ORIGINAL ARTICLE

Dizziness, A Review of Walk-In Patients at a Specialised Neurotology Clinic

R Philip, MMed ORL-HNS, N Prepageran, FRCS

Department of ENT, Universiti Malaya Medical Centre, Hospital Raja Permaisuri Bainun Ipoh, Jalan Hospital, 30990, Ipoh, Perak

SUMMARY

A retrospective review of 100 walk-in patients at a specialized neurotology clinic in dizziness at a tertiary referral centre is presented. The most common cause of dizziness was BPPV, forming 31% of the cases. Other causes in order of frequency include recurrent vestibulopathy, idiopathic causes, Meniere's disease and central causes.

KEY WORDS:
Vertigo, Dizziness, Benign paroxysmal positional vertigo (BPPV)

INTRODUCTION

Dizziness is a non-specific complaint of unsteadiness or imbalance which can originate from disorders of many systems including the peripheral vestibular system, central nervous system, cardiovascular system, drugs or even psychogenic. Vertigo is defined as an illusion of movement and is a symptom of a disorder of the vestibular system. It can be peripheral or central in origin. The vestibular system is frequently implicated as a cause of dizziness and a common cause of referrals to the ENT clinic. The specialized neurotology clinic in Universiti Malaya Medical Center was set up in 2004 to systematically evaluate patients from medical, paediatric, psychiatric, neurosurgical and ENT clinics that required further evaluation for dizziness.

MATERIALS AND METHODS

The study is a retrospective review of case-records of patients seen at the specialized neurotology clinic Universiti Malaya Medical Centre for a two year period from 2004 to 2006. Most of these patients were referred from the ENT clinic and Neurosurgical clinic of University Malaya Medical Centre and ENT clinics from Klang Valley region. All patients seen at the clinic, a total of 100 patients were included in the study.

The patients were interviewed and a detailed history was taken regarding their symptoms. A general examination was performed including a neurological assessment with particular emphasis on cranial nerves, cerebellar and gait evaluation.

Otologic examination consisted of otoscopy and tuning fork tests. Oculomotor and special tests of vestibular function were then performed. These included the Halmagyi maneuver, head shake test, oscillopsia test and vestibular ocular reflex (VOR) suppression. Finally a Dix-Hallpike positional test and hyperventilation test for 60 seconds were performed.

Following the history taking and clinical examination, further audiological and vestibular investigations were ordered as necessary. These included audiometry, a full electronystagmography (ENG) test, caloric tests and dynamic postulography. MRI or a CT scan was done if a central cause was suspected.

Once a diagnosis is established, the patients are referred back to the primary referral unit for follow-up and continued management.

RESULTS

A total of 100 patients were included in the study. The male to female ratio was almost 1:1 with 49 males and 51 females. The ethnic breakdown of these patients was Chinese 43, followed by Indians 29 and Malays 28.

The majority of the patients, 88% were above the age of 40. There was one patient at age 11 and two in their twenties. The mean age of male patients was 53.1 and female patients 51.6 years. (Fig.1)

Peripheral vestibular causes accounted for 66% of the patients in this review. Benign Paroxysmal Positional Vertigo (BPPV) was the most common diagnosis, with 31% of the patients. This was followed by Recurrent Vestibulopathy (RV) at 29%. In 27 cases no cause was identifiable. In the last category, "others", one patient had a psychogenic cause; one had high frequency hearing loss; another had post-traumatic dizziness while the last was due to postural hypotension. (Table I). The three patients with central causes were due to posterior fossa tumors.

Nineteen patients had hypertension and two patients had diabetes mellitus.

DISCUSSION

Dizziness always presents as a challenge to the clinician. The term itself is non-specific and encompasses a wide range of symptoms including light-headedness, imbalance, fainting spells and disequilibrium. The patients themselves are usually middle-aged and often with other co-morbid factors. As such doctors in various settings and specialities often face patients with 'giddy' or 'dizzy' patients.

These patients are often referred to an ENT unit to rule out a vestibular cause. Vestibular disorders can be of peripheral or central in origin. Peripheral vestibular disorders stem from

This article was accepted: 17 February 2009
Corresponding Author: Philip Rajan, Pakar ENT, Jabatan ENT, Hospital Raja Permaisuri Bainum Ipoh, Jalan Hospital, 30990, Ipoh, Perak
Email: prajan333@yahoo.com

Table I: Diagnosis of dizzy patient

Diagnosis	No of Patients
Recurrent Vestibulopathy (RV)	29
Benign Paroxysmal Positional Vertigo (BPPV)	31
Delayed Endolymphatic Hydrops (DEH)	2
Meniere's Disease	4
Central	3
Idiopathic	27
Others	4

Table II: Causes of Peripheral Vertigo from Malaysian series

Peripheral Vestibular Disorder (%)	RD Ponniah (1977)	G Krishnan (1994)	Present Study
BPPV	14	5.6	31
Recurrent Vestibulopathy			29
Meniere's Disease	8.5	22.4	4
Delayed Endolymphatic Hydrops			2
Vestibular Neuronitis	18	4.7	
Ototoxicity	1.5		
Vestibular Insufficiency		0.9	
Total	42	38.3	66

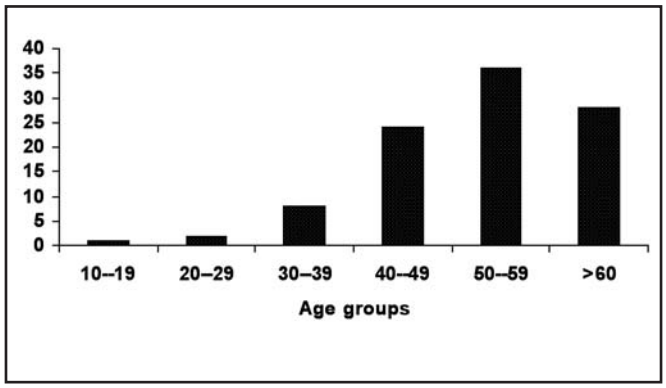

Fig. 1: Age distribution of patients

pathologies affecting the vestibular apparatus of the inner ear and vestibular nerve. These include BPPV, vestibular neuronitis, Meniere's disease, labyrinthittis, perilymphatic fistula and superior semi-circular canal dehiscience. Central disorders are those conditions affecting the central nervous system such as strokes, tumors, aneurysms and multiple sclerosis.

A detailed history is mandatory to arrive at a diagnosis. This is complemented by a complete physical examination with an emphasis on postural blood pressure, cardiovascular, neurological and ENT examination.

At the neurotology clinic a series of clinical maneuvers are applied on the patient. These tests are the 'Halmagyi' test or head thrust, head shake test, oscillopsia, vestibule-ocular reflex (VOR) suppression. These clinical tests are specific for the VOR and aid in the diagnosis of a peripheral vestibular disorder. Oscillopsia is blurring of vision following head movement and occurs in bilateral peripheral vestibular loss as in gentamicin vestibulotoxocity[1]. Special vestibular investigations such as caloric tests, electronystagmography (ENG) test and dynamic postulography were ordered as necessary. The value of these specialized tests has been questioned[2]. Data from this institution correlating the accuracy of these tests with the diagnosis is currently under study.

The majority of the patients in this series were above the age of 40. The peak incidence was in the 5th and 6th decades of life. This differs slightly from two previous studies at this institution where there is a slightly younger preponderance. However this may be reflective of the nature of referrals to this clinic. Acute causes of vertigo such as vestibular neuronitis were fairly common in those series and affected a younger population[3,4]. (Table II) Such cases would have been successfully managed by the attending physician and would not have required a referral to the unit.

In this series, 66% of the patients had a peripheral vestibular cause for their dizziness. Similar studies at this institution in the past showed a peripheral vestibular cause at 42%[3] and 38.3%[4] respectively. The incidence of a peripheral vestibular cause from other series ranges from 38 – 64.7%[5-7].

BPPV was the most common peripheral vestibular cause in our series with a prevalence of 31%. Similarly other studies have reported BPPV to be the leading cause of peripheral vertigo with an incidence of 12%- 36.5%[5-7].

Recurrent vestibulopathy (RV) was second most common cause of dizziness. RV is a clinical syndrome of unknown aetiology that is characterized by more than a single episode of vertigo similar to Meniere's (i.e. lasting from a few minutes up to 24 hours) but without auditory or neurological signs and symptoms[7,8]. At the University of Toronto, multidisciplinary clinic, RV was similarly found to be the second most common cause of peripheral vertigo[7]. Long term follow-up of up to 8.5 years of patients diagnosed with RV at that centre showed a change in diagnosis in 22% of the patients (14% Meniere's disease and 8% BPPV)[7,9]. The prognosis for spontaneous resolution of RV is good, with two thirds of the patients experiencing complete resolution of vertigo over a follow-up period of 8.5 years[9].

Despite successfully diagnosing 73% of the patients referred, diagnosis still remains uncertain in 27% of patients in our series. The incidence of undiagnosed cases in other series range from 9% - 49%[4,5,7]. A repeat evaluation is often necessary and may sometimes yield the aetiology. Psychogenic causes from psychiatric disorders or anxiety (hyperventilation syndromes) although found in only one patient in our series has been reported to be as high as 32%[5]. This again, may be reflective on the nature of referrals to the unit.

CONCLUSION

Approaching a dizzy patient requires a systematic evaluation. A detailed history taking and clinical examination often leads to a diagnosis. BPPV was the most common cause of dizziness in this series. Awareness of this condition and a proper Dix-Hallpike test would aid diagnosis and reduce unnecessary investigations and referrals. Re-evaluation and regular follow-up may sometimes be necessary if the diagnosis is elusive. Although central causes are not common, it is important that these conditions are excluded.

REFERENCES

1. Rutka JA. Physiology of the Vestibular System. In: Roland PS, Rutka JA (eds). Ototoxicity. London: BC Decker. 2004; 24-5.
2. Hoffman RM, Einstadter D, Kroenke K. Evaluating dizziness. Am J Med. 1999; 107(5): 468-78.
3. Ponniah RD. A study of the aetiology of vertigo in Malaysia. Med J Malaysia. 1977; 32(1): 41-4.
4. Krishnan G. A review of the management of 107 dizzy patients at the university hospital. Med J Malaysia. 1994; 49(1): 44-8.
5. Drachman D, Hart C. An approach to the dizzy patient. Neurology 1972; 22: 323–34.
6. Bath AP, Walsh RM, Ranalli P, Tyndel F, Bance ML, Mai R, Rutka JA. Experience from a multidisciplinary "dizzy" clinic. Am J Otol. 2000; 21(1): 92-7.
7. Heaton JM, Barton J, Ranalli P, Tyndel F, Mai R, Rutka JA. Evaluation of the dizzy patient: experience from a multidisciplinary neurotology clinic. J Laryngol Otol. 1999; 113(1): 19-23.
8. Leliever WC, Barber HO. Recurrent vestibulopathy. Laryngoscope 1981; 91: 1–6.
9. El-Kashlan HK, Telian SA. Diagnosis and initiating treatment for peripheral system disorders: imbalance and dizziness with normal hearing. Otolaryngol Clin North Am. 2000; 33(3): 563-78. Review.