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Other full case

Wild lettuce (*Lactuca virosa*) toxicity

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Abstract

BACKGROUND

Iran grows a variety of herbs, some of which are processed for pharmaceutical purposes.¹ Wild lettuce ([fig 1](#)), which is known as “Laitue vireuse” in French, “Wilder lattich” in German and “Allubbyne” in Arabic, is also known as “opium lettuce”. Its scientific name is *Lactuca virosa*; in Latin, lactuca means “milky extract” and virosa means “toxic”.² A biennial herb, wild lettuce grows on the banks of rivers and on waste grounds to a maximum height of 6 feet, flowering in July and August.¹ It has a smooth and light green, sometimes purple spotted, erect stem which springs from a brown tap root.² It is cultivated in different regions of the world, such as Austria, France, Germany, Scotland and Iran.¹

The whole plant is rich in a milky juice that flows freely when it is scratched. The juice has a bitter taste and a noxious odour. When dried, it hardens, turns brown, and is known as lactucarium. *L virosa* has been found to contain lactucic acid, lactucopicrin which is amorphous, 50–60% lactucerin (lactucone) and lactucin. Lactocerine is the main component of the lactucarium, which is a neutral insoluble material.¹

Lactucarium is a diuretic, laxative and sedative agent which relieves dyspnoea, and decreases gastrointestinal inflammation and uterus contractions. It has anticonvulsant and hypnotic effects as well. In addition, the lettuce contains traces of hyoscyamine, which is probably responsible for its sedative effects.¹

Before the Victorian period, wild lettuce was well known as a painkiller and sedative. In the 19th century, wild lettuce, especially the desiccated lactescent juice lactucarium, was used as a sedative and analgesic.³ It was used in kidney disorders, for ameliorating painful uterine contractures, and for generalised oedema and icterus, due to its diuretic effect. In its catalogue of medicinal plants published in 1917, the Servall Company asserted that wild lettuce was “highly esteemed to quiet coughing and allay nervous irritation, a good safe

remedy to produce sleep, to be used when opium and other narcotics are objectionable". This was written at a time when opium and cocaine could still be obtained over the counter.³

Lactucarium is not easily made into powder, and is only slightly soluble in boiling water, though it softens and becomes plastic. Powdered components of the herb have been used for external use and it is still used for making a lotion for the skin to relieve sunburn and roughness.¹ Its boiled form is used as an enema for intestinal irritations.¹

CASE PRESENTATIONS

Here we present eight patients aged between 12–38 years referred with various manifestations of wild lettuce toxicity. All of them were managed successfully and discharged after a full recovery.

- Patient 1 exhibited a decreased level of consciousness, agitation, dry mucosa, mydriatic pupils, urinary retention and hypoactive bowel sounds. Patient 2 had ataxia, blurred vision, red conjunctiva and severe anxiety. Both patients were members of a climbing group and after taking a complete history, it became obvious that they had ingested a great deal of the herb "wild lettuce". It was said that in the region they used to go to occasionally, the herb is eaten raw as a vegetable. The second patient developed dizziness, nausea and vomiting gradually and lost consciousness. After that episode, all members of the group were called to the emergency department.
- Patients 3 and 4 experienced hallucinations, sympathetic hyperactivity, nausea and vomiting, and were referred to the hospital 2 h later.
- Patients 5 and 6 were admitted with normal vital signs, dry mucosa, mydriasis and anxiety, headache, dizziness, vomiting and blurred vision.
- Patients 7 and 8 presented with agitation, severe sweating, flushing, euphoria, abdominal cramps, urinary retention and normal vital signs.

TREATMENT

Patients were kept fasted and treated with intravenous fluids to maintain adequate hydration.

Blood and urine samples were taken for laboratory examination and arterial blood gas analysis was undertaken. Vital signs were monitored. Following interviews with the oriented patients, nasogastric intubation and gastro-oesophageal lavage was performed. The liquid of the lavage was sent for laboratory analysis and the presence of fine particles of wild lettuce was confirmed by the laboratory. No other suspect material was seen in the blood, urine and gastric lavage fluid of the patients.

Treatment continued with charcoal and sorbitol, about 30 ml/h for 6–12 h after the nasogastric intubation and lavage.

OUTCOME AND FOLLOW-UP

All eight patients recovered and were discharged 48 h later. Only patient 1 was sent to the intensive care unit (for 48 h) due to the prolonged loss of consciousness. No long lasting complications were seen.

DISCUSSION

It has been proposed that wild lettuce has hypoglycaemic effects, causes insomnia, provides relief from painful menstruation, and causes psychogenic coughs. Some considered it has no therapeutic effects, others believe it has sedative and hypnotic effects, and some classify it as a poison.¹ In the USA, there have been reports of the herb being used as a substitute for opium. Mullins and Horowitz reported intravenous injection of wild lettuce extract and valerian root in three young intravenous drug users. All of them developed fever, chills, abdominal pain, low back pain, neck stiffness, headache, leucocytosis and moderate liver function disorders. All recovered in 3 days.⁴

The milk-like extract and the leaves are the useful components of the herb, and act as a spasmolytic and a sedative.² Medicines which contain lactucarium are used in the treatment of pertussis, bronchial asthma and urinary tract diseases. The seed's oil is effective in atherosclerosis. Some of its side effects and toxicity resulting from overdose include mydriasis and photophobia, dizziness, diaphoresis, auditory hallucination, and cardiovascular and respiratory difficulties caused by dysrhythmia.¹ We observed most of these signs and symptoms in our patients. The severity of the toxicity was dose dependent, according to the history taken from the patients.

Common presentations of toxicity in our patient were mydriasis, dizziness and anxiety, urinary retention, decreased bowel sounds and sympathetic overactivity, suggesting an anticholinergic mechanism. Moderate doses given to animals can act as a narcotic, even causing death if injected.⁴

Our patients suffered from the harmful effects of wild lettuce. The toxicity may have occurred because the herb was ingested when it was fresh and before the usual time for harvesting herbs (our patients ate the wild lettuce in May).

LEARNING POINTS

- A clinical suspicion of toxicity cause by wild lettuce intake and an accurate history provided the basis for the diagnosis.
- Conservative treatment, vital sign monitoring, control of patient intake and output, and reducing their agitation formed the basis of treatment.
- Eating of unknown substances, even herbs, should always be avoided. If herb intake is suspected, immediate contact with medical centres is required.

Footnotes

Competing interests: none.

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Figures and Tables

Figure 1



Wild lettuce.

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