

Rare Case Report of Azalea Poisoning in Humans

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Abstract: *Some flora species usually grown in our gardens and indoor can be poisonous. When grown without knowledge, these pose serious health hazards to children and even pet animals. One of them are plants belonging to Ericaceae family, like Azalea which is an ornamental plant, commonly seen in gardens in variety of colours. Other flora mainly red Rhododendron species whose flowers are widely present in Sub Himalayan and Himalayan belt whose flowers are edible and used in various forms like squash and sauces can be poisonous too. Honey extracted from bees fed on these flower's nectar may contain Grayanotoxins, which mainly act on sodium channels and may produce wide range of symptoms. One should be aware of potential risk of such plants and plant products.*

Keywords: Azalea poisoning, Grayanotoxins, mad honey, poisonous ornamental plants

1. Introduction

Azalea, or commonly known as 'honey suckles' is a decorative indoor and outdoor flowering plant that can be poisonous in humans [1]. It is a species of ornamental plants with very close resemblance to Rhododendrons of sub Himalayan and Himalayan regions. These plants can be easily seen these days in gardens and indoors of most of the plant lovers with varying colours and breeds. Lesser known fact is that these species can be toxic, and if consumed can lead us to serious trouble, mostly as in the case of children who are in the habit of putting things in mouths and in the case of pets. Many accounts have been seen in literature, of pets and animal poisoning after consumption of plant buds, flowers and leaves in animals grazing on these species but there are very rare accounts of humans poisoned with such plants. Poisoning in humans was described as old as the first century BCE when Roman troops were allegedly poisoned with honey by the Heptakometes of Turkey. They were reported to be confused and vomiting and were subsequently defeated in battle after eating honey produced by nectar of Rhododendron luteum. Considering this account from history, ingestion of honey produced by honey bees sucking nectar of these species can be poisonous along with plant parts like flowers and leaves etc. This kind honey is often referred to as 'mad honey' due to the confusion and drowsiness it is known to cause. The toxic substances in it are identified as Grayanotoxins, also known as andromedotoxin, acetylandromedol or rhodotoxin, can be derived from the leaves, twigs or flowers of the plants belonging to genera of the Ericaceae family Azalea, Rhododendron, Pieris, Agarista and Kalmia [1, 2, 3]. Many food items prepared from flowers of these species can be toxic too apart from honey, like squashes, sauces locally referred as chutney, which are often consumed in our part of the world during late springs and throughout summer. As little is known about the toxicity in humans, it goes unnoticed sometimes due to mild symptoms and sometimes due to lack of awareness about such occurrences. Risk has also increased due to selling of online products like honey in the past few years. It may pose unexpected health risks without knowing the origin of the product.

2. Case Report

A 7 years old female child was brought to paediatric OPD with a history of sudden onset of drowsiness, lethargy and vomiting after ingestion of some red flowers while playing outdoors in home garden. Child was seen first in paediatric OPD to rule out any bite over her body. On examination child was hemodynamically stable (Pulse: 96/min; central and peripheral pulses well palpable; BP: 100/60 mm of Hg{50th to 75th percentiles}; capillary refill time <2 sec, SpO₂: 96%), having altered sensorium in the form of drowsiness, however rest of neurological and systemic examination was within normal limits. Child was brought to ENT OPD to rule out any foreign body in the upper airway and to rule out any signs of anaphylaxis. Indirect laryngoscopy examination was done which was normal. No foreign body was visualized and no signs of anaphylaxis were noticed. On enquiring the mother and one guardian of the child it was found out that child has accidentally consumed petals of an ornamental flower present in their garden, which after seeing pictures was identified as red hybrid Azalea. Immediately the case was reported to the toxicology department at AIIMS New Delhi through a helpline number and it was found out that this plant part can be toxic. Child was admitted to the paediatric ward immediately for monitoring and observed for 24 hours. She was kept nil orally for the first 6 hours, given iv fluids, supportive treatment in the form of antiemetics and proton pump inhibitors, vitals were monitored closely. Child's sensorium improved gradually over 6 hours and subsequently the child was allowed orally. Routine blood investigations were carried out and found to be normal. Child was active after 6 hours of initial presentation but kept under observation for 24 hours and then discharged.



Figure 1: Photograph of red Azalea hybrid.



Figure 2: Photograph of orange Azalea.



Figure 3: Photograph of pink Azalea

3. Discussion

A very few cases of Azalea poisoning in humans had been reported in literature, none found with lethality in humans. These are deciduous or evergreen ornamental plants, resembling rhododendrons but are separate genus which contain 5 or 10 stamens. These contain Grayanotoxins, which act by binding to voltage-gated sodium channels of the neurons and also to M_2 -subtype of muscarinic receptors [4, 5], hence resulting in various symptoms like lethargy, mental confusion, drowsiness bradycardia, hypotension, respiratory depression, diarrhoea excessive salivation, burning sensation in mouth, vomiting etc. In the Mediterranean region this kind of poisoning is noticed

after consumption of honey harvested from honey bees fed on these species, hence the term ‘mad honey’ is used to describe it, which may have been coined because of confusion occurring after consumption of such honey [1, 2, 3]. Due to the increase in purchase of online food products like honey, herbal teas and herbal medicine the risk and health hazards related to such products have increased further and such kind of toxicity is prevalent and to be kept in mind while treating and attending to patients especially children, who have a tendency to put things in their mouth. Symptoms may vary from mild symptoms like nausea, vomiting, salivation, burning sensation, mental confusion to potentially life threatening symptoms like bradycardia to heart blocks and respiratory depression and coma. Proper history when enquired may lead to early diagnosis and prompt supportive treatment as there is no specific antidote.

4. Conclusion

In an encounter with such a rare case of accidental poisoning with an ornamental plant, it has been concluded that special attention should be given to children while they are playing outdoors. They should never be left unattended. Any new species of plant or any product related to it should be brought to homes only after having adequate knowledge about the species. Herbal products or medicine should only be used under expert guidance, if required.

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