

## Sudden Death Following Ingestion of an Unlabeled Sexual-Enhancement Capsule: A Forensic Autopsy Case Report

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### INTRODUCTION

Unregulated sexual-enhancement products have become an under-recognized contributor to sudden and unexpected deaths, particularly among young adults seeking rapid performance benefits [1]. These substances, often sold as unlabelled capsules, herbal mixtures, or counterfeit “boosters”, may contain unpredictable combinations of sildenafil analogues,

### ABSTRACT

A 28-year-old male was found dead and brought to the emergency department of Guru Nanak Dev Hospital, Amritsar, after being discovered unconscious in a hotel room where he had checked in with a female sex worker. The accompanying witness reported that the decedent ingested an unlabeled capsule claimed to be a sexual-performance enhancer and collapsed prior to any intercourse. Autopsy conducted at Government Medical College Amritsar demonstrated bluish discoloration of the lips, nail beds, and earlobe regions, marked visceral congestion, and deep gastric mucosal congestion with undigested food. Histopathology showed no intrinsic pathology. Toxicological screening was negative for routine poisons. Cause of death was certified as undetermined, with a possibility of unknown poisoning. This case highlights the increasing abuse of unregulated sexual-enhancement agents in Punjab, a region marked by high prevalence of synthetic-drug use. It brings to fore the need for expanding toxicology panels, increased public-patient education, and preventive strategies directed at extreme sexual-pleasure behavior.

*Keywords: dangerous sexual practices, sexual enhancement, sudden unexplained death, novel psychoactive substances, autopsy.*

synthetic stimulants, or novel psychoactive substances (NPS) [2]. Their composition is frequently undisclosed, variable, and pharmacologically unstable, creating a significant gap between perceived safety and actual toxic potential [3]. Even in otherwise healthy individuals, such agents can trigger abrupt autonomic dysregulation, malignant arrhythmias, pulmonary edema, and multiorgan congestion, sometimes within minutes of ingestion. Forensic

evaluation of such deaths is further complicated by the limitations of routine toxicology [4]. Many NPS degrade rapidly, fall outside standard analytical panels, or appear in concentrations too low to detect post-mortem [5]. As a result, the true burden of fatalities linked to clandestine sexual-enhancement products is likely underestimated. In India, particularly in regions such as Punjab, the increasing availability of synthetic and counterfeit recreational substances has heightened concerns about covert drug use and its medicolegal implications [6-10].

Cases associated with sexual activity or its preparation often show minimal external clues, demanding careful autopsy correlation, judicious interpretation of congestion-dominant internal findings, and an appreciation of toxic agents that may remain analytically invisible. Against this backdrop, we describe the sudden collapse and death of a 28-year-old man shortly after consuming an unlabelled sexual-enhancement capsule—a case that underscores the diagnostic challenges posed by emerging synthetic agents and the importance of forensic vigilance in unexplained young adult fatalities.

### Case Presentation

A well-nourished, well-built male, aged 28 years (height 171 cm; weight 70 kg), was found dead in a hotel room in Amritsar, Punjab. He had checked in with a female sex worker during evening hours who reported that he had consumed a single unlabelled capsule claimed to enhance sexual performance. The capsule was reportedly kept loosely wrapped in a small piece of paper in his pocket, without any packaging or identifying information. According to her account, the individual suddenly collapsed within 10–15 minutes of ingestion, prior to any sexual activity. She did not attempt resuscitation as she was shocked and initially thought he had only

fallen asleep. She left from there when he lay motionless. The room was intact and had no signs of a tussle or struggle; foodstuffs and bottles of alcohol were available but unopened and unconsumed. No other capsules, drug packets, or property belonging to the sex worker indicated foul play. The deceased was taken to the hospital in the next morning. Relatives reported that he had consumed alcohol in moderation over a period of 4–5 years, with no history of any chronic illness or medication use. There was no history suggestive of cardiovascular disease, substance dependence, or psychiatric illness.

The external examination at the autopsy showed marked bluish discoloration of the lips, nail beds, and auricles but no external injury or sign of violence. On internal examination, there was marked visceral congestion: the lungs, liver, spleen, kidneys, and brain all were grossly congested. The stomach was empty, with deeply congested mucosa; no remnants of tablets were seen. The heart weighed 290 g, with normal morphology; the coronary arteries were patent, the valves were normal, and there was no evidence of scarring of the myocardium or abnormality of the conduction system. Histopathological examination of all major organs showed congestion, with no intrinsic pathology or inflammatory changes. Routine toxicological analyses of blood, bile, stomach and intestinal contents, and liver were negative for ethanol, opioids, benzodiazepines, amphetamines, organophosphates, and other conventional poisons. Forensic findings did not indicate sample degradation. In the context of the witnessed sudden collapse following the ingestion of an unlabelled capsule, absence of structural disease, and negative routine toxicology, the death was classified as undetermined, with a strong suspicion of

unknown or synthetic drug-induced functional collapse.

## DISCUSSION

Sudden, unexpected death in a young adult within minutes after the ingestion of an unidentified substance places a significant diagnostic burden on forensic pathologists. In the present case, the temporal agreement of the ingested capsule and the collapse well, before the onset of any sexual activity, very strongly supports an acute pharmacological or toxic event. Such deaths, in the context of unregulated sexual-enhancement products, have become more common both in India and worldwide, often involving adulterated or spurious preparations containing potent vasodilators, sympathomimetic agents, or newer synthetic drugs not commonly picked up on routine toxicological screens [11-13]

The absence of external injuries, rapid sequence of events, and negative findings on standard toxicology suggest a substance with a short half-life, rapid systemic absorption, or from the ever-expanding class of Novel Psychoactive Substances. NPS compounds-such as PDE-5 analogues, synthetic vasodilators, and phenethylamine derivatives-are common ingredients in unlabelled or spurious sexual-performance capsules [14]. Many such analogues are not picked up by conventional laboratory assays because targeted screening protocols are lacking [15]. Acetildenafil, hydroxyhomosildenafil, and dimethylsildenafil are a few PDE-5 inhibitor analogues that have been reported in forensic cases presenting with acute cardiovascular collapse and can be detected only by advanced mass spectrometric methods [16,17].

Visceral congestion at autopsy, which included the lungs, liver, spleen, kidneys, and brain, was consistent with acute poisoning causing hypoxia or cardiovascular collapse. This, in combination with marked congestion of the gastric mucosa, has been described in lethal intoxications due to quick-acting synthetic agents and vasoactive substances [18]. The lack of intrinsic disease on histopathology and grossly normal coronary arteries effectively ruled out structural cardiac pathology, such as myocarditis or coronary anomalies, which remain key differential diagnoses in young adults presenting with sudden collapse [19].

Bluish discoloration of the lips and nail beds indicates severe central cyanosis and should raise suspicion for agents that could induce methemoglobinemia, acute respiratory failure, or cardiovascular shock. There have been sudden deaths due to methemoglobinemia following ingestion of adulterated aphrodisiac tablets containing nitrates or nitrites, which give rise to forensic difficulties as such substances are not preserved or detected [17, 20].

The forensic context of a sex worker-associated sudden death also warrants consideration of commonly misused agents such as sildenafil analogues, amyl nitrites ("poppers"), or stimulant analogues intended to enhance sexual performance. These compounds can precipitate sudden fatal arrhythmias, hypotensive crises, or cerebrovascular collapse in susceptible individuals-even in the absence of pre-existing disease [21]. However, the absence of packaging and the lack of analytical targets substantially limit confirmatory analysis in such cases. In most Indian forensic laboratories, routine toxicology panels remain restricted to conventional poisons. Negative findings, as seen in this case, by no means rule out poisoning, especially when synthetic analogues,

designer drugs, or chemical modifications are used [17]. Previous autopsy series have focused on the necessity for enlarging the toxicology armamentarium and using LC-HRMS or GC-MS-based untargeted screening for deaths due to suspicious unexplained causes [22].

This case underscores the need for such advanced methodologies, particularly in regions where illicit or counterfeit sexual-enhancement drugs are easily available. Ultimately, the cause of death was certificated as undetermined. However, the circumstantial evidence, the absence of alternative pathology, and the autopsy findings taken together provide substantial support for the possibility of an unidentified or synthetic toxic agent. The case underlines a number of critical forensic issues, including the proliferation of unregulated psychoactive and performance-enhancing substances, the limitations of traditional toxicological analyses, and the medico-legal complications arising from deaths in socially sensitive settings. Better analytic capability, strong regulation of over-the-counter sexual enhancers, and increased clinician and forensic awareness are important to prevent these types of fatality in the future.

## CONCLUSION

This case represents the forensic challenge presented by unregulated sexual-enhancement products and emerging synthetic substances that frequently evade routine toxicological detection. The sudden collapse of a young, healthy man shortly after ingestion of an unmarked capsule, in concert with negative toxicology and nonspecific but suggestive autopsy findings, serves to support the likelihood of an unidentified toxic agent. The circumstances serve to underscore the insufficiency of conventional screening methods and the urgent need for expanded

advanced analytical capabilities, particularly broad-spectrum mass spectrometry techniques—in forensic laboratories. Better regulation of over-the-counter sexual enhancers, sensitization of the public, and improvement in the toxicological infrastructure are necessary for better prevention of such unexplained deaths and for confronting the increasing threat of new synthetic compounds in medico-legal practice.

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