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Cough syncope misinterpreted as epileptic seizure

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ABSTRACT – Cough syncopes are rare but may be one of the cause of sudden loss of consciousness. We recorded under video-EEG monitoring a typical syncope triggered by voluntary coughing (video) and Valsava maneuvre in a patient referred for the diagnosis of generalized tonic-clonic seizures. There were no signs of active epilepsy. The attacks were associated with overweight, obstructive sleep apnea and heavy consumption of cigarettes. *[Published with video sequences]*

Key words: cough syncope, tussive syncope

Using EEG-video monitoring, we recorded typical vasoplegic syncopes triggered by voluntary coughing *(see video sequence)* and the Valsava maneuver, in a 33-year-old patient referred with the diagnosis of generalized tonic-clonic seizures associated with coughing. Epilepsy had been suspected because the attacks were impressive and sometimes the loss of consciouness was associated with urinary and/or fecal incontinence. However, the attacks were associated with obesity, which was ascribed to the treatment of manic-depressive disorder with neuroleptics, obstructive sleep apnea, and heavy consumption of cigarettes. There were actually no signs of epilepsy. Brain MRI was normal with no Arnold-Chiari malformation.

Epileptic seizures and syncope sometimes pose diagnostic challenges (Spanaki *et al.* 2006; Perrig and Jallon, 2008). Generalized tonic-clonic seizures can be confused with syncopes because of the hypertonia and occasional jerks (Gelisse *et al.* 2007), but in syncope there is a brief period of unconsciousness with no post-ictal confusion. Syncopes are rarely accompanied by incontinence. Cough syncope, also called tussive syncope, was first described by Charcot in 1876 under the name "*vertige laryngé*" (Gelisse and Genton, 1997). It occurs usually in moderately obese, middle-aged men with broncho-pulmonary disorders. Loss of consciousness follows a bout of prolonged coughing. Syncope is due to lowered cerebral perfusion pressure as a consequence of increased intrathoracic pressure (Valsalva mechanism), culminating in an acute decline in cardiac output, which impairs cerebral venous return. Another proposed mechanism is a decrease in cerebral blood flow as a consequence of elevated cerebrospinal fluid pressure during coughing. □

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Legend for video sequence

Voluntary coughing producing typical syncope. The doctor said: "Les pupilles sont dilatées" (There is pupillar dilatation). At the end, the doctor told the patient "Comment vous sentez-vous ?"(How are you?). The patient fully understood the doctor's question. There was no post-ictal confusion. He answered: "mal" (bad).

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