ORIGINAL ARTICLE

A Review of the Management of 107 Dizzy Patients at the University Hospital

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Summary

A review of 107 case notes of patients complaining of dizziness was made.

The common investigations done were pure tone audiometory, electronystagmography, X-ray of the internal auditory meatus, CT-scan of the internal auditory meatus and X-ray of the cervical spine. After the examinations and investigations only 52 patients out of the 107 could be given any diagnosis. The most common diagnosis for the vertigo was Meniere's disease.

Key words: Vertigo, vestibular function tests, Electronystagmography

Introduction

Dizziness is a common problem in general practice and also in ENT practice. Vertigo is an illusory sensation of movement in space. This sensation is usually of a rotatory type but can be a linear one too. Vertigo is the only direct symptom of a vestibular abnormality. In meeting a patient with dizziness a doctor can get quite uneasy as he can't get a diagnosis in a short time in a busy clinic. Vestibulogy has greatly helped in the management of dizzy patients. The first hurdle in the diagnosis of the dizzy patient is in the distinction that has to be made whether a lesion is vestibular or extravestibular. The aim of this study is to review the management of vertigo patients.

Materials and Methods

A total of 107 case notes of patients who were seen at the ENT clinic for complaints of dizziness from 1984 - 1991 were studied. These patients were seen on their own visits to the ENT clinic or were referred from general practitioners or doctors in University Hospital to exclude ENT causes for the dizziness. On their initial visit these patients, if ambulant or between episodes of dizziness, were investigated on an outpatient basis. If their symptoms were very intense and patients were incapacitated, they would be warded for investigation and treatment. The majority of these patients were investigated on an outpatient basis. On the initial visit a full history was taken. A general examination including a neurological examination was done.

The ENT specialist would then do a battery of tests including pure tone audiometry tympanometry and a full ENG test which include gaze tests, eye tracking tests, optokinetic tests, positional tests, rotation tests and caloric tests. If the ENG recording is suggestive of a central lesion, a CT scan of the brain can be suggested. If the initial audiometry suggests a unilateral deafness, then a brainstem evoked response audiometry was done. An X-ray of the internal auditory meatus or a CT scan of

the internal auditory meatus was done. If patients had any complaints of arthritis or stiffness of the neck, X-rays of the cervical spine were also done. Patients were also tested for postural hypotension.

Whenever, these tests did not provide a cause or etiology for vertigo, the tests must be evaluated in the light of the patient's history and examination findings, as well as other laboratory tests, to yield a diagnosis.

Results

They were a total of 107 patients in these series with 61 males (57%) and females (43%). The ages ranged from 17-73 years. Fifty-six patients (52.3%) were discharged from the clinic. But 33 patients (30.8%) defaulted treatment. A total of 18 patients (16.3%) were referred to other units for treatment. Spontaneous nystagmus was seen in three (2.8%) patients.

Hearing loss, tinitus and vertigo was seen in nineteen (17.8%) patients. Hearing loss and vertigo alone was seen in 39(36.5%) patients. Forty-nine patients (45.8%) had vertigo alone.

Most of the patients were in the 30-50 years age group. The peak age group was 30-40 years as shown in Figure 1. Fifty-five (51.4%) patients could not be given a definite diagnosis though they had some evidence of sensorineural deafness but no tinitus or fluctuating hearing loss. These patients had visited the clinic on an average of 2-6 visits for at least 3-4 months duration for treatment. Some of these patients had visited the clinic periodically and were only given conservative treatment.

In this series, 15 patients (14.0%) were suffering from hypertension and five patients 4.6 per cent were suffering from diabetis mellitus.

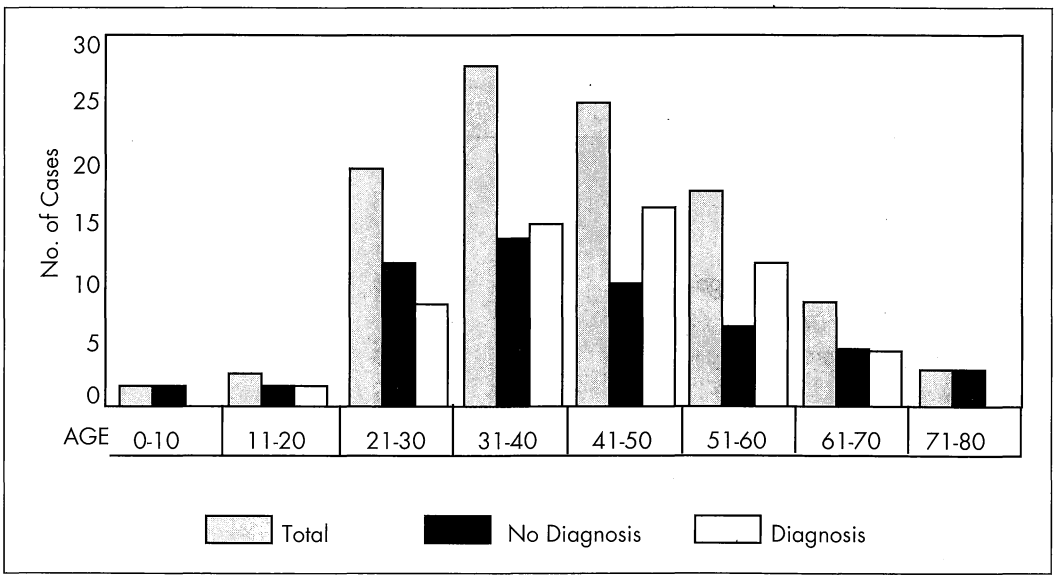

Fig. 1: Distribution of Cases Against the Age in Years.

Table I
Results of Investigation

Investigation	Number of Patients		
	Normal	Abnormal	Total
Audiology Pure tone audiometry	66	41 Sensorineural loss	107
Electronystagmography (ENG)	85	22 Canal Paresis + Direction Preponderance	107
Brainstem Evoked Response Audiometry	13	4 Cochlear Lesion - 3 Retrocochlear Lesion - 1	17
X-ray cervical Spine	7	8 Cervical Spondylosis	15
X-ray Internal Auditory Meatus	14	1 Expansion of IAM	15
CT Scan Internal Audiotory Meatus	13	1 Acoustic Neuroma	14

Table II
Diagnosis and Number of Patients

Diagnosis	No. Patients	%
Menieres	24	22.4
Vestibular Neuronitis	5	4.7
Vestibular Insufficiency	1	0.9
BPPN/BPPV/Postural Vertigo	6	5.6
Anxiety/Stress/Depression Grandmal Epilepsy/Temporal Lobe Epilepsy	6	5.6
Labyrinthitis	2	1.9
Cervical Spondylosis	3	2.8
Head Injury/Post Concussion Vertigo	1	0.9
Mastoid (Post op.)	1	0.9
Otosclerosis	1	0.9
Acoustic Neuroma	1	0.9

Discussion

The vestibular system is a finely tuned system with a tonic discharge even at rest. Any upset in the balance of the nerve discharge between the paired vestibular end organs or their primary receiving area in the vestibular nucleus in the brainstem (other than caused by head or body movement) will produce a mismatch between the vestibular input and other sense organs that will lead to an illusory sensation of motion in space called vertigo[1]. The subjective sensation of motion is a phenomenan of cerebral origin so it is learned by habituation. Sensation of motion is the only interpretation the cerebral cortex can give to the vestibular stimulus that results from any change in the balance between the two paired vestibular apparatus or their central connection[1]. Vertigo can be caused by a variety of peripheral and central causes, of which peripheral causes are more common.

Most patients with vestibular problems have a history of episodes of attacks and will have no signs or symptoms at the time of presentation. Hence the best 'test' of vestibular dysfunction is a good history. In taking the history one should try to distinguish vertigo or illusion of movement in space, from other symptoms like light headedness (Syncope), ataxia and pyschogenic symptoms (feeling of dissociation).

In this study 19 (17.7%) patients had history of tinitus, hearing loss and vertigo. There were 39 (36.5%) patients with hearing loss and vertigo and 49 (45.8%) patients had vertigo alone. Nystagmus was rarely seen by the examining physician in this study. Only three patients had clinically detectable nystagmus as most of the patients were seen after the severe episode when the symptoms were decreasing.

Benign positional vertigo forms only about 5.6 per cent of the patients studied; the symptoms are severe when the patient lies on the side of the affected ear, the vertigo rarely lasted more than a minute. In this series 4.7 per cent had been diagnosed as vestibular neuronitis. Meniere's Syndrome patients had vertigo and could be diagnosed from the presence of accompanying fluctuating hearing loss and tinnitus. They formed the largest group of patients (22.4%).

In 15 patients suspected of cervical arthritis, eight patients had disc degenerative changes. Three of these patients' dizziness were diagnosed as due to cervical spondylosis as all other investigations were normal. There was one patient who had developed dizziness, difficulty of concentration, headaches after a head injury and cerebral concussion. He was diagnosed as post concussional vertigo.

Seizures like temporal bone epilepsy can produce an aura of vertigo. They were two cases of epilepsy who had vertigo in this study.

In this group of patients studied, there were eight (7.5%) who were being treated by the psychiatrist simultaneously for stress, depression and anxiety. Out of the eight patients, six patients had normal results from ENT investigations including ENG and audiology. However, one had a canal paresis without hearing loss and another had mild sensori-neural hearing loss. Some have said that psychiatric patients may have dissociation symptoms and vertigo, or may have vertigo due to the medications they may take. The cause of vertigo for this group of patients with normal ENT examinations is difficult to say. They formed 7.5 per cent of patients in this group.

The vestibular system unlike other sensory system responds to internal changes. Hence, the functioning of the system cannot be directly observed. But their function can be observed in humans by its effect on the motor system, especially the eye movement and postural movements. Electronystagmography

is a common method of testing vestibular function by recording nystagmus produced by the various vestibular function tests. Studies have shown the diagnostic value of eye tracking and optokinetic tests are mainly useful for detecting central lesions[2,3]. However, one test alone is not sufficient for detecting central lesions. Electronystagmography of 79.4 per cent of our patients were normal. Whereas only 20.6 per cent had some evidence of canal paresis and directional preponderance. Most of the patients who showed these changes were subsequently diagnosed as Meniere's disease. However, only one patient had been diagnosed as a case of acoustic neuroma. Most of the other cases had normal ENG findings. Electronystamography though elaborate and time consuming has not been able to shed light on the majority of vertigo patients.

Brain stem evoked response audiometry is also useful in detecting the nature of hearing loss especially if it is unilateral, and in establishing if it is cochlear on retrocochlear pathology.

CT scans have been more reliable to detect intracranial or internal acoustic meatus pathology. But of late, Magnetic Resonance Imaging is turning out to be more helpful than CT scans[4].

After the investigations and diagnosis, some of the patients improved and were discharged. The main concern was to exclude acoustic neuroma or any central pathology. If no such evidence was found most of the patients were discharged or given conservative treatment only. A total of 30.8 per cent of patients defaulted. Eighteen patients were referred for further treatment to other units. Hence a number of patients apparently discharged themselves after getting better. The review of case notes of more than a hundred of these patients infers that they have benefitted from the treatment. This is evidence that the present method of investigations and management is adequate. The impression is borne out of the fact that after treatment, no cases of a missed central lesion or acoustic neuroma subsequently emerged.

In conclusion, the management of patients with vertigo need not be a perplexing problem. With the type of investigations mentioned, these cases can be systematically analysed and effectively managed without any doubt. However, the cause of some of patients' vertigo will never be unravelled though we can exclude obvious central and peripheral causes.

References

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