

CASE REPORT

Multidisciplinary approach to “accidental” falls in the elderly: A case report

Gianluigi Galizia,¹ Gianluca Testa,¹ Francesca Mazzella,^{1,3}
Francesco Cacciatore,^{1,3} Andrea Ungar,² Giulio Masotti,² Franco Rengo^{1,3}
and Pasquale Abete¹

¹Division of Geriatrics, Department of Clinical Medicine Cardiovascular and Immunological Science University of Naples Federico II, Naples, ²Department of Critical Care Medicine and Surgery, Unit of Gerontology and Geriatrics – Hypertension Center, University of Florence, Florence, and ³Salvatore Maugeri Foundation, Institute of Care and Scientific Research, Telesse, Italy

Falls in the elderly are commonly and often wrongly identified as “accidental”. We report a case of an elderly woman admitted to first aid for a trauma due to an accidental fall. Geriatric multidisciplinary evaluation revealed mild cognitive impairment associated with depressive symptoms; both findings made the anamnesis uncertain. Syncope algorithm was applied and “tachy-brady form of sick sinus syndrome” was diagnosed. Differential diagnosis between “accidental” and “apparently accidental” falls in elderly patients is very difficult but a multidisciplinary geriatric evaluation can clarify the correct diagnosis.

Keywords: elderly, fall, multidimensional evaluation, syncope.

Introduction

A fall is a dramatic event among the elderly, and is responsible for hospital admissions and permanent handicap in this age group.^{1–3} Establishing the causes of falls in the elderly is often made difficult by insufficient anamnesis and the frequent absence of witnesses. As a result, falls in the elderly are often wrongly identified as “accidental”. It has been shown that falls sometimes follow a loss of consciousness and are frequently misunderstood when trauma occurs.^{4,5}

Case report

A 71-year-old woman was admitted to hospital for a fronto-temporal lacerated-bruise wound, due to an “accidental” fall. Electrocardiogram (ECG), arterial blood pressure, blood test and neurological examina-

tion gave results of the normal range. On the following day, the patient came to our outpatient clinic for a previously scheduled geriatric examination. During the anamnesis, she said to the geriatric nurse the “accidental fall” was due to slipping near her bedroom and finding herself, bleeding, on the floor. Moreover, when the son was interviewed he confirmed to have found her on the floor, conscious and with a bleeding head. He also noted a blood stain on the bedroom door-jamb. He reported that his mother was wearing a pair of rubber-soled slippers and that there were no carpets or other impediments along the passage. All these details suggested that the patient’s anamnesis was obscure, and therefore the geriatrician decided to perform a multidimensional geriatric evaluation: clinical anamnesis (chronic obstructive pulmonary disease, osteoporosis, hepatitis C), drugs anamnesis (her habitual medication comprised bronchodilator, vitamin D, calcium and bisphosphonate), ECG, arterial blood pressure, routine hematic analysis, Mini-Mental State Examination (MMSE), Geriatric Depression Scale (GDS), ADL (Activities of Daily Living, 0/6 lost), IADL (Instrumental Activities of Daily Living, 1/8 lost), Tinetti scale and Cumulative Illness Rating Scale (CIRS). The MMSE (19/30) and GDS (6/15) revealed a mild cognitive

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Correspondence: Dr Gianluigi Galizia MD, Dipartimento di Medicina Clinica, Scienze Cardiovascolari ed Immunologiche, Cattedra di Geriatria, Università degli Studi di Napoli “Federico II”, Via S. Pansini, n°5, 80136 Napoli, Italy. Email: p.abete@unina.it

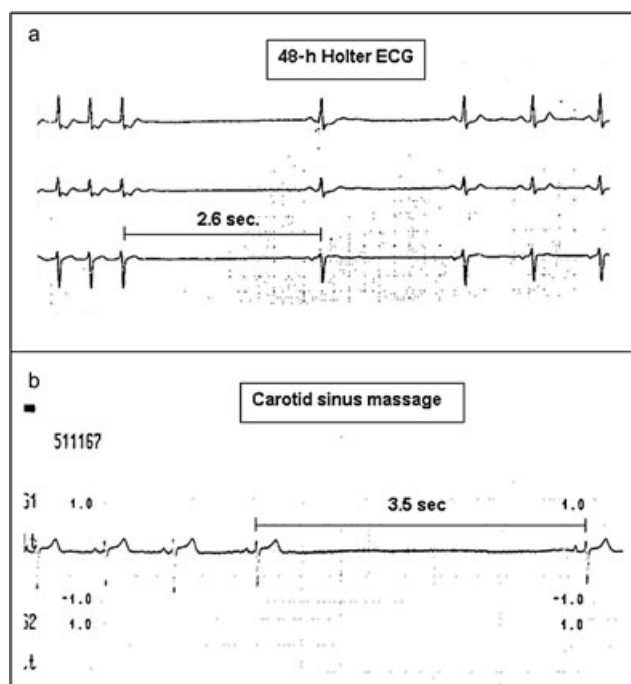


Figure 1 (a) 48-h Holter electrocardiogram (ECG) showed supra-ventricular tachycardia followed by asystole of 2.6 s. ("tachy-brady syndrome") accompanied by asthenia and pre-syncope. (b) Supine carotid sinus massage ECG recorder showed asystolic response of 3.5 s followed by syncope.

impairment associated with depressive symptoms. To confirm clinical findings, a brain computed tomography (CT) was performed and revealed cortical atrophy with increased brain liquor spaces.

The pathological MMSE and CT images confirmed the poor reliability of the anamnesis, and therefore syncope algorithm was applied.⁶ ECG, orthostatic hypotension evaluation, echocardiography and ECG stress were negative but 48-h Holter ECG showed a "tachy-brady syndrome" (Fig. 1a). Moreover, although the patient reported no symptoms throughout the Holter ECG, her son reported the presence of asthenia and presyncope in concomitance with ECG signs of arrhythmia. Supine carotid sinus massage was performed according to Task Force protocol⁶ and after 5 s the patient reported malaise followed by syncope. ECG recorder showed 3-s asystolic response (Fig. 1b). Interestingly, the patient did not remember this loss of consciousness. The final diagnosis was "tachy-brady form of sick sinus syndrome" and the patient subsequently underwent dual-chamber pacemaker implantation.

Prevention of falls and injuries in the elderly is not easy: these events are caused by a combination of intrinsic impairments and disabilities which are often accompanied by environmental hazards.⁷ Differential diagnosis between "accidental" and "apparently accidental" falls in elderly patients is difficult because

accuracy of anamnesis can be invalidated by retrograde amnesia⁸ or cognitive impairment, and anamnesis in emergency units after a traumatic episode may be incomplete.⁹ Recent studies show that cognitive impairment is the major risk factor for falls in the elderly while witness accounts of syncope events are unavailable in 50% of such cases.^{9,10} The role of multidisciplinary geriatric evaluation can reveal this type of elderly fall (i.e. mild cognitive impairment and syncope without witness) and correctly include them in the diagnostic algorithm of syncope. It should be stressed that multidisciplinary evaluation of falls in older people is involved in several studies which recommend a systematic multidisciplinary evaluation, especially in older persons with a high risk of falling.¹¹ Recently, a randomized controlled trial demonstrated that implementation of multidisciplinary assessment followed by treatment of fall risk factors could reduce the incidence of falls in independently living persons of 65 years and older.¹²

Finally, it has been reported that arrhythmias may be responsible for unexplained syncope in older patients. An implantable loop recorder has revealed several cases of brady-tachy arrhythmias as cause of syncope in the elderly.^{13,14} In our case, the diagnosis was made after 48-h Holter ECG and carotid sinus stimulation. In this regard, it should be emphasized that patients with syncope and sick sinus syndrome show a high percentage of positive response to carotid sinus massage.¹⁵ However, this approach often fails to make a correct diagnosis in older people.¹⁶

Our case report originates from a fortunate coincidence but suggests that a multidimensional geriatric approach can play a leading role in the differential diagnostic assessment between "accidental" and "apparently accidental" falls in the elderly.

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