

Cough Syncope in the times of COVID-19

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Dear Editor,

In the times of COVID-19 pandemic, cough is a common clinical presentation, however its vasomotor effects on circulatory systems are underappreciated. A healthy 39-years-old gentleman with no comorbidities presented to the emergency room in the night shift with few episodes of syncope during bouts of coughing over a week. His father suffered from upper respiratory tract symptoms for a week and recovered. He was a non-smoker and denies any use of recreational drugs. There was no fever, shortness of breath, chest pain or chronic cough. He suffered from a ground level fall at home while coughing with brief duration of loss of consciousness for few seconds and sustained 2 centimeters linear laceration over occipital region. His physical examination, electrocardiogram, chest x-ray and laboratory investigations were within normal limits. Prior to this presentation, he never experienced any syncopal episode. He was negative for COVID-19 PCR. On further investigation, computed tomography head, echocardiogram and holter monitoring were unremarkable. His laceration was repaired and was later discharged with cough suppressants and oral antibiotics to treat presumed upper respiratory tract infection.

Cough syncope or laryngeal ictus (from Latin ictus means stroke or thrust) or laryngeal vertigo coined in 1876 by Charcot ¹, is a phenomenon with episodic cough with loss of consciousness for few seconds followed by full recovery. In mid 19th century, profile of cough induced syncope emerged in middle aged muscular built males with underlying obstructive lung disease. Presumably, such individuals

generate very high intra-thoracic pressures with coughing associated with low venous return and cardiac output, decreased cerebral perfusion, increased extravascular pressure around cranial vessels resulting in cerebral concussion like effect from rapid rise in cerebrospinal fluid pressure. It is a neutrally mediated reflex vasodepressor-bradycardia response to cough.²⁻³ This case scenario suggest cough induced syncope can be a clinical problem. Reduced cerebral flow due to vagal modulation seems as a primary cause. Syncopal episode is a result of cough however elimination of cough is important hence evaluation and treatment of potential underlying causes of cough is required. Lack of robust research is due to dearth of large data sets and it is needed to investigate several pathophysiological processes. Literature³⁻⁵ further put forward interesting questions about vulnerable individuals with raised intra-thoracic pressures and their predisposition for this condition and suggested to incorporate new diagnostic modalities.

Sincerely,

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