Orchis satyrium; an intoxication by a medicinal herb

Yassine ABDELKEFI, Emna GHARBI, Olfa CHAKROUN-WALHA, Noureddine REKIK

Emergency department, University Hospital Habib Bourguiba Sfax, Faculty of medicine, sfax university. Tunisia;

Corresponding author: *Olfa CHAKROUN-WALHA, Address: Service des urgences et SAMU04 SFAX, Route EL Aïn Km 0.5 ; 3029, Sfax, Tunisia*

Abstract:

Introduction: Traditional medicine often employs medication therapies involving the use of herbs and animal parts. These knowledge traditions are commonly orally communicated. The misuse of these therapies can be dangerous.

Case report: We present the case of a toxic effect of a widely used herb; Orchis Satyrium. The patient had presented a multiple organ dysfunction syndrome.

Discussion: This case reports an unexpected presentation of a widely used herb in traditional medicine. Various species of the genus Orchids have frequently been used in black magic. The use of these herbs can be dangerous; thus, the physician has to be aware by these practices in atypical presentations.

Keywords: Salep; Mascula; Medicinal Herb; Orchid; Poisoning

INTRODUCTION

The use of herbs in traditional medicine is still common in several areas of the world. We report the case of a deadly intoxication by a widely used herb in traditional medicine.

CASE PRESENTATION

A 25-year-old male presented to the emergency department at 7.00 am. He had been complaining from acute abdominal pain, with vomiting, for a few hours. He had no diarrhea. The patient described his pain as severe, colicky, with no exacerbating or relieving factors, and associated with non-bloody, nonbilious emesis. He had no medical past history. He was a lifelong nonsmoker and non-alcoholic.

The case history began one month before the admission. The patient consulted a general practitioner for the same complaints. He was treated by proton pump inhibitors (PPIs) but there was no amelioration. Six hours prior to his admission to the ED, he felt dizzy and weak.

On admission, the physical examination found signs of respiratory distress (respiratory rate:22 cpm; oximetry:89%), and of shock (blood pressure:70/40 mmHg; tachycardia: 100bpm; oliguria). The patient was conscious with pinpoint pupils. He had fever (T°=38.5°C) and diffuse abdominal tenderness, especially in the epigastric area. An electrocardiogram showed a sinus tachycardia.

Initial laboratory tests showed leukocytosis (19000 c/mm3), acute renal failure (urea:6.8 mmol/L; creatinine:160 µmol/L), metabolic acidosis (pH:7.23; PaCO2:37.5 mmHg; HCO3-:15.2; mmol/l BE: -11.6). There were no liver or pancreatic blood test anomalies.

Sepsis was suspected by the medical staff; Peritonitis was the major probable cause.

The initial management started with a fluid

perfusion (2 bolus of 20 ml/Kg of intravenous normal saline). Noradrenaline was then administered to restore the hemodynamic state.

Broad-spectrum antibiotics were promptly administered to treat possible abdominal infection and an abdominal computed tomography (CT) was performed; it was normal. The Chest X-ray and bacterial urine culture were normal.

As the patient's shock persisted, a bed-side transthoracic echography was performed. It showed acute heart failure with low LVEF at 15%, global akinesis, and dilation of the 4 cavities. There were no valvular pathologies.

A toxicological etiology was suspected; therefore, basic toxicological tests were performed and returned negative (Benzodiazepine, Anti-depressors, Paracetamol, Ethanol, Methanol).

Meanwhile, the patient's clinical condition deteriorated; he began to alter his consciousness state (Glasgow Coma Scale Score=12), with neither focal neurologic deficits nor clinical meningeal syndrome. Our decision was to intubate the patient and we had to add dobutamine in order to increase the arterial blood pressure and improve tissue perfusion.

Despite our prompt management, his state deteriorated. The multi-organ failure syndrome persisted. In addition to the aforementioned dysfunctions, he developed a liver failure and thrombocytopenia.

Forty-eight hours after admission, his wife reported that she put *Orchis Mascula* in his food 3 times over a period of three months but she did not give precisions about the quantities. However, there were no specific toxicological tests available to confirm her allegations. Four days later, he was transferred to the intensive care unit for hemodialysis.

A bedside echocardiography was performed and showed an improvement of the LVFE (40%) and regression of the cavities' dilation. Nonetheless, there were also signs of pulmonary embolism. The patient died on the same day.

DISCUSSION

This case reports an unexpected presentation of a widely used herb in traditional medicine. Orchids are known for their medicinal value. It is believed that the Chinese were the first to cultivate, describe and use orchids as early as 200 BC (1, 2, 3, 4). Orchids are represented by about 30 000 wild species – i.e., one tenth of the plant species of the Planet. In Tunisia, the known species is called Orchis mascula. The male orchis (Orchis mascula), also called *Male Satyrion* or *Satyrium*, is a species of European terrestrial orchids (5, 6). It is characterized by the presence of two tubers which resemble testicles from which the original Greek name was derived, "Orkhis". Orchids today populate all the continents of the globe, except for extreme regions such as arid deserts or polar areas. Their numbers are now in constant decline not only because of environmental changes but also due to excessive picking of this plants' flowers and/or tubers.

In some Arab-speaking countries, namely in North Africa, the two tubers are called "The Living and the Dead" (El-hayya u-l-mîyta). One of the tubers is larger than the other. It will

produce the next inflorescence (the living), while the other, which is smaller and desiccated, has already produced a flower (the dead).

In other parts of the Arab world, these tubers are called khusa-th-tha'-leb which means "fox testicles," abbreviated later into “salep”, "sa'leb" or "sahlep" by non-Arabic-speaking users (1). All the parts of the plant can be used in traditional medicine. The tubers seem to be the most used part of Satyrium (1). Allegedly, the tubers, rich in starch and very digestible, were turned into powder and used as an alternative drink for coffee or administered to children and convalescents in England, Turkey and throughout the Middle East in the 17th and 18th centuries. It was also used as a remedy for mouth ulcerations or paralytic affections, a mucolytic, or as an astringent. The Romans prepared drinks made from orchids’ tubers. The “living” tuber, taken in water, was thought to be a powerful aphrodisiac to restore man's virility. Nowadays, it is still used for this lust-inducing effect. The “dead” tuber, however, is thought to have the opposite effect and is considered to be an anaphrodisiac. Various species of the genus Orchids have frequently been used in black magic and in the making of philters of love, as suspected in our case. Due to the oral transmission of the dosages, the use of these herbs can be dangerous; thus the physician has to be aware by these practices in atypical presentations.

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