

“Funny Turns” in the Elderly

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Abstract

‘Funny turns’ are a common cause of hospitalization, particularly of elderly patients. The term may be used to define a wide variety of conditions, and to provide a detailed description of all possible causes would be beyond the scope of a single review. Instead this article aims to provide the reader with an overview of the common presentations, suggest a working framework for the admitting physician and guide judicious use of the investigations available.

Keywords

Funny Turns, syncope, vestibular disturbance, falls

Key points

1. A careful history is essential in establishing the cause for a funny turn resulting in presentation in hospital.
2. Initial assessment should include consideration of whether a lifethreatening cardiac cause is possible, and should establish whether the patient lost consciousness.
3. Tilt table testing and carotid sinus massage should be considered for all patients with unexplained syncope.

Introduction

The elderly with funny turns are an incredibly complex and heterogeneous group whose problems can range from life threatening arrhythmias, through vestibular disorders and hyperventilation syndromes to neurovascular instability and simple fainting. Indeed, there may often be several different pathologies contributing to the problem. Attempting a diagnosis in this group demands a true generalist’s approach as the answer may lie in more than one area.

For the purposes of the following discussion, a ‘Funny Turn’ can comprise an episode of loss of consciousness, dizziness or disequilibrium, or unexplained fall.

Scale of the problem

Funny Turns consume much time and resource, both in the emergency department and on medical and elderly care units. In the US, episodes of loss of consciousness account for 1.5 million physician visits¹ and 3% of emergency room attendances per year.² In a recent study in the UK, 34% of

attendances at the Emergency Department for people over 50 were for falls and in up to one third of these cases the fall was unexplained. In this particular series, 30 % of cases were admitted to hospital.³

Preliminary assessment

Two key questions need to be answered:

- Did the funny turn involve loss of consciousness?
- Is there a life threatening cardiac cause for the episode?

These two features may be difficult to establish. There will be no witness account of the funny turn in up to 50% of cases. Even the cognitively normal elderly have limited recall for falls⁴ and it is now accepted that falls and syncope may overlap.⁵ Amnesia for loss of consciousness is common.⁶

Despite this, a good history remains mandatory. Ideally a third party account of the episode should be obtained. Particular features which need to be addressed include the frequency, periodicity and whether any predictable features exist. Collapses after food or while on the toilet may imply post prandial or micturition syncope; dizzy episodes when rising from a sitting position suggests orthostatic hypotension; transient dizziness even when rolling over in bed occurs in Benign Paroxysmal Positional Vertigo.

Current medication needs to be documented and its relationship to symptoms established (for example, did the dizzy turns predate the start of a diuretic?). In the context of unexplained falls, four or more concurrent medications constitute an independent risk factor.⁷ Iatrogenic causes for funny turns should always be considered.

A full clinical examination should be performed. This should include assessment of lying and standing blood pressure, as postural changes are commonly responsible for dizzy spells or episodes of disequilibrium.

Examination may reveal other, previously undiagnosed conditions, such as aortic stenosis, bradycardia, cerebellar signs, peripheral neuropathy or parkinsonism. The author will always ask the patient with a funny turn to walk down the ward. Many unexplained falls suddenly become very explicable when the clinician witnesses a bizarre or highly unstable gait.

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Investigations

Routine biochemistry may confirm dehydration leading to orthostatic hypotension (OH), or a low blood sugar responsible for a collapse in a patient with diabetes. Perplexing dizzy episodes become explicable when a full blood count reveals significant anaemia.

A good quality 12 lead ECG is mandatory. Those patients with a cardiac cause for syncope have a significantly higher morbidity and mortality than those with a non cardiac cause.⁸ The ECG is the most efficient way of delineating the two groups. For those with entirely normal ECG and normal conduction, the chances of discovering a significant arrhythmia as a cause of their syncope is remote and 24 hour ECG monitoring (Holter Monitor) is usually normal.⁹

This strategy will produce a diagnosis in a significant number of patients with funny turns and also establish the presence of significant dysrhythmia (brady or tachycardia). The remaining group constitutes a ‘hard core’ who warrant further specialised investigation. Even when investigated fully, 48% of these patients will remain undiagnosed.^{10,11}

Syncope and syncope testing

Syncope is a transient loss of consciousness resulting from a temporary impairment of cerebral blood flow, accompanied by a loss of postural tone. This syndrome has several causes, some of which are potentially life threatening. Others are benign but their psychological impact on the well being and functional independence of the elderly should not be underestimated.¹²

Preliminary investigation, as outlined above, may allow the exclusion of life threatening cardiac causes of syncope.

Post Prandial Syncope

Almost 75 % of community dwelling elders have drops in systolic blood pressure of more than 10mmHg within 75 minutes of eating a meal and those who faint have more profound drops. In studies of funny turns in care home residents, up to 8% resulted from post prandial syncope.¹³

For those in whom the diagnosis is still not clear, syncope testing has become common practice over the last fifteen years and comprises two elements: Head up tilt (HUT) and carotid sinus massage (CSM). HUT is utilised to establish a diagnosis of vasovagal syncope and diagnostic carotid sinus massage to diagnose carotid sinus hypersensitivity.

Carotid Sinus Hypersensitivity (CSH)

Patients with this condition have exaggerated baroreceptor-mediated reflexes, which result in hypotension, with or without bradycardia. The syndrome first came to prominence in 1933¹⁴ and has become recognized as a cause of fainting and funny turns following Kenny’s landmark paper in 1986.¹⁵ Debate still rages over the true prevalence of this condition. Some papers suggest that up to 45% of patients being investigated by syncope testing have CSH¹⁶ while others put the figure nearer 15%.¹¹

The classical history is one of funny turns occurring with neck movement (eg drawing the curtains, hanging out the washing or wearing a tight collar). The condition has never been described in the under 50’s.

In the Admissions Unit setting, diagnostic carotid sinus massage can be performed using a standard heart monitor with a paper recorder. Full resuscitation equipment must be available, and the patient must give informed consent.

This ‘low tech’ testing will be unable to diagnose the purely vasodepressor form of CSH and it is worth noting that in 5–10% of symptomatic patients the response is only elicited in the upright position (ie using a tilt table). The reason for this is unclear but probably reflects, when upright, the greater ease with which the carotid sinus can be located.

Formal Syncope Testing utilizes a conventional foot plate support tilt table, standard ECG monitor and beat to beat blood pressure monitoring based on arterial tonometry. The ability to measure systemic BP with every heartbeat is an important consideration as many drops in blood pressure are extremely shortlived and would not be detected using conventional monitors.

For the standardised protocol, diagnostic criteria and contraindications see Boxes 1 and 2.

Carotid Sinus Hypersensitivity (CSH) –Diagnosis

6 Seconds of longitudinal massage to the point of maximal carotid pulsation at the upper border of the thyroid cartilage

- **Cardioinhibitory CSH** is present if massage produces asystole exceeding 3 seconds.
- **Vasodepressor CSH** is present if massage produces a fall in systolic BP of greater than 50 mmHg
- **Mixed CSH** is present when abolition of a cardioinhibitory response by atropine still results in a vasodepressor response

Maximal heart rate response usually occurs within 5 secs of onset of massage and BP nadir within 18 secs

Contraindications:

- Carotid Bruits
- Documented significant carotid stenosis
- Recent stroke/cerebral ischaemia
- Recent Myocardial Infarct
- Previous ventricular tachyarrhythmia

Incidence of neurological complications following CSM Approx 0.14%. Testing requires informed consent

Box 1

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Head Up Tilt and Vasovagal Syncope

*30 Minutes of Head up tilt at
70 Degrees to horizontal*

Positive Result if symptom reproduction, BP drop below 90 mmHg and/or bradycardia

Contraindications:

- Unable to tolerate 30 minute stand

Box 2

Unexplained falls

The issue of falls in the elderly is a major topic in itself and the recent consensus statement by the BGS/AGS¹⁷ gives a useful framework for management. Despite bedside assessment (including examination of gait) a considerable number of unexplained fallers will remain undiagnosed. A well recognized subgroup comprises those who experience a ‘Drop Attack’.

The ‘**Drop Attack**’ is a clinical syndrome first described by Sheldon in 1948¹⁸ and is characterized by a fall with no obvious cause or prodrome occurring in an otherwise fit individual. The most striking feature is the bewilderment of the faller. The patient will describe walking down the street without any problem and then suddenly finding they are on the floor. They have no recollection of tripping or stumbling, nor are there any other symptoms. Sheldon’s original paper described these patients’ inability to get back to their feet unaided, causing speculation that the problem was related to proprioception. Current opinion holds that the drop attack may well have several aetiologies, including syncope, atypical epilepsy and carotid sinus syndrome. In the author’s own experience, of fourteen patients with ‘classical’ drop attacks, three had definite vasovagal syncope (asymptomatic up to the point of loss of consciousness), one had unstable blood pressure and a further nine had other potential contributory factors (eg Parkinson’s disease, dementia etc).

Another condition commonly blamed for a variety of funny turns, including drop attacks is **Vertebrobasilar Insufficiency** (VBI). Kremer¹⁹ suggested that drop attacks were a consequence of brain stem compression impairing blood supply to the cerebellar pathways, thereby resulting in loss of postural tone. This theory was put forward using three case histories. Certainly VBI does exist but must be considered a rare cause of drop attacks. It is always associated with other brain stem symptoms such as dizziness, ataxia, visual field problems, diplopia and headaches.

Epilepsy

Seizures occur commonly in the elderly and the incidence of epilepsy (a continuing predisposition to seizures) increases sharply in old age (over 60’s account for

28% of cases of confirmed epilepsy).²⁰ Diagnosing a ‘Funny Turn’ as epilepsy can be problematic for all the reasons described above. Even where there is a reasonably good history and collateral information, standard differentiating features may not always be helpful (for example, there may be urinary incontinence in both epilepsy and fainting). Complex partial seizures may be even more misleading and are often misdiagnosed as acute confusional states or even functional psychiatric illness.

Many on-call doctors will have diagnosed a comatose patient as having had a brain stem stroke, only to discover them next morning sitting up in bed eating breakfast. In fact cerebrovascular disease commonly underpins late onset seizures and perhaps explains why 70% of seizures in the elderly are either clinically or electrically focal.²¹ The Oxford Community Stroke Project²² reported post stroke seizure occurring in 11% of patients within 5 years of stroke. 50% of these patients went on to have further seizures. Patients with haemorrhagic stroke, cortical lesions and lesions involving more than one lobe are at higher risk of developing seizures.

Late onset seizures may be a feature of a cerebral tumour, though most studies suggest this diagnosis is subsequently made in only 10% of cases.^{23,24}

The use of EEG to confirm a diagnosis of seizure in the patient with a ‘Funny Turn’ is fraught with difficulty with many parallels to the use of the Holter Monitor. Routine EEG may on occasion support the diagnosis, but a normal record cannot reliably exclude it. The range of normality also increases with age, so that interpretation can be difficult.

Dizzy spells and the vestibular apparatus

Preliminary assessment will diagnose many patients with dizzy spells leaving a hardcore that require further specialized assessment. Life threatening causes of dizziness are rare, and most studies of patients with dizziness have found a primary psychiatric disorder occurring in 16%. In about 50% more than one factor causes or aggravates symptoms. By far the most common diagnosis (44%) is a peripheral vestibular disorder.^{25,26}

The vestibular apparatus serves to inform the brain of our position in space. It also subserves the vestibulo-ocular reflex (VOR), maintaining the object we are viewing at a constant position on the retina, irrespective of head movement. The apparatus functions on a ‘push-pull’ basis, utilizing three pairs of semicircular canals. Damage to the vestibular apparatus results in asymmetry of tonic neuronal discharge, thereby informing the brain of movement, when in actual fact there is none. The result is vertigo, a sensation of movement (not necessarily of rotatory spinning), and nystagmus.

The vestibular system is plastic and very adaptable so that the outward signs of damage (ie nystagmus) are rapidly suppressed, particularly if vision is allowed to focus on a stationary object (optical fixation). Compensation can rapidly occur, though the damage persists as an inherent weakness. In certain circumstances, decompensation can occur and the patient again experiences dizziness.

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The history obtained from the patient with a vestibular problem will often be of a florid episode of vertigo some months or years previously which settled over several weeks. There is subsequently some unsteadiness punctuated by intermittent bouts of more pronounced dizziness. Specific questions should also be asked regarding unilateral hearing loss, aural fullness and tinnitus since the differential diagnosis in these cases includes acoustic neuroma.

Bedside clinical testing is often geared to excluding ‘central’ causes of dizziness. General neurological examination may point to stroke or cerebellar lesions and abnormal tests of eye movement (ie smooth pursuit and saccades) again suggest central problems. A stroke affecting only the vestibular apparatus is a very rare occurrence.

Nystagmus, unless the patient is presenting very acutely, is not usually in evidence unless optical fixation can be removed: Frenzel lenses are the ideal but on occasion use of an ophthalmoscope in a darkened room can yield useful information. Vertical nystagmus or nystagmus that changes direction suggests significant pathology of the brain stem or cerebellum and should prompt referral to a neurologist.

For patients with a peripheral vestibular imbalance, simple exercises (Cooksey Cawthorne Exercises) can improve the ‘gain’ in the system and lead to resolution of symptoms.^{27,28}

Benign Paroxysmal Positional Vertigo (BPPV) is a very common cause of transient dizziness/vertigo and is eminently treatable. For a detailed description of the diagnosis and treatment of this condition, see the article on page 35 of this edition.

Somatic/non organic funny turns

Psychological stresses can often manifest as a ‘Funny Turn’ though this is only ever a diagnosis of exclusion. Hyperventilation is a common cause of syncope and presyncope or may manifest itself as a dizzy spell. Classical perioral anaesthesia or paraesthesia in the hands may not often be volunteered and in this situation formal syncope testing may often be very instructive. Head-up tilt is a provocative test and symptom reproduction in the absence of significant hypotension and/or bradycardia may often clinch the diagnosis. In the author’s study, 4% of patients attending a syncope clinic reproduced symptoms in such a way as to suggest a non-organic cause.¹¹ Clinical psychology or cognitive behavioural therapy may often help in these situations as symptoms remain very real to the individual concerned.

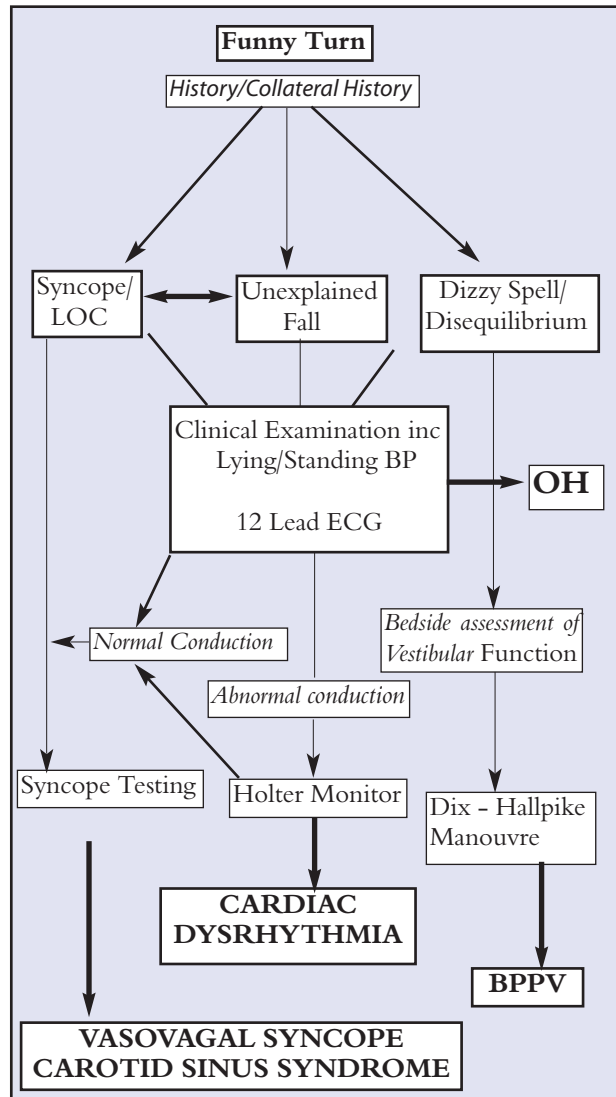


Figure 1. Proposed strategy for investigation and management of patients with ‘Funny Turns’

Summary

Funny turns in the elderly are a common and challenging problem. Diagnosis demands an open minded approach and careful assessment. Basic history, examination and routine investigations will provide a diagnosis for many patients. For more complicated cases, specialised bedside testing and investigation may help. Despite this, the cause of a funny turn will remain undiagnosed in a significant percentage of patients.

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