

CASE REPORT

Rapid Subjective Vertigo and Psychological Improvement Post Gans Reposition Manoeuvre in 3 Days Duration

Zuraida Zainun^{1,4}, Nur Asyilla Che Jalil^{2,4}, Irfan Mohamad^{3,4}

¹ Department of Neurosciences, School of Medical Sciences, Universiti Sains Malaysia Health Campus, 16150 Kota Bharu, Kelantan, Malaysia

² Department of Pathology, School of Medical Sciences, Universiti Sains Malaysia Health Campus, 16150 Kota Bharu, Kelantan, Malaysia

³ Department of Otorhinolaryngology-Head & Neck Surgery, School of Medical Sciences, Universiti Sains Malaysia Health Campus, 16150 Kota Bharu, Kelantan, Malaysia

⁴ Hospital Universiti Sains Malaysia, Kubang Kerian Kelantan, Malaysia

ABSTRACT

Benign paroxysmal positional vertigo (BPPV) is one of the most common vestibular disorder worldwide. Management of this pathology is not complicated and can be done in a short period of time with a proper diagnosis and treatment technique. There are several established methods for treatment of this disease includes Epley's maneuver, Gans Canal Repositioning maneuver (Gans CRM) and others. This study reported a 38-year-old female presented with dizziness and vertigo, which is severely altered her daily activity, showed 90% improvement using the psychological effect assessment tool after three days of treatment with Gans CRM.

Keywords: Vertigo, Dizziness, Improvement

Corresponding Author:

Zuraida Zainun, PhD
Email: zuraidakb@usm.my
Tel: +609-7676405

INTRODUCTION

A lifetime prevalence of benign paroxysmal positional vertigo (BPPV) is about 2.4% (1). Other prevalence of BPPV showed 11 to 140 per 100,000 people (2). Vertigo and dizziness are significant findings in about 15% to 35% of the general population (3). Vertigo due to BPPV is caused by calcium debris in the semi-circular canals. In such a case, medication is not the treatment of choice or the final solution. It needs specific maneuver to the posterior canal includes Semont, Toupet, and Herdman maneuver since majority of the cases are posterior canal in origin (2). Hyperextension of the neck in Epley's maneuver and brisk lateral movement in Semont Liberatory Maneuver (SLM) is contraindicated in patients with vetebrovascular insufficiency, cervical spondylosis, obesity and patient with back pain. Thus, in such condition, Gans CRM is a treatment of choice (4).

CASE REPORT

A 38-year-old female with no known medical illness presented with dizziness for five days duration. It was

short duration but repetitively occurred over 5 days. The dizziness was associated with spinning sensation and worsened with sudden head movement. She also complained of floating sensation, nausea, and vomiting. The spinning sensation impaired her daily activities. She was previously experienced similar symptoms before for the past six months but in shorter duration. Otherwise, no headache or seizure noted. There was also no history of blurring of vision, impaired visual acuity, facial numbness, weakness or difficulty of swallowing seen. She did not have gait imbalance or weakness of the limb. On further questioning, no history of previous trauma to ear or head noted.

Systemic and neurological examination showed no abnormality detected with negative cerebellar signs. Pure tone audiometry test and tympanometry revealed normal hearing test. Dix-Hallpike maneuver was positive with rotatory up beating nystagmus with diagnosis of right posterior canal BPPV. Balance Exercise (Bal Ex) foam test showed positive findings for condition 2, 4 and 6 where patient fall to the right side on day 9 of attack. The patient was treated with a single Epley's maneuver on day 6 of illness but unfortunately the symptoms persisted. Treatment with Gans CRM then was carried out in the evening on the same day, with marked improvement of the symptoms. The second appointment was three days later, Gans CRM was carried repeatedly with improvement of the symptoms

about 90% on the subsequent follows up and 100% after one month duration, using the psychological evaluation ; Beck Depression Inventory, Beck Anxiety Inventory and Automatic Thought Questionnaire (ATQ) (Table I).

Table I: Subjective Measures Before and After Gans CRM

Component	Day 6 before the maneuver	Day 9 after the maneuver	1 month after the maneuver
Symptoms Modified Vertigo	10	2	0
Beck Depression Inventory	12	0	0
Beck Anxiety Inventory Malay	12	3	0
Automatic thought questionnaire	23	17	0

DISCUSSION

Benign paroxysmal positional vertigo (BPPV) is the most common peripheral vestibular disorder and common in a woman with fourth and fifth decades (5). Free-floating canaliths in the semi-circular canal lead to vertigo. The patient usually complained of spinning sensation, especially with head movement or getting up from the bed. Remission with symptoms of light-headedness is usual features in between the attack. Diagnosis of BPPV is made by history and positive finding in Dix-Hallpike maneuver. The Dix-Hallpike maneuver is the confirmatory test for BPPV. A positive Dix-Hallpike test indicates the presence of nystagmus. There are several effective manoeuvres in treating vertigo due to BPPV.

Previous studies reported that Epley’s maneuver is effective in reducing patient’s symptoms in about 47% of the cases. Some authors noted that the recovery rate is about 63.6% after one week and increased further to 72.7% after two weeks when the patient treated with Epley’s maneuver (5). For these two studies they used similar test which is Dix Hallpike test. However, as compared to this current case, the psychological improvement is about 90% after day three post maneuver and 100% after one month follow up in which patient showed complete cure with no symptoms remaining.

Gans CRM can be used in curing the BPPV since hyperextension of the neck for Epley’s maneuver and brisk lateral motion for Semont Liberatory maneuver (SLM) were contraindicated in old age patients with vertebrobasilar insufficiency, cervical spondylosis obese or in patients having backpain patient (4). The side-lying maneuver is the first step in Gans CRM. Via this technique, hyperextension of the neck in Epley’s maneuver can be avoided. Head shaking was performed in Gans CRM but not in Epley’s maneuver may be contributed to a faster effect of recovery.

Jacob and New man introduced a questionnaire to assess the presence of vertigo related symptoms after the treatment (1). It consists of 3 components that affect

daily life which includes specific questions about light-headedness or mild headache after the clinical resolution of BPPV (1). Visual-analogue scale (VAS) is another tool that can assess the effect of therapeutic maneuver. It is a day to day symptoms evaluation assessment during the follow up.

In the current case, the psychological evaluation was using Beck Depression Inventory, Beck Anxiety Inventory and Automatic Thought Questionnaire (ATQ). Psychological effects were assessed on day 6, day 9 and 1 month after the treatment. The success of the maneuver was measured by the improvement of postural stability and psychological effect on the patient. In a previously reported case, the recurrence rate of vertigo in Epley’s maneuver was high. The possibility for poor response of Epley’s maneuver is probably due to wrong techniques by physician. In contrast, a patient who underwent Gans CRM show about 80.2% clear of symptoms after one treatment and 95.5% after two treatments (4).

CONCLUSION

This case represents the rare case of fast recovery of BPPV in only three days duration using Gans CRM after failure of Epley’s maneuver therapy.

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