

Psychogenic Vertigo

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ABSTRACT

Psychogenic vertigo is a disorder that merits attention from both ENT and psychiatry services as its genesis and complex symptomatology have roots in both these fields. This article is an endeavor to sift through all information that is available about it and present concisely about its evolution, its current status and all clinical aspects that are of contemporary relevance.

Keywords: Vertigo, Dizziness, Psychogenic, Cognitive therapy, Behavioural.

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INTRODUCTION

Psychogenic vertigo has always been an ambiguous disorder with diffuse symptomatology which is confusing to diagnose and difficult to treat. This article is an attempt to look at it from all perspectives—lateral and longitudinal, and provide a comprehensive sum-up.

Firstly, though we will be using the term ‘psychogenic vertigo’ throughout this article, it has recently been deemed outdated. Presently the term ‘psychiatric dizziness’ is preferred.¹

Initially it was thought to be purely a psychiatric pathology mimicking ENT symptoms; but lately, discovery of underlying biological mechanisms have thrown light onto evidence of concrete neuro-otological involvement in this disorder. At present, it is viewed as an interface between the two with significant somatopsychic considerations. So now, even within the ambit of psychogenic vertigo, purely psychogenic vertigo is a diagnosis of exclusion.²

Currently, the term ‘psychiatric dizziness’ is used when symptoms are recognized as part of psychiatric illness or cannot be explained entirely by vestibular dysfunction.¹

Epidemiology

Exact incidence and prevalence of psychogenic vertigo are hard to pinpoint. However, up to 60% of cases presenting with chronic dizziness were found to have primary or secondary anxiety.^{3,4} Young women are most likely to present with vertigo as a part of primary psychiatric disorder. But men, especially older men, have a stronger correlation between vertigo and development of psychiatric problems (usually neurotic features) secondary to it.⁵

A study by Furman et al showed that 50% of patients of dizziness with anxiety features turn out to have a pure psychiatric pathology—most commonly anxiety disorder,

followed by somatization and depression; 30% have mixed pathology. 15% have a purely organic disorder while 5% have idiopathic etiology.⁶

Also, patients with predisposition to both neurotic (anxiety) as well as space motion discomfort (SMD) traits and patients who are more dependent on visual stimuli due to deficits in their vestibular and equilibrium mechanisms are certain high-risk groups who are likely to develop psychogenic vertigo.⁷

Evolution of Disorder

The earlier impression of psychogenic vertigo only being a symptom representative of ongoing psychiatric illness has now, given way to a deeper and multidimensional understanding of how the symptom of vertigo, psychiatric disorders and neuro-otological dysfunction are related. The present understanding of relation between vertigo and psychiatric disorders in terms etiology and clinical presentation is discussed here:

The etiological relation of vertigo to psychiatric symptoms can be classified as:⁶

- *Predisposition:* Individuals possessing anxiety-prone, avoidant traits by virtue of their genetics, if suffering from vertigo due to neuro-otological dysfunction, are predisposed clinical psychiatric disorders like depression and anxiety.
- *Precipitation:* Vertigo can be precipitated as a psychiatric symptom as a part of certain disorders in the neurotic spectrum like panic attacks, panic disorder with or without agoraphobia, anxiety disorders, depression, conversion disorders, post-traumatic stress disorder (PTSD) and very rarely even psychosis.
- *Provocation:* Excessive/pathological responses to stressful life events are suggestive of maladaptive coping. These in turn can precipitate recurrent vestibular dysfunction like Ménière's disease and vestibular migraine.
- *Perpetuation:* Once vertigo sets in, even if the causative neuro-otological dysfunction abates, it can sustained by biopsychological factors like cognitive distortions like catastrophic thinking and learning of maladaptive patterns via classical and operant conditioning, e.g. chronic subjective dizziness (CSD), migraine-anxiety-related dizziness (MARD).⁷

Presentation-wise, psychogenic vertigo can occur as:⁸⁻¹⁰

- A symptom (in anxiety, depression, conversion, post-traumatic stress and rarely psychosis where there is no vestibular dysfunction).

- A part of or a whole syndrome [panic disorder with or without agoraphobia, acrophobia,¹¹ postural phobic vertigo (PPV), CSD, MARD where there may be an associated vestibular pathology].
 - Psychological overlay of organic vertigo/somatopsychic effects of disequilibrium in certain vulnerable individuals with predisposing psychopathological traits/conditions.
- Otherwise vertigo and psychiatric symptoms can occasionally present as a chance concurrence.¹⁰

Therefore, psychiatric dizziness is now considered to be of three types—psychogenic, neuro-otogenic and mixed.⁸

Causative Factors

In present day, the etiology can be divided broadly under three headings—neuroanatomical, psychodynamic and cognition/learning related factors.

Neuroanatomical Considerations

Overlapping clinical presentations between vertigo and anxiety and other neurotic disorders has always made the scientific community wonder about the presence of a neurological linkage.¹ A study by Hibbert¹² demonstrating both vertigo and panic attacks can be precipitated by hyperventilation, strengthened the assumption of common neurological pathways being activated.

Brandt had findings¹³ suggesting motorist disorientation syndrome, visual and postural phobic vertigo were implicative of a mixed rather than purely psychological etiology as earlier thought.³ In accordance, Yardley et al¹⁴ found deficits in spatial orientation and attention in central processing in these patients.

Guidetti et al¹⁵ found a link between the labyrinth and the limbic system, laying the foundation for the further and extensive research that has happened since then.

Now, a plethora of neuroanatomical networks involved have been brought to fore. They are:^{1,16}

- Afferent interoceptive information processing system: Integrate information regarding current sensory processes relative to current physiological conditions in body; translates into subjective awareness and feelings.
- Vestibular-parabrachial nucleus network: Parabrachial nucleus seat of integration of vestibular, visceral and nociceptive stimuli; connected to infralimbic cortex and amygdala which give rise to the emotional component - conditioned fear and anxious-avoidant reactions. It is thus also an inbuilt threat-evaluation system.⁸
- Cerebral cortical vestibular and interoceptive processing system: It is a gateway for vestibular information to interact with conscious sensory and cognitive processes.

- Raphe nuclear - vestibular network: Consists of multiple serotonergic and some dopaminergic projections to multiple cortical, midbrain and brain stem areas which regulate cognitive, affective and autonomic responses.
- Coeruleovestibular network: Has noradrenergic projections and involved in causation of anxiety and panic symptoms.
- Dorsal raphe nucleus-locus coeruleus loop: Has profusion of serotonergic and nonserotonergic projections which mediate sensorimotor, interoceptive and cognitive processes.
- Monoamine projections to vestibular nuclei are implicated in genesis of pain and anxiety secondary to vestibular symptoms.
- Higher cortical regions which are connected to both limbic system and thalamus receiving vestibular inputs mediate cognitive reactions to vestibular symptoms.
- Cortical projections to brain stem from limbic areas cause other autonomic symptoms associated with vertigo and related anxiety.

Psychodynamic Considerations

In the pre-biological era, when psychogenic vertigo was thought to be a purely psychiatric disorder, psychiatrists attempted to explain the causation of the symptoms using a school of psychological thinking called 'Gestalt' psychology.¹⁷

In this, vertigo is explained as follows:

There is a large field of conscious phenomena which is localized in space. This can be divided into two functional units. One is the space occupied by our bodies—a constantly changing model called a schema. Another schema represents the external world. These two schemata are interdependent. Perception of proprioception which influence the body schema is influenced by the attributes of the external environment and the external environment in turn is perceived within the body schema is by virtue of its interpretation by the body's proprioceptors. They interact in a continuous, complex and dynamic manner with each other. Any disharmony between the spatial orientations of the body and environment schemata give rise to the perception of vertigo.

In cases of psychogenic vertigo, unconscious elements of spatial orientation are brought into consciousness and physically expressed, causing dissonance between the two schemata. This expression is symbolically representative of patient's difficulty with his environment and can be suggestive of conflicts inside him that make him feel he has 'lapsed', 'fallen' or 'about to fall/meet his downfall'.

This explanation still holds true in cases of purely psychogenic vertigo.

Cognition and Learning related Considerations

Cognitive responses that perpetuate a second layer of psychological dysfunction are catastrophic thinking and dysphoric ruminations (repetitive thoughts).⁸ Catastrophic thoughts about consequences of being dizzy and apprehensive ruminations about its chronicity keep the symptom in conscious focus - magnifying the adverse effects of conditioning and emphasizing handicap in daily functioning.¹⁸

Maladaptive learning involves classical and operant conditioning. Classical conditioning associates motion, visual and other stimuli (even though they are not triggering an organic reaction) with sensation of dizziness and other reflexive responses, e.g. autonomic symptoms while operant conditioning associates them with sensation of dizziness and other learned behaviors, e.g. seeking reassurance.

Symptomatology

Symptoms are vague and no consensus is seen in literature.

Earlier, vertigo with anxiety features and without apparent organic pathology was described as a part of functional symptoms³—early and late; early functional symptoms were more common and were said to be indicative of neurosis. Other symptoms like blurred consciousness, drop attacks, memory loss, sense of unreality, worsening of vertigo in noisy environments were also taken into consideration. The character of vertigo itself was described as ‘turning inside head’.

Brain, in later times, described psychogenic vertigo as having disequilibrium-like symptoms—feeling of unsteadiness of gait or falling sensations.¹⁷

Brandt et al postulated that psychogenic vertigo escalated in gradual crescendo pattern terminating suddenly and associated with anxiety throughout the episode.¹³

Symptoms suggestive of organic pathology may be present in case of comorbid neuro-otological dysfunction. Usually none of them, even nausea or nystagmus, are present if vertigo is only psychogenic without any vestibular dysfunction.⁸

There will be symptoms of associated psychiatric pathologies if any are present (e.g. anxiety, depression, somatization, PTSD, conversion et cetera). There may be associated phobia of developing of symptoms outside home and so self-imposed sociooccupational restrictions as well.¹⁸

Diagnosis

This disorder can be diagnosed on basis of a good history, clinical examination and investigations.

In history, some symptoms in anxious patients point to vestibular dysfunction, rather than ruling it out. They are known under the heading of space and motion discomfort (SMD) and consist of a feeling of queasiness at heights in crowds, if seeing busy/hectic patterns (on walls, floors, visual display units, etc.) and soft/vibrating floors. Earlier these symptoms were considered representative of purely psychogenic vertigo but now, newer research shows that they indicate organic pathology.¹

While examining the patient, the clinician should look out certain signs suggestive of anxiety disorders like exaggerated acoustic startle response and autonomic signs suggestive of sympathetic overdrive.¹

Hyperventilation test can delineate whether a patient of psychogenic vertigo has organic pathology or not.^{4,8} Califano et al demonstrated that though hyperventilation precipitated vertigo in all patients, hyperventilation-induced nystagmus was absent in patients having purely psychiatric etiology though they reported the subjective sensation of dizziness.¹⁹ Vestibular testing in patients of panic symptoms, acrophobia or agoraphobia may yield results indicative of organic dysfunction. On the other hand, investigations like provocative caloric testing, atypical or bizarre responses may point to true psychiatric manifestation.¹³ Testing for spatial orientation and attention may show deficits in patients of PPV, CSD et cetera.¹⁴

To supplement the diagnosis further, objective evaluation tools like rating scales and questionnaires can be used. Self-reported questionnaires like Patient Health Questionnaire (PHQ)⁸ can be used. Wilhelmsen et al found the Vertigo Symptom Scale—Short Form (VSS-SF) with a subscale of ‘autonomic-anxiety’ useful in supplementing the detection of patients of psychogenic vertigo.²⁰

Treatment

Interdisciplinary approach with involvement of both ENT and psychiatry services is paramount.^{1,6,14,16}

First, the patient has to be psychoeducated regarding nature of their vertigo.

Otoneurologic rehabilitative and integrative therapies have been shown to be beneficial in these patients.^{7,8} Vestibular and balance rehabilitation therapy (VBRT) for vestibular dysfunction has shown positive psychological benefits—diminished motion sensitivity, improved confidence in balance, less catastrophization and less avoidance behavior.

Psychiatric therapies like autogenic or systemic desensitization have shown benefits in reducing avoidant and phobic responses and decreasing anxiety.^{11,21} These therapies are useful in patients not showing improvement

on conventional treatment or having persistent anxiety, insomnia or multiple somatic complaints. Cognitive behavior therapy can be used to correct faulty cognition like catastrophic thinking and develop positive coping skills.⁸

Pharmacological management plays a role too. A trial of conventional treatment for vertigo can be given. For psychogenic vertigo, however a trial of selective serotonin reuptake inhibitors (SSRIs) like paroxetine, fluoxetine, sertraline and citalopram in conventional doses for 20 weeks can show some encouraging results.¹¹ Tricyclic antidepressants like amitriptyline in lower doses (10-100 mg; mean dose, 50 mg) and sometimes, benzodiazepines (long-acting ones like diazepam and clonazepam in conventional doses) and ion-gated channel blockers (like nimodipine and flunarizine) may also show benefits.¹⁶

It should be remembered that these modalities should be tried judiciously according to patient's disorder profile and random single or combination therapy is avoidable.

CONCLUSION

Psychogenic vertigo has always presented a dilemma in detection, diagnosis and treatment. However, with careful consideration of symptomatology and investigations, a clinician can determine the nature and extent of psychiatric involvement in the patient's vertigo and treat accordingly. A successful treatment outcome can be mutually beneficial—recovery for the patient and an enriching experience for the clinician.

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