CASE REPORT

Atishoo! Atishoo! We all fall down!

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Abstract

We report the unusual case of an elderly lady with glaucoma and sneeze syncope because of transient complete atrioventricular block, who had resolution of syncopal and pre-syncopal symptoms following removal of her β-blocker eyedrops. This case suggests a previously unrecognised pathophysiology in sneeze syncope and illustrates the potential problems associated with the systemic absorption of β-blocker eyedrops as well as the ingenuity of older patients when participating in the investigation of their own illnesses.

Keywords: sneeze, syncope, glaucoma, β-blocker, elderly

Case Report

An 88-year-old woman presented to a dedicated syncope clinic with a history of three syncopal episodes in the previous month, each of which was preceded 10–20 s earlier by a sneeze. She denied any postural related dizziness, palpitations or any other complaints. She had longstanding glaucoma, and ocular pressures were well controlled on timolol 0.5% eyedrops twice daily. On examination, she was found to be overweight and normotensive, with no evidence of postural hypotension. Physical examination was otherwise unremarkable.

An ECG demonstrated sinus rhythm at a rate of 63 beats per minute with first-degree heart block. A full blood count, biochemical profile, ESR and thyroid function tests were normal, and a chest X-ray demonstrated marginal cardiomegaly only. A head-up tilt test (according to the Newcastle protocols [1]) with supine and erect carotid sinus massage (before and during the test) was normal. She was given postural related advice and an advice sheet with specific instructions to sit or lie down if about to sneeze. A Holter monitor was arranged and the patient instructed to keep a diary of any sneezes or syncopal or pre-syncopal episodes while wearing the monitor.

She returned to the clinic 1 week after the Holter monitor had been performed. Three further syncopal episodes had occurred since her last review when not wearing the monitor. While wearing the monitor, she recorded three sneezes in the sitting position, each of which was associated with pre-syncopal symptoms but not syncope. One sneeze was spontaneous, but the other two were precipitated deliberately by inhaling a pinch of pepper! Each diary entry corresponded to a greater than 3 s R-to-R interval because of transient complete atrioventricular (AV) block (Figure 1). A diagnosis of sneeze syncope because of transient complete AV block was made, and her timolol drops were discontinued and replaced with latanoprost. A further Holter monitor examination was performed 9 days later, and at review, 2 weeks afterwards, she had no further syncopal or pre-syncopal episodes despite several sneezing episodes during that time. She recorded three sneezes (one spontaneous and two pepper induced!) while wearing her repeat monitor, none of which caused syncopal or pre-syncopal symptoms, and none of which was associated with any significant ECG changes. She remained asymptomatic at 6-monthly review.

Sneezing is a well-recognised though uncommon cause of syncope. The mechanism, as in cough syncope, is thought to be predominantly because of hypotension as a result of reduced venous return to the heart because of increased intrathoracic pressure [2]. A reduction in cerebral blood flow because of raised intracranial pressure induced by elevated intrathoracic pressure is also thought to play a role [3]. Cough and belch syncope because of complete AV block as a result of increased vagal tone have previously been reported [2, 4], but the author is unaware of any reports of sneeze syncope because of an identical mechanism. This shared pathophysiological mechanism of sneeze and cough syncope is not surprising, however, in view of the large overlap in the physiology of these manoeuvres [5]. A sneeze differs from a cough, however, in that a sneeze is never voluntary [5], and, in this case, the diagnosis was facilitated by the ingenuity of the patient in inducing sneezes with pepper while wearing the Holter monitor. The systemic absorption of timolol eyedrops has previously been
Sneeze syncope due to complete AV block

implicated in carotid sinus syndrome [6], and, in this case, sneezing and systemic absorption of topical timolol appear to have been enough to precipitate complete AV block and syncope in the face of pre-existing conduction delay. Removal of the topical β-blocker was enough, however, to render the patient asymptomatic.

Cerebral arterial stenosis was not excluded as a potential contributing factor to syncope, and excluding sick sinus syndrome may have required more prolonged ECG monitoring. Nevertheless, this case suggests cardioinhibition as a previously unrecognised pathophysiological mechanism in sneeze syncope. In addition, it highlights the potential problems of systemic absorption of topical β-blockers and offers an example of the resourcefulness and ingenuity of patients when participating in the investigation of their own illnesses.

Key points
• Sneeze syncope may occur through the mechanism of transient complete AV block.
• Topical β-blockers for glaucoma may exacerbate syncope through negative chronotropic effects.
• Older patients can show initiative and ingenuity to aid their own diagnosis.

Conflict of interest statement
There are no conflicts of interest.

References

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