



## CASE REPORT

# Mango Consumption Induced Oral Allergy Syndrome – A Rare Case Report

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### ARTICLE INFO ABSTRACT



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**Introduction:** Mango, often referred to as the "King of Fruits," is a tropical delight scientifically known as *Mangifera indica*. Despite its delectable taste and numerous health benefits, it's important to recognise that mangoes can trigger allergic reactions in some individuals. While mango allergies are relatively rare, they can cause discomfort and health concerns for those who are sensitive to certain compounds found in the fruit. In this case report, we discuss a patient who experienced oral allergy syndrome (type I hypersensitivity) after consumption of mango.

**Case report:** This paper represents the case of a 26-year-old male adult patient who presented with the chief complaint of experiencing 25 episodes of sneezing, an itchy throat, and facial puffiness after consuming mango. The patient had no prior history of allergies or co-morbidities.

**Conclusion:** The evidence in this case shows mango can be a potential cause for anaphylactic/Type I hypersensitivity reactions, which are rare. Still, more research has to be taken into account to confirm this type of adverse reaction.

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## Introduction

Mango, often referred to as the "King of Fruits," is a tropical delight scientifically known as *Mangifera indica*. This luscious fruit is beloved for its succulent flesh, aromatic fragrance, and sweet, tangy flavour native to South Asia (Sareen et al., 2011). Despite its delectable taste and numerous health benefits, it's important to recognise that mangoes can trigger allergic reactions in

some individuals. The fruit has been reported to cause both type I allergy (anaphylaxis or oral allergy syndrome) and type 4 allergy (contact dermatitis) (Miell et al., 1988).

While mango allergies are relatively rare, they can cause discomfort and health concerns for those who are sensitive to certain compounds found in the fruit. These



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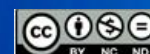
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allergic reactions are typically triggered by proteins found in the skin, sap, and fruit itself (Berghea et al., 2021).

Mango allergy may occur as type I hypersensitivity reactions ranging from erythema, hives, angioedema, wheezing, or oral allergy syndrome to severe anaphylactic reactions, or as type IV hypersensitivity reactions such as contact dermatitis, which begin just after consuming a food with a potential allergen to which the patient is sensitive (Berghea et al., 2021).

Oral allergy syndrome, also referred to as pollen-food allergy syndrome, is a type of food allergy caused by nuts, spices, fruits, and raw vegetables, mostly when uncooked (Hassan et al., 2016).

In this case report, we discuss a patient who experienced oral allergy syndrome (OAS) symptoms like sneezing, an itchy throat, and facial puffiness after consuming mango.

### Case Report

A 26-year-old male adult was admitted to the emergency room on May 25, 2022, following the consumption of mango in the morning and experiencing an allergic reaction. He presented with complaints of excessive sneezing (25 times), an itchy throat, and facial puffiness.

The patient had no history of fever, vomiting, or loose stools. He had no other co-morbidities. He was an alcoholic. The patient's Glasgow Coma Scale reading showed eye response (E4), verbal response (V5), and motor response (M6). He was conscious and oriented towards place and time. The patient had negative readings for pallor, icterus, clubbing, cyanosis, lymphadenopathy, and oedema.

Vital signs on admission were recorded, which showed a pulse rate of 90 beats per minute, a blood pressure of 120/70 mmHg, a respiratory rate of 20 cycles per minute, and a temperature of normal. Laboratory investigations were done and found an elevated total count of 12700 cells/cm<sup>3</sup>, indicating the occurrence of an allergic reaction. The patient was kept on observation for one day and was discharged after two days from the date of admission.

### Treatment of the patient

The patient was treated with supportive treatment measures. Supportive treatment included continuous monitoring of vital parameters, Normal Saline 500 mL Infusion: Administered for hydration Injection: Hydrocortisone 200mg IV, administered to mitigate the allergic inflammatory response. Injection Pheniramine Maleate 2 mL (22.75mg) IV: Given to alleviate symptoms such as sneezing, itching, and puffiness. Injection Ranitidine 50 mg/2 mL IV: Administered to reduce gastric acid production and potential gastrointestinal symptoms. And injection of adrenaline (0.5 mL IM): given to counteract severe allergic reactions.

### Discussion

Rubin and Shapiro were the first to report an anaphylactic reaction following the ingestion of mango; since then, the fruit has been reported to cause both type 1 allergy (anaphylaxis or oral allergy syndrome) and type 4 allergy (contact dermatitis) (Rubin et al., 1965). Renner et al., discovered two major allergens in mango, 27 kDa and 15 kDa, which caused anaphylaxis. (Renner et al. 2008). Hassan et al. identified a few mango allergens: Man i 14kD and Man i Chitinase, mentioned in a study reported. (Hassan et al., 2016). Furthermore, Sareen et al. reported a total of 17 reports documenting a total of only 10 patients with immediate hypersensitivity reactions and 12 patients with delayed hypersensitivity reactions due to mango consumption (Sareen et al., 2011). Although instances like these are rare but are still reported in other countries, cases like this are very rare in India. Since mango has been a staple fruit in the Indian diet, it is consumed regularly during the summer throughout India. In the above-discussed case report, it is evident that the adverse event that occurred was probably (on the WHO causality assessment scale). related to the consumption of mango. Priyamvada et al., reported a case of food allergy-induced OAS where the parents of the patient had concerns that the reaction might be due to the pesticides (Priyamvada et al., 2008). Cases like these pose the question of how much of these OAS cases might actually be due to the use of agricultural chemicals like pesticides, fertilisers, and ripening agents.

### Conclusion

The evidence in this case shows mango can be a potential cause of anaphylactic/type I hypersensitivity reactions (OAS), which are rare. The occurrence of such cases can also be suspected to be attributed to various chemical compounds being used in the field of agriculture in recent times, which are being sprayed on fruits right from being used as pesticides, fertilisers, and also ripening agents. Further studies are necessary to exactly identify what percent of hypersensitivity reactions are actually caused by the fruit itself and what percentage are actually caused by the chemical compounds used in agricultural practices.

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### Conflict of Interest

None

## References

- Berghea, E. C., Craiu, M., Ali, S., Corcea, S. L., & Bumbacea, R. S. (2021). Contact Allergy Induced by Mango (*Mangifera indica*): A Relevant Topic?. *Medicina* (Kaunas, Lithuania), 57(11), 1240.
- Hassan, A. K., Venkatesh, Y. P. (2015). An overview of fruit allergy and the causative allergens. *European annals of allergy and clinical immunology*, 47(6), 180–187.
- Miell, J. P., Papouchado, M., Marshall, A. (1988). Anaphylactic reaction after eating among. *BMJ (Clinical research ed.)*, 297, 1639–40.
- Renner, R., Hipler, C., Treudler, R., Harth, W., Süss, A., & Simon, J. C. (2008). Identification of a 27 kDa protein WHO. The use of the WHO–UMC system for standardised case causality assessment. Available at: <https://www.who.int/docs/default-source/medicines/pharmacovigilance/whocausality-assessment.pdf>. Accessed on 30/Aug/2023.
- in patients with anaphylactic reactions to mango. *Journal of investigational allergology & clinical immunology*, 18(6), 476–481.
- Rubin, J. M., Shapiro, J., Muehlbauer, P., & Grolnick, M. (1965). Shock Reaction Following Ingestion Of Mango. *Jama*, 193, 397–398.
- Sareen, R., & Shah, A. (2011). Hypersensitivity manifestations to the fruit mango. *Asia Pacific allergy*, 1(1), 43–49.
- Tatachar, P., & Kumar, S. (2008). Food-induced anaphylaxis and oral allergy syndrome. *Pediatrics in review*, 29(4), e23–e27.