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A Case Study on Cough Syncope

BURRA LIKITHANJALI, MATTEWADA HIMABINDHU, TEJASWI CHILLARA*.

Assistant professor in Vaag devi college of pharmacy, Bollikunta, Warangal.
EKASHILAA HOSPITALS, HANAMKONDA.

ABSTRACT: Cough syncope is also known as laryngeal vertigo. It is a syndrome occurring with forcefulcoughing caused by a heightened reaction to a strong cough, Chiarimalformation or unusually sensitive heart-depressor response to Valsalva. Characterized by paroxysmal cough, facial congestion, cyanosisandloss of consciousness.we found this case of cough syncope in a 60years male patient presented with dry cough for5 days associated with throatpain,fever for3 days low grade relived on medication, SOB, loss of consciousness 3 episodes each lasting 30sec immediately after severe cough then spontaneously regain consciousness. Based on the subjective, objective and laboratory investigation patient must be diagnosed with cough syncope and treated with conservative management that includesantibiotics, antacids, antiemetic, mucolytic agents, bronchodilators, and antitussivesand the patient was recovered after 3 days.

I. INTRODUCTION

Cough syncope is also known as laryngeal vertigo. It is a syndrome of syncope occurring with forceful coughing.

CAUSES[1]:

- Normal or heightened reaction to a strong cough.
- Unusually sensitive heart-depressor response to Valsalva (straining)
- The Chiari Malformation
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PATHOPHYSIOLOGY[2,4]:

There is ongoing discussion over the exact mechanism underlying cough syncope. Several theories have been put forth regarding the consequences of the marked elevation of intrathoracic pressures that occurs when someone coughs: reduced cardiac output leading to reduced systemic blood pressure and, as a result, cerebral hypoperfusion; increased cerebrospinal fluid (CSF) pressure leading to increased extravascular pressure around cranial vessels, resulting in reduced brain perfusion; or a cerebral concussion-like effect from a sudden rise in CSF pressure. More recent mechanistic research points to a reflex vasodepressor-bradycardia response to

coughing that is neutrally mediated. Since a cough causes loss of consciousness, getting rid of the cough will also get rid of the syncopal episodes that come with it.

CLINICAL FEATURES[5]:

- Paroxysmal cough,
- Facial congestion,
- Cyanosis
- Loss of consciousness

EVALUATION OF COUGH SYNCOPE[1]:

Physical examination should include at a minimum

- Blood pressure and pulse, standing and supine
- cardiac exam
- Carotid sinus testing
- Check pulse and ideally blood pressure during Valsalva and coughing.

ROUTINE LABORATORY TESTING[1]:

- ECG
- Autonomic testing, including tilt-table testing
    - The tilt table test should include a valsalva and coughing to simulate the situation.
- MRI (for Chiari malformation)
- 24 hour holter(for sick-sinus).
- EEG -- should be normal. It may be helpful to exclude seizures.

MANAGEMENT[3]:

Treatment of the cough (e.g., bronchodilators and antitussives) and the underlying diseases are the main goals in managing cough syncope; however, separate management may be necessary for cardiac function, blood pressure, blood volume, reflex-mediated alterations, and extracranial vascular patency.

II. CASE REPORT:

History of present illness:

A 60 years male patient came to the hospital with chief complaints of dry cough since 5daysassociated with throat pain, fever since 3days low grade relieved on medication,SOB, Loss of consciousness (LOC) 3 episodes each episode lasted for 30 secimmediately after severe cough than spontaneously regainconsciousness. Loss of consciousness associated with headache, tough bite.

Past history: The patient had a known case of similar illness 2 times 3yrs back and 7yrs back and on inhalation (SOS), HTN since 5yrson Telma 40mg, DM type-2 since 6 months on diet control.

Social history: He had no significant social history.

Occupation: Retired coal mine worker. 35 years of exposure to coal dust.Last exposure was 8months back. Exposure to direct coal dust without any protective equipment.

Diet: mixed

Sleep: Inadequate

Bowel habits: Regular

Allergies: No significant allergies were experienced either withfood,medicine and environmental allergies.

Physical examination:

VITALS- temperature:100.6F, B.P –90/60 mm of hg , HR-86 beats/min,RR-18breaths/min

SPO2- 98%

General examination:

Pallor - Negative

Icterus - Negative

Cyanosis –positive grade 3

Clubbing - Negative

Koilonychias - Negative

Lymphadenopathy - Negative

Edema- Negative.

LABORATORY STUDIES:

INITIAL EVALUVATION:

Initially the work was done on the investigations in the general department and revealed normal haemoglobin levels, normal 2d-echo and normal electrolytelevels, decreased BP andHBA1C shows 9.5% which is 226.8mg/dl,

- HRCT- SCAN THORAX:

which showedmediastinum -small volume pre-tracheal, pre-vascular&pre-cranial lymphadenopathy.Pleura - minimal rightfissural effusion noted.

- CT -HEAD AND BAIN:

Chroniclacunar infract in right caudate and lentiform nucleus.

- USG ABDOMEN:

Grade 1 fatty liver changes, Grade-1 prostatomegaly.

- MRI OF BRAIN:

chronic lacunar infracts inbilateralCapsulo-Ganglionic region

chronic small vessel ischemic changes.

Mild cerebral atrophy

DIAGNOSIS: Based on subjective and laboratory findings diagnosed as cough syncope.

MANAGEMENT:

On day of admission, patient was shifted to I.C.U and the patient had decreased BP90/ 60mm of hg and was treated withinfusion nor adrenaline 4ml/hr. on the next day it reaches to 110/80 mm of hg and shifted to the general ward.

Based on the patient symptoms, conservative treatment was started that includeantibiotics, antacids, anti-emetics, mucolytic agents, Antitussives, and Bronchodilators. The patient was stable after 3 days.

III. DISCUSSION:

Cough syncope is a syndrome of syncope occurring with forceful coughingcaused by a Normal or heightened reaction to a strong cough, Unusually sensitive heart-depressor response to strainingand Chiari MalformationCharacterized by Paroxysmal cough, Facial congestion, Loss of consciousness, cyanosis etc. This can be evaluated using carotid sinus testing, cardiac exam, ideally blood pressure during Valsalva and coughing, MRI(for Chiari malformation) , 24 hours holter(for sick sinus) and can be treated by conservative and symptomatic therapies. Based on the patient symptoms and laboratory findings the patient was diagnosed with cough syncope and based on this conservative therapy was started with anti-histamines, bronchodilatorsand mucolytic agents and the patient condition improved after 3days.

IV. CONCLUSION:

Cough syncope is a rare case it is caused due to intrathoracic pressure treated with antitussivesand bronchodilators in our case report patient recovered within 3 days. There is no standard treatment for cough syncope patient treated with symptomatically.

SOURCE OF FINDINGS: None

CONFLICTS OF INTEREST: None

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