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Role of epley's manoeuvre in BPPV treatment: Our experience

[1] Dr. Girish F Hongal, [2] Dr. Sathyalakshmi MH
[1] Associate Professor, Dept.of ENT, the Oxford Medical College, Bangalore, Karnataka, India
[2] Assistant Professor, Department of Opthalmology, the Oxford Medical College, Bangalore, Karnataka, India

Abstract
Among the causes of Vertigo Benign Paroxysmal Positional Vertigo (BPPV) is one of the common cause where the problem lies in the Semicircular canal. Patients presented to ENT OPD with history of giddiness referred by Physician and Ophthalmologist to rule out ENT causes, of these 78 patients out of 396 were diagnosed to be suffering from BPPV. It was observed more common in the age groupn between 4th to 7th decades. The youngest patient reported was 41 years and oldest was 72 years. In this group there were 52 males and 26 females. The main modality of treatment was Epley's Manoeuvre in cases diagnosed Dix-Hallpike positive patients diagnosed as BPPV. The mean age was 57.5 and all the cases were followed for about one year for the recurrence among which 12 patients had recurrence and with repeated Epley's Manoeuvre had recovery.

Keywords: Benign Paroxysmal Positional Vertigo (BPPV), epley's manoeuvre, dix-hallpikes manoeuvre

Introduction
BPPV is one of the common cause of the vertigo especially common in patients between 40 to 70 years of age. Physicians often miss the diagnosis of BPPV and over investigate, BPPV can even occur concommittently with other middle ear disorders like CSOM.
Barany is the first one to describe BPPV in 1921 [1]. He also explained the cause for BPPV lies in Otolithic organs. Dix and Hallpike performed a provocative positional testing for BPPV in 1952 which is the Standard clinical test for the diagnosis of BPPV and is named after them in their honour.
As the onset of BPPV is sudden patients usually wake up in the morning with giddiness [6]. Soon patient will notice that the vertigo triggers in some particular position and avoid it. If go undiagnosed and untreated symptoms may persist for years together. In many cases symptoms may resolve by itself without any treatment. There is also chances that it may recur spontaneously. In severe cases it may be associated with nausea and vomiting. In a particular head position patient may feel as though they are suddenly thrown out in to a rolling spin, toppling towards the side of the affected ear with nystagmus. This may last for about 20 to 30 seconds[1] and the patient becomes comfortable.

Materials and Methods
This study was carried out on patients attending ENT, Ophthalmology and Medicine Outpatients who were referred to ENT opd to rule out ENT cause for giddiness and Nystagmus. Thorough physical and ENT examination is carried out in all patients reporting with giddiness. Spontaneous if any noted. Tests for Cerebellar function in form of asynergia, asymetria, rebound and disdiadokokinesis carried out to rule out cerebellar causes of vertigo. Also thorough Ophthalomolgy examination was done to rule out any ophthalomological causes of vertigo.
Dix Hallpike manoeuvre is the standard clinical test for BPPV. The test is performed by making the patient to sit upright on an examination couch and the head is turned to one side at 45 degree and then briskly taking head backwards with head hanging at 30 degree below the couch backwards. Patient is instructed to not to close eyes during the procedure and look in to the eyes of examiner. Wait for about 20-30 seconds for nystagmus to appear. If no nystagmus is noticed make the patient sit up. Same procedure is repeated on the other side with head turned 45 degrres to the other side. If the Dix Hallpike Procedure does not evoke any nystagmus it is declared as negative. However if it produces nystagmus along with vertigo it confirms the diagnmosis of BPPV. The classic BPV of Posterior semicircular canal produces geotrophic rotatory nystagmus associated with vertigo lasting for few seconds. The fast component of Nystagmus is towards undermost (affected) ear. Purely horizontal nystagmus indicates horizontal nystagmus indicates horizontal Semicircular canal involvement.

Methodology

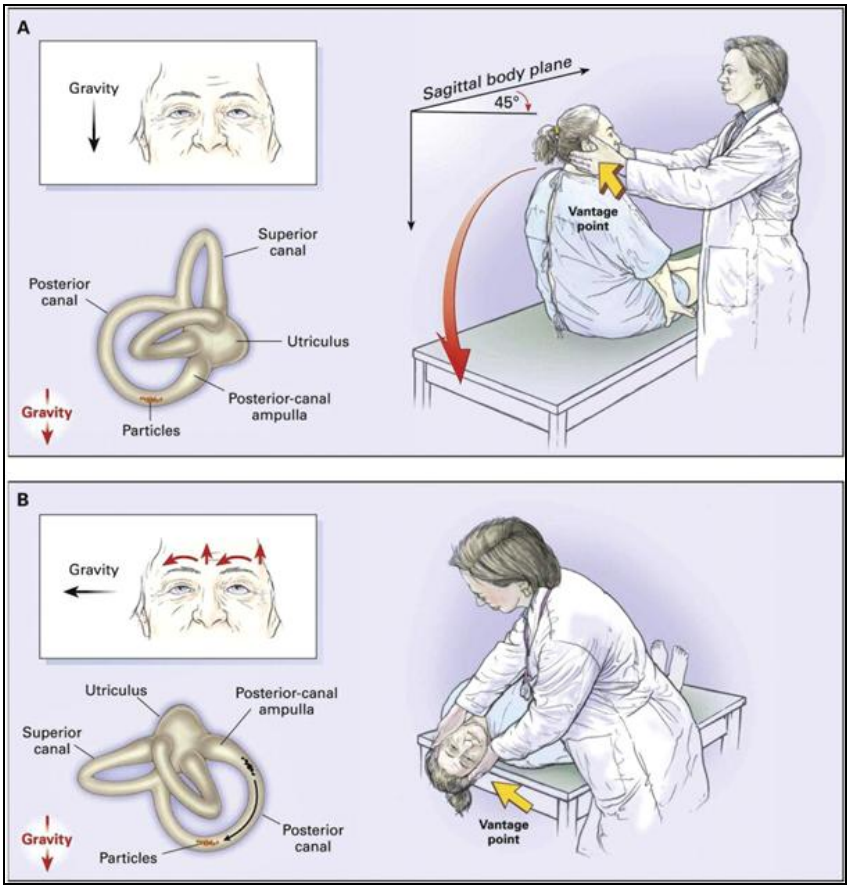

Fig 1: Dix-Hallpike Procedure

Treatment

Though BPPV is some times resolves without any treatment definitive treatment consists of Epley's Manoeuvre [2]. Most of the time cause for BPPV is Idiopathic sometimes can be caused by trauma to head, otitis media, vestibular neuronitis, Meniere's disease, sudden sensorineural hearing loss etc.

Epley's Manoeuvre consists of placing the head in five positions in a systemic manner.

Position 1: patient is made to sit on a couch with head tilted 45 degree towards the affected ear and rapidly brought down in head hanging position. There is a brief latent period of about 20-3- seconds when the nystagmus appears. And patient feels giddiness. Keep the head in the same position till the nystagmus disappears.

Position 2: Head is turned towards opposite side with the affected ear upside and keep in the same position for about 2 minutes.

Position 3: Along with head whole body is turned away from the affected side by about 45 degree to a lateral recumbent position and hold it for about 2 minutes.

Position 4: Slowly patient is brought to sitting position with head turned away from affected side by 45 degrees. Keep in the same position for 2 minutes.

Position 5: While patient in sitting posture bring his face forwards with chin 20 degrees downwards and hold for about 2 minutes.

After these Manoeuvre patient is advised not to lie down for about 12 hours. In addition to this patient is asked to not to look up for at least a week.

Results & Discussion

Eliciting proper history is key to the provisional diagnosis of BPPV and Positive Dix Hallpikes Procedure is always confirmatory to the diagnosis of BPPV. The Aetiology of Idiopathic BPPV is Vague. It's thought to be degenerative process in the vestibular organ. Otoconia from utricular macula get detached. These crystals of Calcium Carbonate float freely in endolymph of vestibule and get deposited in posterior Semicircular canal which get stimulated with change of head position causing vertigo. In our study causes of BPPV was idiopathic. Other causes of BPPV could be head trauma, otitis media, vestibular neuronitis, Meniere's disease, Sudden sensorineural hearing loss etc [1].

Epley's Manoeuvre is nothing but repositioning of detached particles of otoconia [3, 4]. This procedure can give excellent results provided carried out properly and patient follows the instructions strictly. Recurrences are known to occur but same Manoeuvre can be repeated. In some of the refractory cases obliteration of posterior semicircular canal with bone dust has been described. Other surgical procedures like Singular neurectomy which carries risk of Sensorineural deafness and section of vestibular nerve supplying posterior semicircular canal cariies postoperative morbidity.

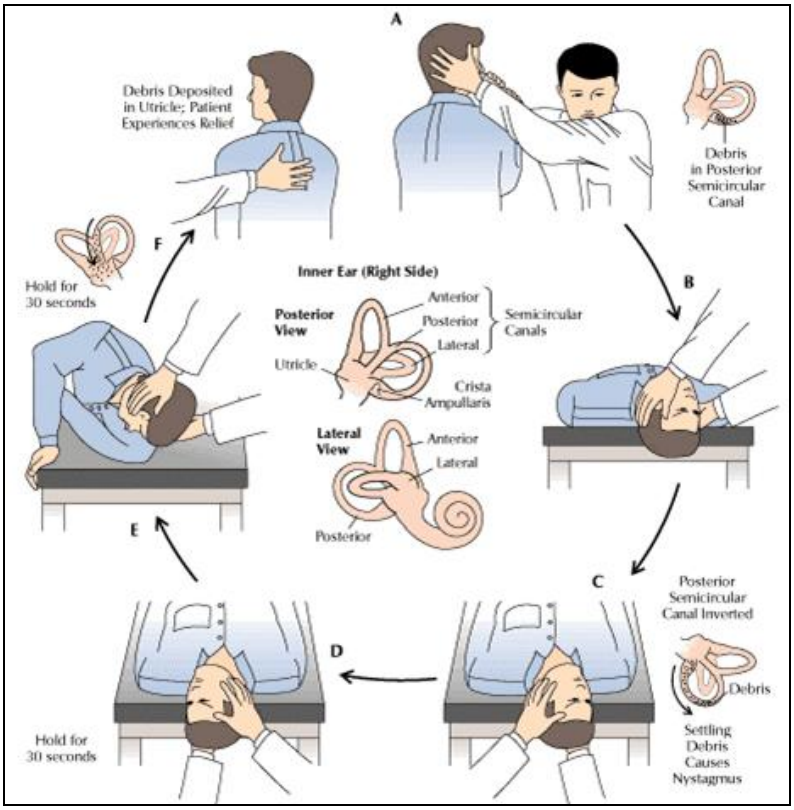

Fig 2: Epley's Manoeuvre

Semont's Manoeuvre is another non invasive procedure used for the treatment of BPPV. The results of which are not reliable and literature ragring its results are less in standard text books.

Conclusion

As per the results of our retrospective study Epley's Manoeuvre is very effective in treating the patients suffering from posterior semicircular canal BPPV. Recurrences are known to occur but repitation of Epley's manoeuvre properly and with proper instructions followed by the patient will definitely give good results. In most of the cases patients relieved of symptoms. Medical management in the form of vestibular sedatives have no role in management of BPPV. Surgical management of BPPV is invasive, expensive and also requires specialized training. Epley's manoeuvre is the single most cost effective treatment modality for BPPV [5].

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