of seven, the reversibility of these causes may account, in part, for the relatively benign outcome.

Although intravenous treatment of seizures is considered to be associated with morbidity and mortality in older people because of hypotensive, cardiac depressant and sedative effects of antiepileptic drugs, our experience suggests that, with the appropriate indications and when taking the proper precautions, such therapy is well tolerated in elderly patients with NCSE.

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POLYPHARMACY AS PART OF COMPREHENSIVE GERIATRIC ASSESSMENT: DISCLOSURE OF FALSE DIAGNOSIS OF ATRIAL FIBRILLATION BY DRUG REVISION

To the Editor: Misinterpretation of electrocardiogram (ECG) artifacts as pseudoarrhythmia is known to be a cause of unnecessary and occasionally harmful treatment. Pseudoarrhythmia is reported mainly in the acute care setting. Despite the high prevalence of diseases such as Parkinson’s and the advanced age of patients, specialists other than geriatricians report most cases.

The case of a post-acute care patient in whom review of polypharmacy led to the final correct diagnosis of pseudosupraventricular arrhythmia caused by tremor is reported.

CASE REPORT

A 65-year-old woman was transferred to an inpatient post-acute intermediate care unit (convalescence unit) after a 40-day admission in an acute care hospital because of a severe episode of pneumonia. She had a history of obesity, high blood pressure, hypercholesterolemia, osteoarthritis, bipolar disorder, and hypothyroidism but no history of heart disease. During her 3-day intensive care unit admission, where she was constantly monitored, episodes of paroxysmal atrial fibrillation with no hemodynamic compromise were reported, and treatment with amiodarone and aspirin was started. Serum lithium level and thyroid function test were within normal range. An echocardiogram was normal. The patient was transferred to acute care unit, where her clinical course was also satisfactory. A routine ECG performed there was interpreted as paroxysmal atrial fibrillation (Figure 1A). No cardiac events occurred during admission. As a result of acute illness and recent hospitalization, the patient presented severe functional loss and was transferred to a geriatric post-acute intermediate care unit. On physical examination, all vital signs were normal. A low-amplitude resting symmetric tremor that increased with intention was more evident in the upper limbs. No rigidity was present. Her medications at that time were losartan, hydrochlorothiazide, pravastatin, acetaminophen, tramadol, lithium, imipramine, fluphenazine, biperiden, levothyroxine, aspirin, and amiodarone. Polypharmacy was included on the list of goals of care of the interdisciplinary team. Although the indication of aspirin and amiodarone seemed appropriate, administering them would add a 12th drug with potential secondary cardiovascular, thyroid, and drug-to-drug side effects. Repeated physical examinations revealed no abnormal cardiac rhythm. When the previous ECG (Figure 1) was reviewed, the possibility of prior ECG misinterpretation arose. During admission, the tremor had improved and was only evident on intentional movement. A new 12-lead ECG was recorded in presence of the physician, with the patient relaxed and not presenting tremor (Figure 1B). The patient was then asked to move both hands, which caused the onset of tremor and simultaneous changes on the ECG (Figure 1C). A 12-lead ECG recorded while intentional tremor was still being provoked (Figure 1D) showed ECG artifacts identical to those in the initial ECG (Figure 1A). A definitive diagnosis of pseudosupraventricular arrhythmia caused by tremor was made. Treatment with aspirin and amiodarone was then withdrawn.

DISCUSSION

ECG artifacts are a well-described cause of misinterpretation of ECG in cardiology textbooks, with tremor and alternating-current interferences being the most common causes of the resulting pseudoarrhythmia. In the medical
literature, the most reported artifact is tremor-induced ventricular pseudoarrhythmia, frequently Parkinson-related. The immediate consequences of misdiagnosis, including unnecessary aggressive diagnostic and therapeutic procedures, are usually emphasized. Simultaneous physical examination, absence of hemodynamic deterioration, temporal relation to body movement, and careful analysis of the ECG trace looking for clues suggesting the presence of artifacts are recommended to avoid misinterpretation. Although ventricular tachycardia is the most reported pseudoarrhythmia, in the experience of some authors, supraventricular arrhythmia (pseudoatrial fibrillation or flutter) is a more common misdiagnosis of tremor artifact, although few cases have been reported. The causes of tremor in these cases were clonic movement in an epileptic patient, intermittent shivering in a hypothermic patient, and fever in a urosepsis context. In all cases, artifact was easily recognized as “sinus sign” on ECG; this is the presence of sinus rhythm in leads I, II, or III (arrows in Figure 1A in the present case). Although it has not been reported that pseudosupraventricular arrhythmias lead to immediate harmful interventions, little is known of the consequences of not detecting them, because they may constitute the most frequent misdiagnosis of tremor artifact. One reported case seems interesting in this respect, because the misdiagnosis led to oral anticoagulation for 1 year until the pseudoatrial fibrillation was identified as being due to Parkinson tremor.

The need for a heightened degree of suspicion of ECG artifacts in physicians who treat patients with arrhythmia has been acknowledged but should also apply to physicians such as geriatricians, who care for persons with tremor.

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Figure 1. A. Prior electrocardiogram (ECG) taken on admission to conventional acute care unit. Twelve-lead ECG shows normal sinus rhythm with initial apparent period of supraventricular tachycardia. Arrows show the “sinus” sign in lead I. B. ECG performed in post-acute intermediate care unit showing normal sinus rhythm. The patient was not presenting tremor. C. Rhythm strip, performed simultaneously to the start of voluntary hand movement, showing the appearance of tremor-induced artifact. D. ECG, taken as the patient was presenting intentional tremor, showing changes similar to those in A.
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EFFICACY AND SAFETY OF RADIOFREQUENCY THERMAL ABLATION IN THE TREATMENT OF THYROID NODULES WITH PRESSURE SYMPTOMS IN ELDERLY PATIENTS

To the Editor: Thyroid nodules (TNs) are found in more than 50% of elderly people. The great majority of TNs are benign, but they can often be responsible for pressure symptoms in the neck1 and result in discomfort and decreased quality of life. If untreated, large compressive TNs may result in life-threatening conditions because of the potential acute onset of respiratory crisis.2

Thyroid surgery and radioiodine therapy are the main therapeutic approaches for compressive TNs,1,3 although the risk of mortality and morbidity for thyroid surgery is greater in elderly patients.4 Furthermore, hypothyroidism may follow surgery and radioiodine therapy and complicate preexisting chronic disorders in many elderly patients.5 Of percutaneous ablative procedures, ethanol injection is quite efficacious in cystic but not in solid nodules,6 whereas laser ablation is reported to induce a 6-month TN decrease of 40% to 60%, although local adverse events may occur.6 Alternatively, radiofrequency thermal ablation (RTA) is a consolidated, safe, and simple approach for percutaneous treatment of tumor lesions within the liver.7 Recently, RTA has been proposed for the treatment of TNs.8 For these reasons, efficacy and safety of RTA in elderly subjects with compressive TNs were investigated, and preliminary data are briefly reported here.

Thirty-nine elderly patients with cytologically benign compressive TNs underwent one to three cycles of RTA performed using a hook umbrella (Starburst, RITA Medical Systems, Mountain View, CA) under ultrasonographic real time guide. After RTA ablation, TN volume was significantly decreased from baseline (P < .001) (Figure 1). TN volume decrease was stable during the follow-up, resulting in a decrease of 74% 6 months after RTA. Pressure symptoms in the neck, such as difficulty in swallowing and tracheal displacement, improved in all patients, with complete symptom disappearance in most. All patients tolerated the treatment well. No patient needed hospitalization after RTA, and no major complication was observed. These preliminary data show that RTA is a safe, simple, and effective procedure to treat TNs with pressure symptoms in elderly subjects.

RTA has been previously demonstrated to manage hepatic lesions effectively.7 A recent study performed on 30 patients with TNs treated with RTA reported short-time suppressive effects predominantly in cystic TNs and low efficacy in solid TNs with scarce or absent cystic component.8 To the contrary, it was demonstrated in the current study that RTA induced shrinkage of most solid TNs. The use in the current study of a hook umbrella capable of necroizing up to 5 cm around the electrode needle may explain this discrepancy. RTA can be considered safer than other percutaneous ablative procedures, because no local adverse events were noticed.

In conclusion, percutaneous RTA seems to show a high benefit-risk ratio in the treatment of elderly patients with compressive TNs and may represent a valid alternative to conventional treatments that may be contraindicated or ineffective in this population.

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