

Sitcom Syncope – A Case Report

ABSTRACT

Syncope is one of the common presenting symptoms in neurology clinics and emergency departments. Apart from the usual neurological and cardiovascular causes of syncope, there are a few rare triggers that cause transient loss of consciousness such as coughing, swallowing, micturition, defecation, and laughing. These neurally mediated syncopes are labeled as “Situational” syncope. We report a case of a 28-year-old male who presented with episodes of dizziness, lightheadedness, and transient loss of consciousness mostly after excessive laughter. He has had similar episodes of transient loss of consciousness and lightheadedness after prolonged excessive laughing spells. This case is one of the very few described in medical literature, most of which have similar presentations and findings on subsequent investigations.

Key words: Syncope, Hypoperfusion, Diabetes mellitus

INTRODUCTION

Syncope is defined as transient loss of consciousness secondary to brief global cerebral hypoperfusion associated with the inability to maintain posture. It is transient, sudden in onset, and completely reversible. There are multiple causes of syncope, and they are grossly divided into neurally mediated, cardiac, and orthostatic hypotension. A large study analyzed 822 patients with syncope and the most frequently identified causes were vasovagal (21.2%), cardiac (9.5%), and orthostatic (9.4%); about 36% of patients the cause were unknown.^[1] Neurally mediated syncope is the most common type comprising 45% of cases.^[1,2] It can be further divided into carotid sinus hypersensitivity, vasovagal, and situational syncope. Syncope secondary to triggers that involve Valsalva maneuvers such as coughing, defecation, and urination is commonly known in the literature. We present an unusual case of syncope secondary to a laughing spell.

CASE PRESENTATION

A 28-year-old male, engineer by occupation, obese with a family history of diabetes mellitus, obesity, and hypertension presented with complaints of 2 episodes of transient loss of consciousness. The patient was talking to his sister in a sitting position when he started laughing intensely for a few minutes. Immediately, the patient started feeling lightheaded and dizzy. He lay down immediately and then he passed out for a few seconds. He had a headache in the occipital region for 20–30 min. Similar episodes occurred over the next few weeks. He has had approximately 4–5 similar episodes till now and all were triggered by excessive laughing spells. The patient did not report any palpitations or sweating episodes during the attack. There is no history of involuntary

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movements of limbs, up-rolling of eyeballs, tongue bites, or urinary incontinence. A complete syncope workup was done including 48-h Holter monitoring, electrocardiography (ECG), 2D-echocardiography, and postural blood pressure monitoring. There was no significant postural drop in blood pressure with no paroxysmal tachycardia on change of posture. There was no structural or electrophysiological abnormality seen on 2D-echo, ECG, or Holter monitoring. Since the patient had these episodes mostly after excessive prolonged laughing spells, he was advised to modify the factor which can prevent the syncopal episode. The patient was explained various maneuvers which help in halting the attacks through physical counter-pressure measures such as tensing the arms with clenched fists and leg crossing. Ample hydration and compression stockings were advised. The patient still gets occasional episodes of presyncope but with trigger prevention and maneuver application, the intensity of the episodes has significantly reduced.

DISCUSSION

Laughter-induced syncope is a rare subtype of situational syncope and there have been very few case reports described in

the literature. Laughter-induced syncope is also called gelastic syncope or Sitcom syncope or Seinfeld syncope. In a reported case, the syncope occurred while watching the television show Seinfeld, hence the name.

Laughter is produced in response to a subjective humorous stimulus that activates pseudobulbar cortical and limbic circuits, by spasmodic contraction of the diaphragm and various other thoracic muscles, along with respiratory changes. The contraction of muscles causes increased intra-abdominal pressure. Increased intra-abdominal pressure accompanies the Valsalva maneuver and reduces venous return to the heart. A decrease in venous return in turn will cause a decrease in cardiac output as per the Frank–Starling principle.

The first case report of laughter-induced syncope described by Cox *et al.* had underlying medical conditions like Takayasu arteritis.^[3] Previously, it was noted that laughter-induced syncope was predominantly seen in elderly patients with underlying comorbidities but there are many case reports of laughter-induced syncope described in the young population. Thiagarajah *et al.* described 3 cases of laughter-induced syncope with abnormal head tilt-table testing with either significantly decreased blood pressure or paroxysmal heart rate response to standing.^[4] Totah and Benbadis, Bloomfield and Jazrawi, and Braga *et al.* have reported a total of 11 case reports of gelastic seizures out of which 8 patients also had prodromal symptoms such as lightheadedness.^[5-9] The treatment of laughter-induced syncope is limited in the literature. Pharmacological treatment, which is tested, includes bisoprolol, propranolol, and midodrine.^[10] Non-pharmacological treatment involves various maneuvers that increase the venous return to the heart and thus may help in halting the syncopal attack such as clenching of the fist, squatting down, and leg crossing.

CONCLUSION

This case and literature review suggest that most cases of gelastic syncope are neurally mediated, and as such, may be responsive to common therapies directed toward this

mechanism. The resultant loss of consciousness is certainly no laughing matter and can result in significant injury to those affected by this condition. Knowledge of this condition, its mechanism of action, and potential treatments may be of benefit to physicians evaluating patients with syncope.

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