

Introduction

- Manchineel tree produces one of the most potent tree toxins known
- Although toxicity has been known for years, there is scant literature on the pathophysiology, clinical presentation or treatment
- Tourists unfamiliar with the tree may be exposed as they do not recognize the tree and the risks it poses

Case Description

75-year-old Canadian woman traveled to Costa Rica as a tourist

Exposure: • Picked up and ate two "apples" on the beach under a tree

30 min: • Tongue-lip swelling, bitter taste and burning sensation progressing to diaphoresis, palpitations and diarrhea

Day 1: • Treated at a local clinic with antihistamines and intravenous fluids with improvement, and told she ingested manchineel fruit

Day 2: • Ongoing bitter taste and burning; given 5-day course of antihistamine, prednisone and PPI by local gastroenterologist

Day 4: • Symptoms improve, however intermittent recurrence of bitter taste, oral paresthesias, swelling, palpitations and diarrhea

Day 14: • Returns to Canada with ongoing intermittent symptoms

1 month: • Seen in the Tropical Disease Unit
• Physical exam unremarkable
• Normal CBC, electrolytes, creatinine, liver enzymes, TSH
• Negative Blood cultures and serologies for HIV, syphilis, Strongyloidiasis, and Hepatitis A, B, and C
• Unremarkable TTE and Holter monitor

1.5 month: • Advised to discard all clothing and towels that had been in contact with the tree

2 month: • Symptoms had resolved

3 month: • No recurrence of symptoms

Manchineel Toxicity

- *Hippomane mancinella* or manchineel tree
- Coastal regions of Caribbean, Tobago, Central America and West African coast
- Small spherical green fruit or "beach apple"
- Often marked but unfamiliar tourists may use tree for shelter or ingest fruit mistaken for apples



Figure 1: Distribution in the Americas

- Reports of toxic ingestions and dermatitis as far back as 16th century
- Hippomanin A and diterpene esters have been isolated, but likely more than one toxin present in sap and fruit
- Most common is contact with the sap or even rainwater dripping off tree
- Manchineel dermatitis: severe contact dermatitis accompanied by burning and pruritus progressing to erythema and blisters
- Ocular injury with severe conjunctivitis also described
- Symptoms occur within hours; may last hours to days depending on extent of exposure
- Treatment involves cleansing to remove toxin and supportive care



Figure 2: Manchineel Fruit
Britannica. Accessed November 7, 2024.
<https://www.britannica.com/plant/manchineel>

- Ingestion of fruit causes spectrum of manifestation from asymptomatic to death
- Most common symptoms include oropharyngeal pain, swelling and irritation as well as abdominal pain, vomiting and diarrhea
- A few cases report gastritis and esophagitis with ulcerative lesions and hemorrhage
- Two cases report sinus bradycardia
- Treatment is supportive
- Larger ingestion is associated with more severe symptoms but other factors influencing presentation are unknown

Significance of Case

Similar to other reports, our patient was a tourist who mistakenly ingested manchineel fruit.

What is unusual is multiple mild recurrences for several weeks which only resolved after discarding clothing that had been in contact with tree, raising possibility that toxins remained on fabric leading to repeated low dose exposure.

Conclusion

- Manchineel tree is a highly toxic and can cause severe contact dermatitis from cutaneous exposure to sap as well as oral and gastric manifestations from ingestion
- Travellers to Caribbean and Central America at particular risk if unfamiliar with dangers of tree and should be counselled to avoid marked trees or unfamiliar fruit
- Reasonable to dispose of contaminated clothing if recurrent symptoms are observed

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