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Successful suicide with oxygen using a facial mask at hospital – A case report

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AIMS: A psychotic 60-year-old male was hospitalised with fever and pneumonia. Oxygenation was performed and antibiotics were administered intravenously. Two days later the patient was discovered unconscious, with a respiratory failure and bilateral mydriasis. A major jugular turgescence was noted. The perfusion tubing was found connected to those of oxygen mask with a flow of 10 L/min. The patient died a few minutes later. An autopsy and toxicological investigations were required for determining the cause of death.

METHODS: The following specimens were taken: peripheral and cardiac blood in headspace bottles, urine, hair and several organs (lung, heart, brain, liver, spleen, kidney). All perfusion materials were also seized for toxicological investigation. Gas analysis in blood was performed by HS-GC/MS. Drugs were investigated by HPLC/DAD, GC/MS and GC/MS/MS.

RESULTS: Blood was negative for alcohol, drugs of abuse and other drugs, except for loxapine (33 ng/mL). Carboxyhemoglobin was 0.6%, cyanide below 50 ng/mL and GHB 2.6 mg/L. Gas analysis by HS-GC/MS did not reveal any abnormality, which could be explained by the oxygen-carrying capacity of blood. Dissolved oxygen in blood cannot exceed 2% of the oxygen content. The other part of oxygen being in the gaseous form, disappears from blood as soon as it is sampled.
The analysis of the perfusion bag showed a higher oxygen concentration when compared to those of the atmosphere.

CONCLUSIONS: This case illustrates the limitations of toxicological investigation when a physiological gas is involved. Indeed without the knowledge of the circumstances, it would have been very difficult or impossible for the toxicologist to conclude cause of death.

KEYWORDS: *Suicide, Oxygen, Toxicological Investigation*

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