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Vertigo and psychological disorders

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Abstract. *Vertigo and psychological disorders.* Vertigo may be a symptom of psychiatric illness. Alternatively, vestibular dysfunction or other organic causes of dizziness may trigger psychiatric disorders such as anxiety, depression or panic attacks. Different mechanisms might account for the link between anxiety and vestibular disorders. The ENT specialist must be aware of this reality to take into account the psychological dimension of vertigo in his diagnosis approach. This may lead to different types of treatment depending of the nature of the disorder. Some questionnaires can be useful in this respect.

Introduction

Dizziness caused by vestibular dysfunction, like pain and many other illnesses, involves psychological reactions.[1] These consequences can vary considerably depending on whether or not psychiatric patients are involved. On the other hand, vertigo can be a symptom of a psychiatric disorder with no objective symptoms of a disorder of the vestibular system or of other neurological pathologies. However, this dichotomy in which psychological difficulties are the cause or the consequence of dizziness generally fails to reflect the complex reality and leads to sub-optimal care. Typically, neurotologic disorders and psychiatric disorders coexist and interact.[2]

Discussion

Vertigo can be defined as an illusion of motion. As an illusion, it is a subjective sensation involving the subconscious and depending on the central nervous system status of the patient. The interpretation of a vestibular disorder depends on the emotional condition of the patient. Many factors have to be considered: the personality of the subject, the subject's relationship with the doctor, the subject's understanding of the pathology and the memory of similar sensations experienced before.

The psychological reactions associated with dizziness can be particularly important for different reasons. First of all, vertigo can result in limitations on everyday life (social contacts, professional abilities, mobility). This can contribute to a reduction in self-esteem and further depression. Secondly, vertigo often evolves unpredictably, with fluctuations in the intensity of imbalance. This unpredictable component of vertigo is a factor leading to anxiety and may lead to phobic avoidance responses in specific situations. The role of close relations is very important too. They often have difficulty in understanding what is happening to the patient, particularly in the absence of obvious symptoms. This lack of understanding can lead to poor support and exacerbate the psychological difficulties of the vertigo patient.

The interactions between vestibular disorders and psychiatric disorders can be explained by somatopsychological mechanisms, psychosomatic mechanisms and by neurological linkage mechanisms.[2]

Somatopsychological mechanisms involve the psychological and behavioural consequences of vestibular dysfunction. One possible consequence is anxiety. DSM-IV (Diagnostic Manual of the American Psychiatric Association) lists 11 anxiety disorders.[3] Three of these are "Panic Disorder without Agoraphobia", "Panic Disorder with Agoraphobia" and "Agoraphobia without any history of Panic Disorder". In these disorders, an association with vestibular disorder is likely to be found. Dizziness is often situation-specific. Vestibular disease therefore favours avoidance responses in some situations, and these responses are sometimes confused with psychogenic vertigo. The

mismatch between the three sensorial inputs (vestibular, visual and proprioceptive) can lead to dizziness even in healthy individuals (physiological vertigo). In vestibular disorders, the patient can develop unusual sensitivity to some stimuli or inadequate balance strategies (visual dependence for example).[4] Space and motion sensitivity is a heightened awareness of non-vestibular sensation. This can interfere with social activities and lead to psychological decompensation.

Agoraphobia is defined in DSM-IV as anxiety about being in places or situations in which escape might be difficult or help might not be available in the event of a panic attack or panic-like symptoms. Most, but not all, people with panic disorder develop at least some degree of agoraphobia. In extreme cases, an individual with panic disorder and agoraphobia may be completely unable to leave the house. More typically, people with agoraphobia experience some restrictions in what they are able to do but they are able to leave the house, especially if they are accompanied by someone they know. In some cases, agoraphobia may be explained by a psychological mechanism (panic disorders). In others, it can be thought of as functional dizziness. Agoraphobia may be a reaction to dizziness rather than a cause, a reasonable adaptation to conditions that affect balance in an unpredictable way: open places have neither surfaces that can be used for support nor close visual references.[4] The feeling of dizziness and subjective postural imbalance associated with anxiety felt in wide open spaces and public places may be initiated by the physiological impairment of visual control over body sway linked to the distance to stationary objects in the seen environment.[5]

Acrophobia results when physiological height vertigo induces a conditioned phobic reaction characterised by dissociation between the objective and the subjective risk of falling.[1] It is likely to occur as a post-traumatic neurotic reaction, sometimes initiated by a traumatic lesion of the otoliths. Like agoraphobia, then, it can be seen as functional vertigo.

The syndrome of phobic postural vertigo, which was described by Brandt,[1] is characterised by a combination of situational triggered panic attacks including vertigo and subjective postural and gait instability, and the fear of imminent death. Patients complain of vertigo rather than anxiety and feel physically ill. This syndrome could be explained by the hypothesis that an impairment of the space constancy mechanism leads to partial uncoupling of the efferent copy for active head movements. This triggers phobic attacks. Brandt claims that it represents the third cause of vertigo in specialist consultations. Clinical experience does indicate that there are people with positional vertigo who are conditioned to be dizzy, with or without objective signs of vertigo. At present, this syndrome is of uncertain validity or significance as it lacks a specific test for diagnosis.

Psychosomatic mechanisms involve an alteration in vestibular function as a result of psychiatric conditions. As awareness and somnolence affect the vestibular function (modifying the gain of the VOR), anxiety and hyperventilation can affect vestibular responses. Some patients, after compensation of a peripheral vestibular disease (initial major rotational vertigo), still complain of chronic indefinite dizziness and postural imbalance because of psychiatric disorders (anxiety and phobic postural imbalance).

In addition to psychiatric dizziness and balance disorders without any psychiatric troubles, and the functional overlap between both types of troubles, vestibular disorders and psychiatric disorders in some individuals could be manifestations of a common underlying disorder of the central nervous system. This is called linkage and may apply to some patients with anxiety disorders. The explanation could be that there are shared brain pathways that mediate autonomic responses. The effect of some neurotransmitters (noradrenalin and serotonin) may also play a role.[6]

Many dizzy patients present with psychological decompensation because of vertigo, but some personalities are more at risk: obsessive-compulsive personalities, perfectionist traits, pre-existing anxiety or depressive problems, somatisation.[1,4] Some studies have shown a relationship between a specific psychologic profile and the development of Ménière's disease. Those studies are controversial.[7,8] Some people are predisposed to develop a high degree of anxiety when they experience difficult situations such as dizziness. The borderline between physiological vertigo induced by sensorial mismatches and true kinetosis, for example, is not always evident. Dizziness that occurs after an accident (post-traumatic vertigo) also seems to be associated with a high risk of psychological decompensation.

Vertigo can also be a symptom of mental disorder. In psychiatric

dizziness, the dizziness is part of a recognised psychiatric syndrome: dizziness in panic attack and abnormal gait in conversion hysteria are typical examples. Here, dizziness cannot be explained by vestibular dysfunction.

As doctors, we must be able to distinguish between psychological problems caused by vertigo and true psychiatric disorders. In the latter case, patients should be referred to a specialist service. There should be an adequate otoneurologic assessment beforehand. Unnecessary and prolonged examinations must be avoided, for obvious economic reasons, but more to avoid to reinforcing patient belief in an organic illness.

Putting aside this psychiatric pathology, ENT clinicians should be able to manage therapy for our patients, even if they have psychological problems. This assumes a willingness to listen, which in turn implies providing enough time in our consultations. After a full and thorough examination, patients should receive the most complete information possible about their illness: symptoms, consequences, evolution, and proposed treatment. Where possible, and subject to the agreement of the patient, it can be very useful to provide that information in the presence of close relations. A better understanding of the disorders, organic disorders and psychological reactions will help them to support the patient. A close relationship with the doctor gives patients a reassuring feeling and prevents the development or the aggravation of neurosis. The treatment should include vestibular training. This helps to develop vestibular compensation and to recover adequate balance strategies. It also plays a role in psychological support for the patient. In some cases, pharmacotherapy, psychotherapy and behavioural therapy should be considered. We must remain aware that most of the medical treatments used for anxiety, depression and dizziness interfere with central vestibular compensation.

Because subjective perceptions are very important in the psychological domain, the use of questionnaires in the examination phase can be helpful. Some questionnaires evaluate the handicap caused by vertigo; others are more psychological, tending to evaluate patient levels of depression or anxiety. Repeating the questionnaire later is one way of assessing patient progress and psychological disorders. This can provide information about the efficiency of our therapeutic approach and, depending on the results, about the eventual need for specialist psychiatric advice. Another advantage of the systematic use of such questionnaires is the possibility of including some psychological aspects of the management of vertigo in multi-centre studies. Those questionnaires are particularly useful in this area, but they should never become a substitute for the clinical sense of the practitioner based on professional experience and a good relationship with the patient. The questionnaire structures mean that they provide a picture of situation of the patient at a very specific point in time. This may not be an accurate reflection of reality when there are fluctuations in symptoms. The subjective nature of most of the questions means that the questionnaires are comparable from time to time in the same patient but do not allow for meaningful comparisons between patients.

Three questionnaires have been included at the end of this paper in the English versions. Where translated versions have been validated, they have also been included.

Conclusion

Psychogenic vertigo can be broken down into three forms: vertigo as a symptom (anxiety, depression, hysteria, psychosis, post-traumatic syndrome, stimulation); vertigo as a defined syndrome: agoraphobia, acrophobia, phobic postural vertigo (which is controversial); and the psychological overlay of organic vertigo syndromes in predisposed personalities and manifest psychiatric disorders.

The need to take into account the psychological dimension of pathology in our otoneurologic consultations is now well established. Ideally, the scope of those consultations should include all pathologies. This implies attentive and focused listening from the physician. Adapted questionnaires can be useful, providing information about depression or anxiety and the handicap caused by this pathology.

Questionnaires

HAD (Hospital Anxiety and Depression scale)[9]
For each item select the reply which comes closest to how you have been feeling in the past weeks.
- most of the time
- a lot of the time
- from time to time
- not at all

1. I feel tense or wound up
2. I still enjoy the things I used to enjoy
3. I get a sort of frightened feeling as if something awful is about to happen
4. I can laugh and see the funny side of things
5. Worrying thoughts go through my mind
6. I feel cheerful
7. I can sit at ease and feel relaxed
8. I feel as if I am slowed down
9. I get a sort of frightened feeling like butterflies in the stomach
10. I have lost interest in my appearance
11. I feel restless as if I have to be on the move
12. I look forward with enjoyment to things
13. I get sudden feelings of panic
14. I can enjoy a good book or radio or TV programme

HAD (french version)[10]
Pour chaque item, sélectionnez la réponse qui convient concernant les semaines qui ont précédé.
- la plupart du temps
- souvent
- de temps en temps
- jamais

7 items d'anxiété (A), 7 items de dépression (D), cotation de 0 à 3

A/ 01. Je me sens tendu ou énervé
D/ 02. Je prends plaisir aux mêmes choses qu'autrefois
A/ 03. J'ai une sensation de peur comme si quelque chose d'horrible allait m'arriver
D/ 04. Je ris facilement et vois le bon côté des choses
A/ 05. Je me fais du souci
D/ 06. Je suis de bonne humeur
A/ 07. Je peux rester tranquillement assis à ne rien faire et me sentir décontracté
D/ 08. J'ai l'impression de fonctionner au ralenti
A/ 09. J'éprouve des sensations de peur et j'ai l'estomac noué
D/ 10. Je ne m'intéresse plus à mon apparence
A/ 11. J'ai la bougeotte et n'arrive pas à tenir en place
D/ 12. Je me réjouis d'avance à l'idée de faire certaines choses
A/ 13. J'éprouve des sensations soudaines de panique
D/ 14. Je peux prendre plaisir à un bon livre ou à une bonne émission de radio ou de télévision

DHI (Dizziness Handicap Inventory)[11,12]
The Dizziness Handicap Inventory (DHI) can be used to determine the level of impairment felt by patients with dizziness. It incorporates the measurement of emotional function and the physical impact of the dizziness on the person's life.

Answer by No, Sometimes or Yes.

1. (P) Does looking up increase your problem?
2. (E) Because of your problem do you feel frustrated?
3. (F) Because of your problem do you restrict your travel for business or recreation?
4. (P) Does walking down the aisle of a supermarket increase your problem?
5. (F) Because of your problem do you have difficulty getting into or out of bed?
6. (F) Does your problem significantly restrict your participation in social activities such as going out to dinner going to the movies dancing or going to parties?
7. (F) Because of your problem do you have difficulty reading?
8. (P) Does performing more ambitious activities such as sports, dancing, household chores such as sweeping, or putting dishes away increase your problems?
9. (E) Because of your problem are you afraid to leave your home without having someone accompany you?
10. (E) Because of your problem have you been embarrassed in front of others?
11. (P) Do quick movements of your head increase your problems?
12. (F) Because of your problem do you avoid heights?
13. (P) Does turning over in bed increase your problem?
14. (F) Because of your problems is it difficult for you to strenuous housework or yard works?
15. (E) Because of your problem you are afraid people may think you are intoxicated?
16. (F) Because of your problem is it difficult for you to go for a walk by yourself?
17. (P) Does walking down a sidewalk increase your problem?
18. (E) Because of your problem is it difficult for you to concentrate?
19. (F) Because of your problem is it difficult for you to walk around your home in the dark?
20. (E) Because of your problem are you afraid to stay home alone?
21. (E) Because of your problem do you feel handicapped?
22. (E) Has the problem placed stress on your relationships with members of your family or friends?
23. (E) Because of your problem are you depressed?
24. (F) Does your problem interfere with your job or household responsibilities?
25. (P) Does bending over increase your problem?

(E): emotional items
(F): functional items
(P): physical items

Responses: No = 0 point
Sometimes = 2 points
Yes = 4 points

Sub score for Emotional items = sum of points for questions 2 9 10 15 18 20 21 22 23 /36
Sub score for Functional items = sum of points for questions 3 5 6 7 12 14 16 19 24 /36
Sub score for Physical items = sum of points for questions 1 4 8 11 13 17 25 /24
Total score = sum of points for all 25 items /100
The higher the score is the greatest the handicap.

Questionnaire D.H.I (French translation by J. P. Demanez, Université de Liège, 1991)

Instructions: Le but de ce questionnaire est de déterminer les difficultés que vous éprouvez dans la vie courante par le fait de vos vertiges et de votre déséquilibre. Veuillez répondre à chacune des questions selon le code suivant:

0 = non, jamais.
1 = rarement.
2 = parfois.
3 = souvent.
4 = oui, en permanence.

Pour évaluer votre réponse, tenez compte exclusivement de l'influence éventuelle de vos malaises vertigineux ou de déséquilibre pendant la période des quatre dernières semaines._

1. (p) Le fait de regarder vers le haut accentue-t-il vos troubles?
2. (e) A cause de votre problème, vous sentez-vous découragé(e), désappointé(e)?
3. (f) A cause de vos malaises, limitez-vous vos déplacements professionnels ou de loisir?
4. (p) Vous déplacer dans une allée de grande surface commerciale augmente-t-il vos troubles?
5. (f) Par le fait de vos malaises, avez vous des difficultés à vous mettre ou à sortir du lit?
6. (f) Votre problème limite-t-il votre participation à des activités sociales comme dîner à l'extérieur, aller au spectacle, en soirée ou au dancing?
7. (f) Vos troubles réduisent-ils votre capacité de lire des livres ou des revues?
8. (p) Le sport, la danse ou des tâches ménagères (entretenir la maison, remettre la vaisselle...) accentuent-ils votre problème?
9. (e) A cause de vos malaises, évitez-vous de sortir de chez vous non-accompagné(e)?
10. (e) Votre problème a-t-il été responsable d'une sensation d'embarras face aux autres?
11. (p) Les mouvements brusques de la tête accentuent-ils vos troubles?
12. (f) En raison de vos malaises, évitez-vous les hauteurs, chaise, échelle, balcon?
13. (p) Vos troubles augmentent-ils lorsque vous vous tournez dans votre lit?
14. (f) Eprouvez-vous des difficultés à exécuter des tâches soutenues, dans le ménage ou dans le jardin?
15. (e) Du fait de vos troubles, craignez-vous que l'on vous considère en état d'ivresse?
16. (f) Du fait de votre problème, vous est-il difficile d'aller vous promener seul(e)?
17. (p) Votre malaise s'accroît-il lorsque vous marchez le long d'un trottoir?
18. (e) A cause de vos troubles, éprouvez-vous des difficultés de concentration?
19. (f) Eprouvez-vous des difficultés à sortir autour de votre maison?
20. (e) En raison de votre problème, craignez-vous de rester seul(e) chez vous?
21. (e) A cause de vos malaises, vous sentez-vous physiquement diminué(e)?
22. (e) Vos troubles ont-ils été responsables de relations tendues avec des membres de votre famille ou avec des amis?
23. (e) A cause de votre problème, vous sentez-vous dépressif(ve)?
24. (f) Vos troubles ont-ils une conséquence sur vos responsabilités professionnelles ou familiales?
25. (p) Vous pencher en avant accentue vos malaises?

0 = non, jamais.
1 = rarement.
2 = parfois.
3 = souvent.
4 = oui, en permanence.

FACTEUR
physique: 1, 4, 8, 11, 13, 17, 25 /28
fonctionnel: 3, 5, 6, 7, 12, 14, 16, 19, 24 /36
emotionnel: 2, 9, 10, 15, 18, 20, 21, 22, 23 /36

DHI (Dutch version)[13]

Het doel van deze vragenlijst is te bepalen in hoeverre u moeilijkheden ondervindt door uw probleem van duizeligheid en instabiliteit. Wilt u de vragen beantwoorden met ja, nee of soms. Bij het beantwoorden van de vragen moet u steeds voor ogen houden dat ze betrekking hebben op uw probleem van duizeligheid en instabiliteit. Indien u een situatie die we beschrijven niet hebt ervaren, probeer dan te denken aan een vergelijkbare situatie waarin u zicht hebt bevonden en antwoord voor die situatie.

P1 Neemt uw probleem toe wanneer u naar boven kijkt?
E2 Voelt u zich gefrustreerd door uw probleem?
F3 Beperkt u het reizen door uw probleem (zowel op privé- als op beroepsvlak)?
P4 Neemt uw probleem toe wanneer u in de supermarkt tussen de rekken loopt?
F5 Is het moeilijk om uit bed te komen door uw probleem?
F6 Beperkt uw probleem ingrijpend uw sociale leven (uit eten gaan, naar de film, gaan dansen, ...)?
F7 Wordt lezen bemoeilijkt door uw probleem?
P8 Neemt uw probleem toe wanneer u meer actief bent zoals bij sporten, dansen, het huishouden doen (poetsen, de vaat wegzetten, ...)?
E9 Bent u, door uw probleem, bang om het huis te verlaten zonder dat iemand u vergezelt?
E10 Door uw probleem, voelt u zich beschaamd in bijzijn van anderen?
P11 Neemt uw probleem toe door snelle hoofdbewegingen?
F12 Vermijdt u hoogtes door uw probleem?
P13 Neemt uw probleem toe bij het omdraaien in uw bed?
F14 Door uw probleem, is het moeilijk om inspannend werk te doen in huis of in de tuin?
E15 Door uw probleem, bent u bang dat mensen zouden denken dat u dronken bent?
F16 Door uw probleem, kunt u moeilijk alleen wandelen?
P17 Neemt uw probleem toe bij het wandelen op het voedpad?
E18 Door uw probleem, kunt u zich moeilijk concentreren?
F19 Door uw probleem, hebt u moeilijkheden om in het donker in uw huis te lopen?
E20 Door uw probleem, heeft u angst om alleen thuis te blijven?
E21 Voelt u zich gehandicapt door uw probleem?
E22 Heeft u probleem voor spanning gezorgd in uw relatie met familie of vrienden?
E23 Voelt u zich depressief door uw probleem?
F24 Heeft uw probleem invloed op uw verantwoordelijkheden in uw beroep of uw taken thuis?
P25 Neemt uw probleem toe wanneer u zich bukt?

P: physical
F: functional
E: emotional

PHQ (Patient Heath Questionnaire)[14,15]

The PHQ questionnaire is a very complete questionnaire exploring all fields of health. PHQ-9 is a more concise version, which has been standardised and validated by a lot of studies for the diagnosis and follow-up of depressive problems. This version seems to be the most useful in the management of dizzy patients.

PHQ-9
Name:
Age:
Sex:
Date:

1. Over the last 2 weeks, how often have you been bothered by any of the following problems?

0 not at all
1 several days
2 more than half the days
3 nearly every day

a. Little interest or pleasure in doing things
b. Feeling down, depressed, or hopeless
c. Trouble falling or staying asleep, or sleeping too much
d. Feeling tired or having little energy
e. Poor appetite or overeating
f. Feeling bad about yourself, or that you are failure, or have let yourself or your family down
g. Trouble concentrating on things, such as reading the newspaper or watching television
h. Moving or speaking so slowly that other people could have noticed? Or the opposite: being so fidgety or restless that you have been moving around a lot more than usual.
i. Thoughts that you would be better off dead during or of hurting yourself in some way.

2. If you checked off any problem on this questionnaire, how difficult have these problems made it for you to do work, take care of things at home, or get along with people?

not difficult at all
somewhat difficult
very difficult
extremely difficult

Score of Quick Depression Assessment
1-4 minimal
5-9 mild
10-14 moderate
15-19 moderately severe
20-27 severe

PHQ-9 (Dutch)
Naam:
Leeftijd:
Sex:
Datum:

A. Hoe vaak heeft u in de voorbije 2 weken last gehad van één van de volgende problemen?
   0 helemaal niet
   1 verschillende dagen
   2 meer dan de helft van de dagen
   3 bijna elke dag

a. Weinig interesse of plezier in uw gewone activiteiten.
b. Zich neerslachtig, depressief, hopeloos voelen.
c. Moeilijk inslapen, moeilijk doorslapen of te veel slapen.
d. Zich moe voelen of gebrek aan energie hebben.

e. Weinig eetlust of overmatig eten.
f. Een slecht gevoel hebben over uzelf- of het gevoel hebben dat u een mislukkeling bent- of het gevoel dat u zichzelf of uw familie heeft teleurgesteld.
g. Problemen om te concentreren, bv. om de krant te lezen of om TV te kijken.
h. Zo traag bewegen of zo langzaam spreken dat andere mensen dit zouden kunnen gemerkt hebben. Of integendeel, zo zenuwachtig of rusteloos zijn dat u veel meer rondliep.
i. De gedachte dat u beter dood zou zijn of de gedachte uzelf op een bepaalde manier pijn te doen.

B. Als u minstens één probleem op deze vragenlijst heeft aangeduid, hoe moeilijk maakten deze problemen het dan voor u om uw werk of uw huishouden te doen, of om op te schieten met andere mensen?

helemaal niet
een beetje moelijk
erg moeilijk
extreem moeilijk

PHQ-9 (french)
Nom:
Sexe:
Age:
Date:

A. Durant ces deux dernières semaines, à quelle fréquence avez-vous été gêné(e) par les problèmes suivants ?

0 pas du tout
1 durant plusieurs jours
2 plus de la moitié du temps
3 presque chaque jour

1. Peu d'envie ou de plaisir à faire les choses
2. Se sentir cafardeux (se), déprimé(e) ou désespéré(e).
3. Difficultés à vous endormir, à rester endormi(e) ou dormir trop longtemps.
4. Se sentir fatigué(e) ou avoir trop peu d'énergie.
5. Manque d'appétit ou manger excessivement
6. Vous sentir mécontent(e) de vous, ou avoir le sentiment d'être un(e) raté(e) ou que vous avez déçu votre famille ou que vous êtes déçu(e) de vous même.
7. Difficultés à vous concentrer, par exemple en lisant le journal ou en regardant la télévision.
8. Bouger ou parler si lentement que d'autres pourraient l'avoir remarqué, ou au contraire: être si nerveux(se) ou si agité(e) que vous ne pouvez rester en place.
9. Penser qu'il vaudrait mieux pour vous d'être mort ou de vous faire mal d'une manière ou d'une autre. Difficultés à vous concentrer, par exemple, en lisant le journal ou en regardant la télévision.

B. Si vous avez coché au moins un des problèmes sur ce questionnaire, quel degré de difficultés ce(s) problème(s) ont-ils occasionné dans la réalisation de votre travail, ou pour mener à bien vos tâches à la maison, ou pour fréquenter d'autres personnes?

pas difficile du tout
quelque peu difficile
très difficile
extrêmement difficile

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