Clinical Features of Migrainous Vertigo

Gülden Akdal
Dokuz Eylül University Faculty of Medicine Department of Neurology, İzmir, Türkiye

Abstract
The relation between migraine and vertigo has been noticed for a long time ago. In recent years, the growing numbers of investigations have showed the significant relation between these two diseases. In this study clinical features of forty-four patients with migrainous vertigo diagnosis were discussed.

Keywords: Migrain, vertigo, imbalance

INTRODUCTION
The clear association between migraine and vertigo has been shown in numerous studies. A population based study in Turkey showed that the prevalence of migraine in ages between 15-55 was found to be 16.4 %. It was reported that migraine could cause six or more lost work days annually in men and woman. The prevalence of migrainous vertigo (MV) was reported 1 % in a population based epidemiological study. This study also showed that even doctors were not familiar with this clinical situation. MV may also effect quality of life in sufferers as reported in migraineurs.

MV was first used by Neuhauser et al. Different names were given by different groups in order to define this clinical presentation. Migraine related vestibulopathy, vestibular migraine, migraine associated dizziness and vertigo as a migraine equivalent were some examples of given names by different researchers.

Neuhauser et al. also suggested a clinical criteria in order to diagnose MV. In this study we investigated our data from balance outpatient clinic according to the criteria suggested by Neuhauser et al., and discussed the clinical and laboratory findings of these patients having MV.

METHODS
The records of patients seen in balance clinic between December 2005 and March 2008 were retrospectively evaluated. All patients were seen personally by the author. Three hundred forty eight patients who were referred with vertigo or imbalance were seen during the above period. Neurotological examination
including bithermal caloric test (30 and 44° C) (asymmetric response was defined as if it was hyporesponsive or unresponsive), positional test, head thrust test (first described by Halmagyi and Curthoys in 1988, a simple bedside test for evaluating vestibulococular reflex function during rapid head turns)(5), head shaking nystagmus, tandem walking, Romberg test, sharpened Romberg test were done and eye movements were evaluated in every patient with and without Frenzel's goggles. All patients had undergone bedside clinical tests for hearing impairment. All patients had magnetic resonance or computed tomography imaging before they were referred to our clinic and these results were reevaluated. For MV diagnosis criteria suggested by Neuhasuer et al were used.\(^{11}\) These criteria described definite and probable migrainous vertigo diagnosis. Neuhauser criteria requires definite migraine diagnosis according to International Classification of Headache Disorders II\(^{(7)}\) and exclusion of other causes for definite and probable MV diagnosis. Definite MV diagnosis requires recurrent episodic vestibular symptoms of at least moderate severity and one of the following migrainous symptoms during at least two vertiginous attacks: migrainous headache, photophobia, phonophobia, visual or other auras\(^{(11)}\). Probable MV diagnosis requires recurrent episodic vestibular symptoms of at least moderate severity and one of the following-migrainous symptoms during ≥2 attacks of vertigo; migraine-precipitants before vertigo in more than 50% of attacks; food triggers, sleep irregularities, hormonal changes; response to migraine medications in more than 50% of attacks\(^{(11)}\).

**RESULTS**

There were forty four patients with MV diagnosis out of 348 admitted patients. There were 9 migraineurs with visual aura and 35 without visual aura diagnosed according to the International Classification of Headache Disorders II\(^{(7)}\). The prevalence of MV was 13% in our clinic including definite and probable MV together. Twenty four patients fulfill the criteria for definite MV diagnosis and twenty patients fulfill the criteria for probable MV diagnosis. Mean age of the both group was 41.9±12. There were only three men in MV group.

*Features of vertigo and dizziness:* Three patients had ony imbalance complaints. The rest of the patients had rotational vertigo as the main complaint but they had also illusory self motion or object motion, positional vertigo and head motion intolerance additionally. The percentage of these symptoms were shown in Table 1. in detail.

*Response to caloric test:* Eighteen patients had normal caloric response. Twenty three patients had asymmetric caloric response. Three patients had bilateral hyporesponsive results and they fulfilled the criteria for definite MV.

*Head-thrust test and head shaking nystagmus:* Eleven patients had abnormal head thrust tests. Five patients had positive head shaking nystagmus.

*Sharpened Romberg test:* Thirty five patients had positive sharpened Romberg test.
**Table 1:** Neurootological manifestations of MV.

<table>
<thead>
<tr>
<th>Features of vertigo and dizziness*</th>
<th>Ratio (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rotational Vertigo</td>
<td>66</td>
</tr>
<tr>
<td>Illusory self or object motion</td>
<td>16</td>
</tr>
<tr>
<td>Positional vertigo</td>
<td>18</td>
</tr>
<tr>
<td>Head motion intolerance</td>
<td>14</td>
</tr>
<tr>
<td>Caloric responses</td>
<td></td>
</tr>
<tr>
<td>Normal caloric response</td>
<td>41</td>
</tr>
<tr>
<td>Asymmetric hyporesponse or unresponsiveness</td>
<td>52</td>
</tr>
<tr>
<td>Bilateral hyporesponse</td>
<td>7</td>
</tr>
<tr>
<td>Head-thrust test and head shaking nystagmus</td>
<td>25</td>
</tr>
<tr>
<td>Head-thrust test</td>
<td>25</td>
</tr>
<tr>
<td>Head-shaking nystagmus</td>
<td>11</td>
</tr>
</tbody>
</table>

*Several patients had more than one complaint

**DISCUSSION**

Our data showed that MV patients not only admit with rotational vertigo complaints but also with pure imbalance. In addition to rotational vertigo, MV patients may have head motion intolerance, illusory self or object motion and positional vertigo which should not be misinterpreted as benign paroxysmal positional vertigo. In this study, definite and probable MV patients were analysed together, since etiology was the same and treatment approaches should be the same.

Studies showed that MV occurred more often in patients without aura, our findings also supported this feature.\(^{2,8,11}\)

Caloric responses were abnormal in 59% of patients. It seemed slightly high but in the reported series the response to caloric tests varies.\(^{4}\)

Head-thrust test was positive 25% in our patients. Head-thrust test was an easy bedside examination which gave significant information about the peripheral vestibular system. For a variety of unilateral vestibular loss specificity was 97%, but sensitivity was low.\(^{14}\)

In order to perform the test adequately patient concentration was necessary. Head shaking nystagmus which was positive 11% in our patients gave also valuable information about the vestibular system. Specificity of this test for different types of unilateral vestibular loss was 75% and sensitivity was also low.\(^{14}\)

A positive sharpened Romberg test was found in chronic vestibular defects.\(^{14}\) Sharpened Romberg test was positive in 80% of our patients which showed a disturbance in their balance. A study done in our clinic showed that migraineurs without history of vertigo had balance problems.\(^{1}\) The balance problems in migraineurs were not uncommon.

MV patients may be admitted to otorhinolaringology and neurology outpatient clinics and diagnosis of such patients could be challenging. Since MV diagnosis depended on history of migraine, migrainous symptoms during vertigo attacks and exclusion of other causes,\(^{9}\) examination in out patient clinic or bedside may help to make the diagnosis without referring patients to neurotology or balance clinics for advanced investigation.

MV was reported to be the second common cause of recurrent vertigo after benign paroxysmal positional vertigo.\(^{9}\) Neurologist and otolaringologist should be
familiar with the presentation and clinical features of MV. In conclusion, the features of patients presented here will help doctors seeing patients with vertigo and imbalance.

Correspondence to: Gülden Akdal
E-mail: gulden.akdal@deu.edu.tr

Received by: 04 April 2008
Accepted : 13 May 2008

REFERENCES