

Clinical Cardiovascular Research

Case Report

Post Masturbation Acute “Flash” Pulmonary Edema

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Received Date: 30 July 2026; **Accepted Date:** 17 August 2026; **Published Date:** 08 September 2026

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Abstract

Masturbation is the sexual stimulation of one's own genitals for sexual arousal or other sexual pleasure and is usually healthy. Acute flash pulmonary edema following sexual activity or masturbation is an extremely rare event and typically triggered by an increase in sympathetic nervous system activity, resulting acute hypertensive spikes since intense sexual arousal and orgasm cause a significant surge in catecholamines (adrenaline and noradrenaline) which causes fluid to back up rapidly into the lungs, leading to severe shortness of breath. Early identification and prompt management help to decrease the morbidity and mortality.

Keywords: Flash Pulmonary Edema, Masturbation, Sudden Surge in Blood Pressure, Choking, Blood Stinged Sputum.

Introduction

In most individuals, sex can occur safely without risk of death or arrhythmias and it is devastating during sexual activity occasionally. Acute “flash” pulmonary edema (FPE) describes a state of sudden, dramatic and precipitous form of acute decompensated heart failure due to a sudden and severe accumulation of fluid in the lungs causing extreme breathlessness and it is a medical emergency that requires immediate intensive care. While physical sexual activity, intense exertion, or orgasm can trigger extreme physiological shifts of blood pressure and heart rate leading to sudden severe respiratory distress or flash pulmonary edema after masturbation. Patients may have tachycardia, dyspnea, reduced O₂ saturation, severe hypertension or sometimes hypotension associated with stunned myocardial syndrome. Irrespective of the etiology, sudden increase in left ventricular end diastolic pressure is the final denominator for the development of pulmonary edema. The spectrum of patients presenting is wide, ranging from mild pulmonary edema to respiratory failure. Due to the central role of increased

sympathetic activity in the pathophysiology of this subset of patients, SCAPE (Sympathetic Crashing Acute Pulmonary Edema) [1] is a better terminology.

Case Report

60 years old man (author himself) suffered of acute onset of breathing difficulty in the midnight as hyperventilation, rise in blood pressure up to 180/110 mmHg following masturbation on thought of an affectionate girl not remaining with him due to police preventions. Suddenly sitting upright in the bed with progress in breathing difficulty and later developed choking with coughing out of blood stinged sputum two times. Immediately becoming alert and taken Amlodipine 5 mg, blood pressure becoming swinging up and then put on telmisartan 40 mg and developed diuresis 3 to 5 times with short intervals of 5 mts. The blood pressure with a little fall and fluctuating as it is before. Added Amlodipine 5 mg again and sit upright in the chair for one hour. There-

after, blood pressure tends to normalise, no breathing difficulty further and went on sleep. In the next day morning hours, blood pressure remaining as 146/94 mmHg, oxygen saturation 99 to 100% and not taken any drugs further. In the evening hours, went on jogging up to 10 kms without any troubles. He had regular habits of masturbation on his own to obtain some sexual pleasure since no girl at home on police vigilance continuously for the past 22 years and a similar episode happened one year before on masturbation and subsided on observation in an emergency room at Govt hospital, kuzhithurai for 6 hours without taking any drugs. Investigations remaining normal including blood chemistry, X-ray chest, ECG and Echocardiography.

Discussion

Sexual activity is equivalent to mild to moderate physical activity in the range of 3 to 5 METS [2] and heart rate rarely exceeds 130 bpm and systolic blood pressure rarely exceeds 170 mm Hg in normotensive individuals [3],[4]. In heterosexual and vaginal intercourse, systolic and diastolic systemic arterial blood pressure and heart rate increase mildly during foreplay, with more modest increases occurring transiently on sexual arousal and the greatest increases occur during the 10 to 15 seconds of orgasm, with a rapid return to baseline levels thereafter [5]. Men and women have similar neuroendocrine, blood pressure, and heart rate responses to sexual activity [6], [7]. Some patients, particularly older people, may have difficulty in reaching an orgasm for medical or emotional reasons and on attempting to achieve a climax, it is possible that such individuals may exert themselves to a greater degree of exhaustion with relatively high demand on their cardiovascular system. Intense physical [8] or emotional excitement [9],[10] releases stress hormones, blood pressure jumps up very fast and the heart temporarily cannot pump hard enough and fluid leaks quickly into the air sacs of the lungs, causing "Flash pulmonary edema" which can become life-threatening in minutes and requires oxygen and blood pressure medications. It also occurs due to exertion in extremely cold conditions [11]. The cause of the episodes of pulmonary oedema is uncertain but left ventricular diastolic dysfunction may contribute and coronary artery spasm is the aetiology of the patients who experienced chest pain. Coital angina ("angina d'amour"), that occurs during the minutes or hours after sexual activity, represents < 5% of all anginal attacks [12]. 50% to 74% males predominantly in their 50s and 60s, showed that sexual activity was associated with a 2.70 increased relative risk of myocardial infarction (MI)[13]. The episodes of acute left ventricular failure were precipitated by acute hypertension as a result of neurohumoral stimulation. The postulated mechanism included changes that increase the hydrostatic pulmonary pressure (The blast theory), increased pulmonary capillary permeability (Permeable defect theory) and neurocardiac or neurodynamic mechanisms.

Spontaneous pneumomediastinum and subcutaneous emphysema after masturbation is a rare condition with an incidence of 1 in 10,500 to 1 in 30,000 of all emergency departments, clinically characterised by a swollen face and crackling crepitations reaching from the mandible down the neck and chest to the elbows on both sides with normal lung auscultation that mostly affects young men and generally follows a benign and self-limiting course [14]. It is also triggered by violent coughing, excessive vomiting, strenuous physical exercise or Valsalva maneuver and results from an abrupt increase in intrathoracic pressure leading to alveolar rupture and air leak along the tracheobronchial tree into the mediastinal cavity and this mechanism is known as "Macklin effect" [15]. Hamman first described the crunching sound with systolic contraction on auscultation, known as "Hamman sign," [16] in pneumopericardium. Post-orgasmic illness syndrome (POIS) is a rare condition in which people have flu-like symptoms after orgasm, either with a partner or through masturbation. The symptoms can start minutes or hours after orgasm and can last for several days afterwards which usually, subside within a week [17].

In individuals with channelopathies, autonomic modulation and a higher incidence of cardiac arrest at night suggesting that cardiac vagal tone may have a significant contribution to arrhythmias in people with Brugada syndrome (BrS) [18]. Individuals with Catecholaminergic Polymorphic Ventricular Tachycardia (CPVT) arising from adrenergic stimulation during physical or emotional stressors due to an inherited dysfunction in the handling of calcium ions by the sarcoplasmic reticulum in myocardial cells [19]. Risk of SCD (sudden cardiac death) with sexual activity are those with Long QT syndrome, LQT1 and LQT2 which can be triggered by physical activity or emotional stress respectively [20] and these heterogenous group of channelopathies that have genetic mutations associated with cardiac repolarization leading to prolongation of the QT on the surface electrogram that can lead to sudden cardiac death from Torsades de Pointes (TdP).

Inherited cardiomyopathies such as Arrhythmogenic Right Ventricular Cardiomyopathy (ARVC) characterized by the fibrofatty infiltration of the right ventricle but can also infiltrate the left ventricle [21] and Hypertrophic Cardiomyopathy (HCM) arises from mutations of the sarcomeric proteins manifesting phenotypically as left ventricular hypertrophy [22] can have varied risk profiles in regards to sudden cardiac death with physical activity as a trigger. Ischemic heart disease due to atherosclerotic heart disease, coronary vasospasm, myocardial bridging or anomalous coronary arteries can cause acute ischemia when there is an increased metabolic demand placed on the heart during physical activity such as sex which often manifests as chest pain.

An intense orgasm (climax) during daily masturbation (masturbation several times a day, felt an unbearable headache and sudden nausea) triggered a massive spike

in blood pressure causing brain bleed, a fatal subarachnoid hemorrhage (a type of stroke) manifested as "thunderclap" headache, confusion, and vomiting due to a burst blood vessel, leading to full recovery within two weeks of hospital stay or death [23]

Conclusion

Sex is a salient part of life and procreation that contributes to overall wellness and quality of life [24] and it is a vital component of a patient's social environment. Sexual activity and orgasm act as a low-to-moderate physical exertion on the heart and physical stress of achieving an orgasm can rarely trigger arrhythmias or cardiac arrest. The clinician should be aware that sexual activity can induce pulmonary edema [25] and any factor that provokes an imbalance in pulmonary fluid homeostasis and damages the pulmonary capillary endothelium will accelerate the accumulation of fluid within the pulmonary interstitium and alveoli [26]. Natural sexual arousal and orgasm on its own is healthy and fine, but inducible arousal either self or others manually with or without externally applicable creams and drugs that act as sexual enhancers is risky and may lead to sudden death unexpectedly sometimes while trying to achieve an orgasm during masturbation or coitus., accounting for only 0.2% to 0.6% of all sudden deaths [27]. Specific therapy is not necessary and supporting care with control of blood pressure and short-term observation for respiratory compromise are reasonable. When these issues are not adequately addressed, depression and anxiety can ensue, which can indirectly worsen the clinical outcomes. Medical providers can improve outcomes in patients at risk by initiating a conversation about sexual activity with them during the act.

Funding

This study has received no financial support.

Conflicts of Interest

The author declares that there is no conflict of interests regarding the publication of this paper.

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Citation: Dr. Ramachandran Muthiah, Post Masturbation Acute "Flash" Pulmonary Edema, <i>Clin. Cardiol. Res.</i> Vol. 5 Iss. 2. (2026) DOI: 10.58489/2836-5917/031
