

A rare cause of syncope: cough

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Abstract. – **Background:** Syncope is a transient loss of consciousness, associated with loss of postural tone, with spontaneous return to baseline neurologic function. Syncope is a common complaint in the Emergency Department.

Objectives: Cough syncope occurs immediately after coughing. Cough syncope rapidly recovers in 1-2 second. Although cough syncope has been classified in vasovagal syncope, it may differ from pathogenetic mechanism. Physicians should be aware of this easily recognizable cough induced syncope.

Case Report: We present a 59-year-old obese man was referred for clinical evaluation because of recurrent syncope without seizures following coughing who developed cough syncope.

Conclusions: Physicians should be aware of this easily recognizable cough induced syncope in all subjects admitted with syncope and should screen possible underlying sources of cough.

Key Words:

Cough, Syncope.

Introduction

Syncope is a transient loss of consciousness, associated with loss of postural tone, with spontaneous return to baseline neurologic function. Syncope is a common complaint in the Emergency Department (ED), accounting for one to three percent of all ED visits and hospital admissions in the United States¹. Neurocardiogenic syncope is the most common cause of syncope, accounting for 25 to 65 percent of cases². Patients diagnosed with neurocardiogenic syncope have an excellent prognosis with no increase in mortality³. Cough syncope was first described by J.-M. Charcot (1825-1893) in 1879 as “laryngeal vertigo”⁴. Cough syncope occurs immediately after coughing. Consciousness rapidly recovers in

1-2 second without any effort. Cough syncope occurs usually while sitting or standing, but may occur in supine position⁵. Classically cough syncope occurs in patient with obstructive pulmonary disease. Patients are often obese and male⁴. Herein, we present a case of patients who developed cough syncope.

Case Report

A 59-year-old obese man was referred for clinical evaluation because of recurrent syncope without seizures following coughing. The cough persisted and the patient has been suffered from syncope after every cough for 3 years. He did not have any history of cardiovascular disease, hypertension, diabetes mellitus or seizures. He was an ex-smoker. He was not on any medication. His examination was unremarkable. There were also no clinical symptoms or signs of cardiovascular disease. Chest x-ray and pulmonary function tests were normal. ECG and echocardiography were normal. Tilt table test was positive (mix type response was observed). Neurologic examination and electroencephalogram were normal. 24 hours Holter monitoring was normal. His gastrointestinal evaluation revealed mild gastroesophageal reflux. Hydration with increased salt intake, proton pump inhibitor and fluoxetine were prescribed to him.

Discussion

Syncope is caused by reversible reduction in perfusion to the cerebral reticular activating system. Although cough syncope has been classified in vasovagal syncope, it may differ from pathogenetic mechanism of classic vasovagal syncope like other reflex syncopes including micturition and defecation. During cough, there is an increase in thoracic and abdominal pres-

tures. This is transmitted via the great veins to the cranial cavity, causing an acute pressure increase in the skull as Valsalva like manoeuvre⁵. Abrupt very high intra-thoracic pressure decreases venous blood return and cardiac filling and, thereby, cardiac output. In addition, abruptly increased intra-thoracic pressure is transferred to the systemic circulation, causing arterial baroreflex-mediated vasodilatation. The combination of increased venous pressure in the skull and the lowered arterial pressure results in a perfusion stand-still in the brain or even back-flow in the brain⁶. Although main pathophysiology of this syndrome has been attributed to lowered cerebral perfusion pressure consequent on an increased intrathoracic pressure, which combined with low cardiac output and cerebral venous return impairment, Hart et al⁷ reported a case of cough syncope concomitant with paroxysmal atrioventricular block with ventricular asystole. In our case no dysrhythmia was observed during cough. Majority of cough syncope was reported in male, middle-aged, overweight and chronic bronchitic smokers⁴.

Although cough may cause syncope, it may also be life-saving. Cough can be an effective resuscitative technique during emergencies occurring in the cardiac catheterization laboratory and cardioversion of ventricular tachycardia⁸.

Conclusions

Cough syncope may result with serious problems such as traffic accidents, falls leading to brain and extremity injuries⁹. Physicians should be aware of this easily recognizable cough in-

duced syncope in all subjects admitted with syncope and should screen possible underlying sources of cough.

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