

Yew Poisoning: A Clinical Problem



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Abstract

Introduction: Peripheral nervous system damage, or peripheral neuropathy, is a difficult clinical problem. The most common causes include traumatic injuries, inflammation, and metabolic disorders. Traumatic injuries, both acute and chronic, usually affect single nerves (mononeuropathies) while inflammation and metabolic disorders damage multiple nerves (polyneuropathies). The paper presents case of severe nervous system damage.

Material: Case demonstration. The first part describes the clinical presentation of a female patient with yew needle extract poisoning. The predominant neurological symptom was severe spastic tetra paresis with a bilateral positive Babinski sign and total aphasia. After physical therapy and rehabilitation, the patient's mental status and ability to maintain contact were considerably improved and further increases in muscle strength and physical function were seen, which helped the patient walk unassisted using a walking frame and perform the activities of daily living.

Conclusion

- a) The public should be widely informed about the problem.
- b) Make children aware of the danger of yew consumption.

Keywords: Yew poisoning; Clinical problem; Treatment

Introduction

Common yew (*Taxus baccata L.*) - a species of evergreen coniferous tree or large shrub of the yew family. It occurs naturally in Europe, in western Asia (reaching as far as Iran) and in North Africa. It is a slow-growing, long - lived plant (over a thousand years old), growing on various soils and under various sun conditions. After a period of resource constraints related to over- exploitation and habitat destruction, the species is now in expansion. It is widely used-as an ornamental and providing valuable wood.

Physico-chemical properties

Poisonous plant. In all parts of the plant, apart from the aril surrounding the seed, there are large amounts of poisonous compounds, especially taxin to 2% in leaves, 0,16% in seeds), and ephedrine. Taxin is toxic to the heart, digestive system, nervous system and kidneys. In causes excitation and then paralysis in humans and other mammals. The heart rate increases initially and then slows down, blood pressure drops, atony progresses, and

eventually the heart stops in diastole. The mucosa of the digestive system is severely irritated, resulting in severe inflammation and diarrhea. The respiratory center of the nervous system is affected, the kidneys are damaged and the uterus is stimulated, which results in abortion. However, the abortion effects are weaker than that on the heart and nervous system, therefore the use of yew as a miscarriage causes faster death than miscarriage [1-10]. People poisoning most often occurs when decoction of leaves is consumed for abortive purposes and after children eat seeds surrounded by appetizing-looking arils. The plant is rarely used for suicide purposes, sometimes poisoning results from applications in folk medicine (eg as an anthelmintic agent) or is the result of accidentally chewing twigs [11-17]. The initial symptoms of poisoning are vomiting, severe abdominal pain, diarrhea and drooling. This is followed by dizziness, intoxication, breathing becomes shallow, blood pressure drops- face turns pale, lips turn blue and unconsciousness occurs. Death occurs in a coma [4,8,9,18,19].

Material

Case report

A 20-year-old woman ingested yew needle extract: The patient was initially treated at an intensive care center due to severe arrhythmia in the form of tachycardia and ventricular fibrillation, which occurred a total of 11 times. As a result, the patient was defibrillated multiple times. She was then transferred to and treated at an acute poisoning center. At the time, the predominant neurological symptom was severe spastic tetra paresis with a bilateral positive Babinski sign and total aphasia. She no longer showed cardiovascular abnormalities. When the patient was transferred to the Department of Rehabilitation of the Military Institute of Medicine, intensive physical therapy and rehabilitation were initiated.

Physical therapy and rehabilitation: The physical therapy and rehabilitation program during the patient's stay at the Department of Rehabilitation was adjusted to his condition and gradually modified as clinical improvements were observed [20].

The physical therapy procedures used in the patient included

- 1) four-cell baths, twice daily,
- 2) electrical stimulation of the fibular and tibial muscle groups of both feet,
- 3) cathode galvanization to the hands and feet, twice daily,
- 4) whirlpool massage of the upper and lower limbs, once daily,
- 5) low-frequency alternating magnetic fields with the following parameters: field intensity of 5 mT, frequency of 30 Hz, bipolar sine wave, duration of 15 minutes, twice daily to the wrists and hands and to the feet and lower legs.

The kinesiotherapy program included

- 1) active exercises with no weight-bearing on the hip and knee joints,
- 2) active exercises with regulated resistance for the extensors and flexors of both feet,
- 3) exercises with regulated intensity on an ergometer,
- 4) self-assisted exercises of the ankles,
- 5) gait training and correction.

Kinesiotherapy procedures were performed twice daily, in the morning and in the afternoon. The treatment program was gradually expanded as her motor and cognitive functions improved. The patient's progress during rehabilitation was assessed based on time to recovery of motor functions. At the end of her 3-month stay at the Department of Rehabilitation, she showed marked improvements in her clinical status (maintaining contact, considerable reduction in limb spasticity

and contractures, good sitting tolerance). During her next stay at the Department of Rehabilitation, the patient's management was focused on verticalization and active ambulation, especially gait education, maintaining better contact with the patient, and improving her cognitive functions. The patient's mental status and ability to maintain contact were also considerably improved and increases in muscle strength and physical function were seen, which helped the patient walk unassisted using a walking frame and perform the activities of daily living.

Discussion

People poisoning most often occurs when decoction of leaves is consumed for abortive purposes and after children eat seeds surrounded by appetizing-looking arils. The plant is rarely used for suicide purposes, sometimes poisoning results from applications in folk medicine or is the result of accidentally chewing twigs. Children unknowingly take the fruit of yew in their mouths, swallow them. It is a lethal danger. In order for physical therapy and rehabilitation to be effective in patients with axonal sensorimotor polyneuropathies, it is crucial to establish the causal factor. Physical therapy and rehabilitation must be patient-specific and guided by the patient's current clinical status, including their perception abilities and muscle fatigue.

Effective management after acute yew poisoning is possible only with:

- i. Regular exercises and a long-term rehabilitation process,
- ii. Physical therapy procedures adjusted to the patient's condition,
- iii. The intensity of exercise changing depending on improvements in motor functions.

After treatment conducted in the patient with yew needle extract poisoning, her mental status and ability to maintain contact were considerably improved and further increases in muscle strength and physical function were seen, which helped the patient walk unassisted using a walking frame and perform the activities of daily living.

Conclusions

- a) Consumption of yew fruit is dangerous to health, even death.
- b) The public should be widely informed about the problem. Make children aware of the danger of yew consumption.

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