

..getting in a spin!

In my 1999 survey (*) 44% of respondents had dizziness/vertigo.

So it is quite a common problem.

Dizziness is a rather vague term which can encompass a range of sensations, but usually refers to:

- Lightheadedness
- Feeling faint
- Feeling a loss of balance
- Feeling unsteady
- Giddiness

Vertigo, on the other hand, refers to a sensation of spinning or falling. Sitting up or moving around may make it worse, and it may be bad enough to cause sickness.

Motion sickness is nausea and lightheadedness when moving (usually in a vehicle); it includes sea sickness.

Balance

Dizziness/vertigo is related to loss of equilibrium or balance, also known (in aeronautics) as spatial orientation: which is the sense of where the body is in space, i.e. whether it is upside down/right side up, what direction it is moving in, whether it is still or turning.

Our sense of balance is maintained by finely tuned mechanisms in the nervous system which comprises a complex interaction of the following parts:

- Inner ear: the 'labyrinth'; which monitors direction of motion (turning/forward-backward, side-to-side, up-and-down).
- Eye: monitors what position the body is in.
- Pressure receptors in the feet and elsewhere, which let us know where they are in relation to the ground and the rest of our body.
- Muscle and joint sensory receptors, tell us which parts of the body are moving
- Central nervous system: brain and spinal cord, which processes the information from the other systems and co-ordinates it to make sense of it. One of the main brain areas which deals with balance is the cerebellum. Any damage to that area can lead to balance problems. However, this is usually related to conditions such as stroke or Parkinson's disease, which are not known to be related to arachnoiditis.

If there is a conflict of information from the first 4 systems, then the central nervous system receives messages that don't match up with each other.

This is why you may feel motion sickness on an aeroplane going through turbulence: your inner ear is detecting changes that your eye cannot see (you are not visibly moving because you only see the inside of the plane).

Common causes of dizziness/vertigo or unsteadiness related to Arachnoiditis include:

- Medication: including salicylates (aspirin); caffeine; alcohol; anti-seizure drugs (given for pain) sedatives etc.
- Multiple sensory deficits: nerve damage in arms and legs in arachnoiditis may cause a loss of balance.
- Weakness in legs may cause loss of balance.
- Migraine: especially vestibular.
- Benign paroxysmal positional vertigo (BPPV).
- Labyrinthitis (usually viral).
- Meniere's disease.
- Low blood pressure, abnormal heart rhythm: may cause faintness: a drop in blood pressure on standing (orthostatic hypotension) is a relatively common problem (contributed to by autonomic neuropathy).
- Autonomic neuropathy: e.g. in diabetes.

- Metabolic disturbance: including low glucose, hypothyroidism.
- Allergy.
- (Severe anaemia).

NOTE: If you have developed sudden weakness or tingling/numbness down one side of your body, in association with dizziness, you should seek immediate medical attention to exclude a stroke.

Benign paroxysmal positional vertigo BPPV (accounts for 16% of dizziness cases of all types*): this tends to occur with head movement. (* not just arachnoiditis)

It may be related to drugs, virus or may have no discernible cause. BPPV causes intense brief episodes associated with change in head position, often when turning over in bed.

Women are twice as likely to be affected as men. Onset occurs at any age, but most commonly over the age of 40 (studies suggest the average age of onset is mid 50s)

The cause of the problem is small calcium carbonate crystals within the inner ear hair cell matrix, which become detached (for various reasons) from the hair cells and float around in the endolymph. They impact upon sensory receptors and thus trigger sudden bursts of vertigo. Labyrinthitis: (around 25% of patients who present with dizziness as their chief problem): usually a viral condition which comes on suddenly, with vertigo made worse by movement and associated with nausea/vomiting. (Your doctor will note that your eyes flicker sideways: horizontal nystagmus) There is inflammation in the inner ear.

Meniere's syndrome, which seems to account for around 5% of all cases of vertigo, is characterised by:

- Pressure, discomfort, fullness in the ear
- Fluctuating hearing loss
- Fluctuating tinnitus
- Episodic vertigo

Meniere's is due to build up of lymphatic fluid in the ear (endolymphatic hydrops) and is a sort of 'glaucoma of the ear'.

It may be associated with a viral infection (which can precede its onset by months or years), thyroid disorders, autoimmune conditions (especially sarcoid, periarteritis, Susac's and Cogan's syndromes), otosclerosis, multiple sclerosis (conditions in *italics* have been found to be associated with arachnoiditis.)

There are various stages:

- Early stage disease - sudden, unpredictable episodes of vertigo (spinning or rocking) with nausea and vomiting, which may be preceded by an aura of fullness in the ear. Attack lasts from 20 minutes to 1 or 2 days. During attacks hearing deteriorates and tinnitus increases, but between attacks hearing reverts to normal and tinnitus reduces or disappears.
 - Middle stage disease - Sensorineural hearing loss affecting lower pitches first becomes established but continues to fluctuate. Paroxysms of vertigo may occur. Periods of remission variable, often lasting up to several months. Tinnitus and hearing loss progress.
 - Late stage disease - Prime symptoms tends to be hearing loss that gets progressively worse. Episodes of vertigo disappear, but general balance problems develop and the patient may be unsteady, particularly in the dark.
- Tinnitus is often the predominant symptom. [adapted from the American Academy of Oto-laryngology guidelines].

There are other less common pathologies which can cause dizziness/vertigo, including: Wallenberg's Syndrome (occlusion of vertebral or inferior cerebellar (artery); 8th. Cranial Nerve Disease: (acoustic neuroma, vasculitis, basilar meningitis: infection or inflammation). Cerebellar disease (stroke, degenerative or inflammatory) and brain stem lesions may also occur, but are not known to have any specific link with arachnoiditis.

Ataxia: abnormal gait: loss of balance may lead to difficulty in walking straight, and may even bring about a rather drunken walk, which can be highly embarrassing.

In less severe cases it may be a matter of bumping into things, often on one side more than the other.

Ill-defined dizziness and anxiety, with a generalised foggiess and malaise might be suggestive of depression rather than a physical cause, but physical causes should always be excluded before making this assumption. In any case, there may well be some depression arising as a result of the physical difficulties, and this may complicate the picture.

Panic attacks may bring on hyperventilation.

LOSING EQUILIBRIUM

Losing our sense of balance can be a profoundly disconcerting experience. In those who have dizziness or vertigo with the problem, it can be pretty disabling.

However, for those who don't have those particular difficulties, it can still be a real nuisance.

In the 1999 survey, 70% of respondents said they had balance difficulties.

Generally, loss of balance manifests itself as a tendency to bump into things and a clumsiness that was not there previously. Often one side is more affected than the other.

These problems may well be related to loss of proprioception (sense of where your feet are) which accompanies the other sensory disturbances in the limbs which are common in arachnoiditis patients.

The other frequent cause is weakness in one limb, so that there is an abnormal gait, and this can affect the centre of gravity and thus make us more prone to toppling over.

For those who have neck problems, it is possible that these affect the sensory nerves which assist the co-ordination of eyes, head and body, as well as spatial orientation and control of

posture.

There may be vertigo associated with cervical pain syndromes, and this tends to affect the gait, making it unsteady, rather than causing a true rotational vertigo.

Transient symptoms, which come and go spontaneously, are unlikely to signal any serious condition, but persistent dizziness or vertigo should be assessed medically.

Spin doctoring

Doctors tend to be able to determine the cause of dizziness in about 75% of cases.

After asking you about your symptoms, what brings them on or relieves them, and examining you (including taking your blood pressure lying down and standing, neurological exam, checking ears, nose and throat and eyes), your doctor may want to order tests such as:

- Positional test: simple test during clinical examination; manoeuvre to trigger vertigo from a change from sitting to lying down rapidly with head turned to one side and then other. This may trigger transient dizziness (lasting a minute or so) and should not make your dizziness worse after that. The eyes must be kept open for your doctor to check for nystagmus (flickering of the eyes) which will tell the doctor what kind of dizziness you have.
- ECG: to check heart rhythm; possibly echocardiogram and exercise tests.
- Blood tests: electrolytes, blood count, ESR (detects inflammation) glucose metabolism.
- MRI scan
- Hearing tests
- Balance tests: ENG (electronystagmography)
- Caloric testing
- Angiography (note: not every patient will need every test)

Expected results:

Labyrinthitis: all exams normal.

BPPV: all exams normal.

Meniere's disease: progressive hearing impairment.

Wallenberg's: vascular obstruction or occlusion

Methods of reducing dizziness:

- Avoid rapid changes of position, especially from lying down to standing up or turning around
- Avoid extremes of head movement, especially looking up, or turning
- Eliminate products which impair circulation: caffeine, nicotine, salt.
- Minimise exposure to precipitating factors
- Avoid hazardous activities when you are dizzy (including driving)
- Don't become totally immobile; moving around may help you to develop central compensation which will reduce the problems.

Travel sickness:

- Always ride where your eyes will see the same motion your body and inner ears feel.
- Don't read while travelling
- Don't sit in a seat facing backward
- Avoid strong odours and spicy/greasy foods

Note: if you are diagnosed with Meniere's or dizziness, you have a responsibility to contact the DVLA;(UK) generally those who have sudden and disabling attacks are likely to have their driving licence revoked as a safety measure, but once the condition is being controlled, a

reapplication for the licence may be made (you should submit medical documentation from your GP or consultant at the same time as the application).

Treatment:

The goal is to treat the underlying problem(s).

If that is not feasible, then reducing the symptoms should be the prime target. Drugs such as promethazine (Phenergan) or Cyclizine may be helpful in reducing symptoms such as nausea.

BPPV can be managed quite successfully by techniques such as CRP, (canalith repositioning procedure), in which the patient's head is moved through a series of positions which move the crystals through the inner ear into a position in which they no longer cause symptoms.

The technique is quick (takes minutes) and highly successful, although it may need repeating occasionally. Self-guided positional exercises (e.g. Brandt-Daroff exercises) may be undertaken by the patient if BPPV recurs.

They involve sitting on a bed with the head turned 45 degrees to one side, then quickly lying down to the opposite side with the head still turned so that the area behind the ear touches the bed.

This position and all subsequent ones need to be maintained for 30 seconds: 5 more should be repeated. At least 3 sessions a day should be completed. The eyes may be kept closed to reduce vertigo.

For Meniere's disease, diuretics and salt reduction may be prescribed. Patients with mild infrequent attacks tend to prefer not to take maintenance treatments such as prochlorperazine and cinnarizine which may have unpleasant side effects. (Meniere's Disease Society 1999)

For orthostatic hypotension, salt or fludrocortisone may be indicated. Surgery is rarely indicated. Ablative treatment given locally into the inner ear may reduce vertigo in some patients.

Endolymphatic sac surgery and vestibular nerve section/neurectomy are not destructive to hearing, whereas labyrinthectomy does affect hearing.

Vestibular rehabilitation may be needed if dizziness persists for weeks or months: this balance training is taught by trained health professionals. It aims to correct the imbalance between the functioning of the right and left vestibular organs in the inner ear; this is achieved by processes called 'vestibular compensation', and this is possible even with permanent damage to the inner ear.

In much the same way as astronauts are taught to compensate for loss of gravity and positional sense in space, patients can be taught to re-programme their brain to counteract the abnormal signals it receives.

Vestibular exercises involving movements of the eyes, head, trunk and finally the whole body under different visual circumstances (e.g. with eyes open or closed) can help develop vestibular compensation.

It is important to note that in order to achieve this, the brain must be aware of imbalance or dizziness; this means that anti-vertigo medication may need to be stopped. Dizziness experienced during the exercises should not be regarded as a 'stop' sign, but as an inherent part of the process of compensation.

However, extremes of dizziness which render you sick or exhausted are not to be induced. These exercises are also known as Cawthorne Cooksey or balance exercises.