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Efficacy of Gans Repositioning Maneuver in Treatment of Posterior Canal Benign Paroxysmal Positional Vertigo

Dr. Vinay S Bhat

Associate Professor, Department of ENT, Adichunchanagiri Institute of Medical Sciences B.G. Nagar, Nagamangala Taluk, Mandya District, Karnataka, India

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ABSTRACT

Background and objective: posterior canal BPPV is one of the common cause for vertigo. Well established treatment methods such as semont liberatory maneuver (SLM) and epley maneuver (EM) are choice of treatment in most patients. These maneuvers are contraindicated in certain group of patients with neck, back and hip mobility issues where in gans repositioning maneuver (GRM) is tried. This study intends to assess the efficacy of this technique.

Methodology: Total of 30 patients including 15 male and 15 female patients were included in the study. All the patients underwent GRM as a definitive treatment modality. Patients who responded within 2 attempts were considered successful treatment.

Results: Out of 30 patients 27 patients (90%) were treated successfully within two attempts of GRM. 3 patients (10%) were considered unresponsive. Male patients responded better (93.3%) compared to female patients (86.7%). None of the patients had any discomfort during the procedure.

Conclusion: This study shows that GRM is an effective method in treatment of posterior canal BPPV and results are comparable to outcome of similar studies conducted by various authors using other maneuvers such as EM and SLM. Further studies which include patients with neck, back and hip mobility issues can prove its safety.

1 INTRODUCTION

Posterior canal benign paroxysmal positional vertigo (pBPPV) is the most common cause for vertigo of peripheral origin (1). The cause for intense positional vertigo in this condition is considered to be due to displacement of calcium carbonate crystals known as 'otoconia' from the otolithic organs of inner ear into the semicircular canals (2,3). The classic symptoms of pBPPV include short episodes of intense positionally provoked vertigo. The vertigo in pBPPV is typically accompanied by upbeating, rotary-torsional nystagmus with the superior pole of the eyes beating towards the affected ear (geotrophic nystagmus).

Posterior semicircular canal is the most often involved canal due to its anatomical location inferior to the utricle (4). Diagnosis of pBPPV is well established and clinically positive dix hallpike test (DHT) with typical nystagmus confirms the diagnosis and if present no further investigations need to be asked for further confirmation of pBPPV. Once confirmed the treatment of pBPPV is generally done using well established and time tested maneuvers such as epley maneuver or semonts maneuver (5,6). In general these treatment methods are very effective especially the epley maneuver which is by far most commonly used treatment modality for pBPPV (7,8). BPPV is common in old age; these patients have comorbid factors such as vertebrobasilar insufficiency, cervical spondylosis, back problems, as well as obesity. These factors must be considered during both assessment and treatment (9). Side-lying test is used as a valid alternative for assessing BPPV instead of Dix–Hallpike test as a diagnostic test in patients with comorbid factors (10). Hyperextension of the neck for Epley maneuver and brisk lateral motion for semont maneuver are contraindicated in such patients. An alternative approach known as gans repositioning maneuver (GRM) was introduced for such patients. This study was carried out to assess the efficacy of GRM in treatment of pBPPV.

2 MATERIALS AND METHODS

Total of 30 patients who were clinically diagnosed with pBPPV by dix hallpike test were included in the study. Patients with pre-existing cervical spondylosis, vertibro basilar insufficiency, and previous cervical spine surgery were excluded from the study as intention of this study was to

ascertain its efficacy before applying it on actual patients with these disorders of neck and cervical spine. Patients below age of 18 years, patients with previous diagnosis of Meniere's disease, migraine, vestibular neuritis and patients with previous history of ear surgery were also excluded from the study.

All the patients included in the study underwent gans repositioning manoeuvre by a single clinician. All patients were asked to report back after a day if symptoms are persistent. Patients with persistent symptoms underwent second attempt of GRM on next day. Failed second second attempt was considered failure of GRM and such patients underwent epleys or semonts maneuver subsequently. None of the patients received any labyrinthine sedatives after the maneuver or instructions about post maneuver restrictions.

The demographic details, complaints, and clinical examination findings of the patients were recorded in a detailed proforma and tabulated in an excel sheet and statistically analysed using SOFAstat software.

3 RESULTS

Our study included total of 30 patients out of which 15 patients (50%) were males and 15 were females (50%). Mean age of the patients was 53.57 ± 16.53 with the age ranging from 21 to 92 years. Out of 30 patients who underwent GRM 27 (90%) recovered completely within two attempts of the GRM and rest of 3 (10%) didn't improve even after second attempt and were declared unresponsive to GRM. Total of 14 (93.3%) of male patients and 13 (86.7%) female patients were successfully treated with GRM (Table. 1). None of the patients who were successfully treated with GRM had any discomfort during the procedure.

Table 1.

Gender	Number	Percent	GRM success
Male	15	50%	14 (93.3%)
Female	15	50%	13 (86.7%)

4 DISCUSSION

The GRM is a comparatively new maneuver among many time-tested maneuvers in the treatment of pBPPV. It can be called as hybrid of semont liberatory maneuver and epley maneuver with specific changes to make it safe for patients who suffer from neck, back and hip mobility issues.

Purpose of our study was to assess the efficacy of GRM in patients with clinically diagnosed pBPPV without neck, back or hip mobility issues so that it can be applied in patients with such issues if found effective. Results of our study shows that GRM is highly successful in treatment of pBPPV. 27 out of 30 (90%) patients included in our study recovered completely within 2 attempts of GRM. None of the patients complained of any discomfort during the procedure. This is reasonably excellent oucome in comparison with outcome of various other studies assessing success of epley maneuver (EM) and semonts liberatory maneuver (SLM) various studies (Table 2)

Table 2.

Study	Treatment	No of subjects	Success (%)
Semont et al (1988)	SLM	711	93%
Epley (1992)	EM	30	90%
Herdman et al (1993)	SLM	30	70%
Herdman et al (1993)	EM	30	57%
Gans and Harrington-Gans (2002)	SLM	220	73%
Current study	GRM	30	90%

Though our study shows excellent results with usage of GRM it has limitation of a smaller number of subjects and comparison group. Further studies with higher number of study subjects and studies comparing efficacy of GRM with well established techniques such as SLM and EM will confirm the outcome of this study. Further studies need to be done to assess the safety of GRM in patients with neck, back and hip mobility issues. Such studies will confirm its safety in such study subjects.

5 CONCLUSION

pBPPV is a fairly common clinical condition encountered in day to day neuro-otology as well as general practice. Epley maneuver is a well-established treatment for clinically diagnosed pBPPV but can't be done in patients with neck, back and hip mobility issues as it requires 30 to 180-degree movement of neck and significant movement of back and hip. To overcome its limitation GRM was designed. Our study included 30 patients with pBPPV and all of them underwent GRM as a treatment. We had reasonably good outcomes (90%) when compared to similar studies done using EM and SLM. This study proves its efficacy in patients without neck, back and hip mobility issues. We recommend further studies to assess its safety of GRM in subjects with actual neck, back and hip mobility issues. [1–10]

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