Iraq, to know the efficacy of modified Epley CRP with long term follow-up.

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