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**“A QUICK HIGH BEFORE IMMERSION INTO THE DEEP BLUE: THE FALL OF ICARUS
REVISED.”**

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Introduction

Since the late 1970s, inhalation of volatile nitrites has been used for recreational use, leading to euphoria, desinhibition and enhanced sexual performances. Users call them poppers from the noise made when the glass vials are crushed prior to inhalation. Poppers use has been associated with presentation to the emergency department for acute toxicity, as reported in the present case.

Case report:

We report the case of a 20-year old man admitted to the Emergency Department with complaints of nausea, vomiting and dizziness. He reported recreational inhalation of poppers, with 10 inhalations during a 15-minute period. Physical examination highlighted a deep cyanosis, despite oxygen therapy, but a normal cardiopulmonary examination. Pulse oxymetry revealed a low SaO₂ at 84%. The colour of the arterial blood sample was chocolate brown and gas analysis indicated a normal PaO₂ at 346 mmHg, an oxyhaemoglobin level at 61% and a methaemoglobin rate of 38.2%. Lactate was 154 mg/L. Troponin I measured was less <5, ECG and thorax radiography were both normal.

The patient benefited from a 2 mg/kg methylene blue infusion, leading to rapid cyanosis disappearance and complete recovery. No secondary rise in methaemoglobin occurred and the patient was discharged 24 hours later without complications.

Discussion and conclusion:

Methaemoglobinaemia is a rare, potentially life threatening, condition. Recent reports have pointed out the occurrence of methaemoglobinaemia related to recreational drug such as volatile nitrites (poppers). Fortunately, such presentations are scarce. Indeed, in a comprehensive review, Hunter et al. found 25 articles describing methaemoglobinaemia secondary to poppers use. However, like Icarus, these patients may perish in their desperate attempts of getting high.

These patients typically present a discordance between severe cyanosis and normal high PaO₂, with chocolate brown arterial blood sample. Clinician should be aware that conventional two wavelengths pulse oxymeters are not reliable for oxygen arterial saturation monitoring in these conditions because of their inability to distinguish oxyhaemoglobin from methaemoglobin. This specific feature is responsible for the existence of a saturation gap between oxygen saturation on the pulse oxymeter and the calculated haemoglobin oxygen saturation, which may, in turn, evoke this diagnostic.

Physicians need to have a high index of suspicion in case of sudden cyanosis with low oxygen saturation despite oxygen therapy without subjacent cardiopulmonary pathology, but eventually a history of drug consumption.

Treatment with methylene blue, in a dose of 1 -2 mg/kg in 5-10 min, should be initiated promptly in patients with methaemoglobinaemia higher than 20% or symptomatic.