

# Case report: Epigastric abdominal pain from beverage ingestion of freshly squeezed juice of the Hardy Orange Flying Dragon plant (*Poncirus trifoliata*)

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## Abstract

We report the case of a 25-year-old male who presented to the Emergency Department (ED) with severe epigastric abdominal pain immediately after ingesting a freshly squeezed beverage form of Flying Dragon Hardy Orange plant (*Poncirus trifoliata*). Poison control was contacted and recommended symptomatic treatment only. The patient's pain resolved while in the emergency department. Seed and rind preparations have been used as an herbal remedy in East Asia. A number of research articles point to ongoing investigations into the antiinflammatory and possible antiviral properties of *Poncirus* species. Freshly squeezed *Poncirus trifoliata* can cause significant abdominal pain.

**Key words:** poncirus trifoliata toxicity; hardy orange toxicity

## Introduction

Plants can be a source of medicinals but can also be a source of adverse reactions and toxicity. The Flying Dragon Hardy Orange plant (*Poncirus trifoliata*) can cause severe abdominal pain when the fruit is freshly squeezed. Knowledge of the toxic effect of this plant can prevent a prolonged and complex work-up for abdominal pain.

## Case Presentation:

A 25-year-old male presented to the ED with intense epigastric abdominal pain immediately after drinking freshly squeezed juice from oranges he had picked from a tree while on vacation in Florida. He brought the oranges home from vacation the day after picking them. He found the stems and the oranges to be unique and kept several stems as well as the orange fruits. His relatives in Florida told him that the tree was a Flying Dragon Hardy Orange. The tree was used by the relatives as a hedge.

In the ED, he was noted in good health with no significant past medical history. He had no nausea, vomiting or diarrhea. Vital signs were within normal limits. His physical exam including his abdominal exam was unremarkable. Basic lab work including a complete blood count, a basic metabolic panel and lipase were within normal limits. Poison control was contacted and recommended symptomatic treatment only. The pain resolved completely within 60 minutes of arrival.

The patient was discharged. At 48 hour follow up by phone, the patient was well with no further symptoms.

## Discussion:

The trifoliolate orange (*Poncirus trifoliata*) is a deciduous thorny shrub with trifoliolate leaves. There has been botanical debate concerning whether trifoliolate oranges should belong to their own genus (*Poncirus*) or should belong to the *Citrus* genus. The plant is native to Northern China and Korea. It is also known as the hardy orange because it is cold-hardy and can tolerate moderate frost and even snow. *Poncirus* species can be used as hedges. A variety with curved long thorns is known as the Flying Dragon variety. [1] The fruit is smaller than an orange and has a high concentration of seeds. Seed and rind preparations have been used as an herbal remedy in East Asia. However, freshly squeezed *Poncirus trifoliata* can cause significant abdominal pain.

Prolonged skin contact can also cause skin irritation The North Carolina extension site classifies *Poncirus* species as poisonous but with "low toxicity when eaten, skin irritation minor and lasting only for a few minutes. Severe stomach pain and nausea." [1]

However, the fruit rind of *Poncirus* can safely be made into jams and jellies.[2]

The ground rind and ground seeds have been used in traditional Chinese medicine to treat eczema as well as other conditions. [3-4]

A number of research articles point to ongoing investigation into the antiinflammatory and possible antiviral properties of *Poncirus* species. [5-8]

## Conclusion:

We report the case of a 25-year-old male who presented to the ED with severe epigastric abdominal pain after ingesting a freshly squeezed beverage form of Flying Dragon hardy orange (*Poncirus trifoliata*). Poison control was contacted and recommended symptomatic treatment only.

The patient's pain resolved while in the emergency department. Freshly squeezed *Poncirus trifoliata* can cause severe abdominal pain. Knowledge of the toxic effect of this plant can prevent a prolonged and complex work-up for abdominal pain.

### Conflicts of Interest:

The authors declare that they have no conflicts of interest.

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