



Case Report

A toxicologically confirmed case of yellow oleander poisoning

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How to cite this article : Fathima Fahmi Shirin M, Suresh V, S V Raghava, A toxicologically confirmed case of yellow oleander poisoning

J Ind. Soc. Toxicol 2024;20(1):13-15



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Abstract

There are many benefits and dangers of plants are known to humans since ancient times. Cases of voluntary ingestion of oleander with a suicidal intent are uncommon. Case reported here is of a 28-year-old married woman, brought for autopsy at mortuary, Victoria Hospital, with history of consumption of seeds of yellow oleander. As per history given by Police, she wanted to commit suicide due to allegedly unhappy married life. In the case reported the victim was aware about the possibility to commit suicide through the ingestion of oleander seeds. After meticulous autopsy and Forensic Science Laboratory report, the cause of death was opined as cardiac failure due to yellow oleander poisoning.

Keywords

Yellow oleander, Suicide, cardiac Poison

Introduction

The ancient people had immense knowledge about the medicinal and poisonous properties of the flora and fauna present around them. Toxic plants had a dark past involving their use in murder, suicide, in capital punishments and in hunting. With the course of time and development of countless numbers of artificially synthesized hazardous chemicals. This generational knowledge and use of poisonous plants reduced in the society. But still in many parts of our country, especially in rural communities, the traditional use of medicinal herbs and poisonous plants are still prevalent, Owing to the knowledge and awareness of toxic properties of these plants in these regions. Aconite, Ricinus Communis, Abrus Precatorius, Semecarpus Anacardium etc are some of the traditionally used Toxic plants of India. These plants when ingested can destroy lives of persons mysteriously without evidence of any violence. These plants are furthermore important because they can easily be procured with no cost.

Knowledge about salient features of these poisons is of utmost importance. One such group of poisons are cardiac glycosides, namely cereberathevetia (yellow oleander), neriumdorum (white oleander) and digitalis purpurea.[1]Although the cases of suspected oleander poisoning are not uncommon, in most of the reports the cause of death will be opined on the presumption made on the based upon the history available, and correlating clinical and

autopsy findings, owing to the FSL findings being negative.[2] This case reported here is that of yellow oleander poisoning case which was used as a method of suicide. Statistics of use of yellow oleander specifically is not available. Aim of this case is that autopsy surgeons shall not be unprepared for to handle when such a case comes across and to do meticulous autopsy and prompt toxicological investigation.

Case History

A dead body of a 27-year-old female was brought for autopsy at mortuary of Department of Forensic medicine and Toxicology, Victoria Hospital with a history of deliberate consumption of seeds of yellow oleander. She was treated in Victoria hospital for one day where she revealed that she had consumed multiple seeds of yellow oleander which she procured from neighbourhood. Photos of the seeds and leaves of the plants were later found on her phone's image gallery by Investigating police officer. There was a history of alleged marital discord which caused her to consume oleander seeds. Deceased was light brown complexioned, moderately built and nourished. Rigor mortis was present over all parts of the body. Conjunctiva of both eyes were congested. Bluish discolouration was present over the tips of fingers and nail beds. Multiple petechial hemorrhages were present over the anterior and posterior surfaces of the heart. Stomach mucosa was congested and contained

100 ml of brown coloured fluid. Upon careful inspection, multiple fragments of yellowish brown-coloured seeds were found over the stomach mucosa and inside the fluid. (Fig 1).

All other internal organs were congested. Uterus was normal in size and uterine cavity was empty. Blood and viscera were sent for chemical analysis at Forensic Science Laboratory. Brain, heart, kidneys, multiple pieces of liver were sent for histopathological examination. Chemical analysis revealed presence of oleander glycosides in blood and viscera samples. Histopathological examination report showed evidence of congestion in all organs. Final opinion regarding cause of death was given as death is due to cardiac failure as a result of consumption of oleander glycoside (yellow oleander).

Discussion

The yellow oleander plant is an ornamental shrub and grows all over India. It has yellow funnel shaped flowers and pointed green leaves. Thus, making it an attractive looking ornamental plant. It belongs to the Dogbane family (Apocynaceae) in which the white or pink oleander (Nerium) also is classified. Arab physicians were known to use it for anticancer treatment. Fruit is globular, light green in colour, about 4 cm to 5 cm in diameter. It encases a single large nut. Each nut contains 5 pale yellow seeds. All parts of the plant are poisonous.[3]



Figure 1: Stomach contents and congested kidneys

Highest concentration of cardiac glycosides is in the kernel of seeds, followed by leaves, fruit and sap. Swallowing of seeds is most important. Active principles are Nerifolin, Peruvoside, Ruvoside, Thevetin B, ThevetinA and Thevetoxin. [3] All are inhibitors of $Na^+K^+ATPase$ inhibitors. [3] This causes cellular depolarization and loss of the negative membrane potential that affects the whole conduction system of the heart. Hence there will be arhythmias like atrial fibrillation, ventricular fibrillation. Anti Digoxin Fab fragments are used as specific treatment for yellow oleander poisoning. [3]

Oleander plants are grown throughout various parts of South India. The pharmaceutical properties of oleander have been known since ancient times. [3] There may be misuse of these poisonous plants for suicidal as well as homicidal purposes as long as members who are aware of the toxic effects of this plants are there in our society.

Conclusion

The outcome of yellow oleander poisoning depends upon the amount of consumption and how quickly the management has started. Henceforth, practicing doctors should know the signs and symptoms of this lethal cardiac poison in order to save lives of victims. Perhaps many cases of sudden cardiac death in young age group which is ruled out as idiopathic or genetic would be due to accidental or intention ingestion of these poisons. Knowledge and awareness can help to find the actual cause of Death.

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