

# Unusual Excessive Swelling of the Tongue after Calcium Acetate Ingestion: A Case Report

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## Abstract

Common side effects of calcium acetate include increased blood calcium levels, nausea-vomiting, diarrhea, and fatigue, while side effects of unknown incidence include "swelling". We present the case of an allergic reaction limited to tongue swelling alone, not showing other anaphylactic symptoms. Our case was a female patient who applied to the emergency department with the complaint of isolated tongue swelling three hours after using calcium acetate for treatment. It should be kept in mind that calcium acetate, a food additive, may cause this in patients with the complaint of isolated tongue swelling, but the cause of which cannot be determined.

**Keywords:** Calcium Acetate, Allergic Reactions, Swelling of Tongue, Drug Interaction

## Introduction

Calcium acetate is used to treat hyperphosphatemia in patients with chronic renal failure. Because in these patients, the serum phosphorus level rises as a result of decreased glomerular filtration rate. High serum phosphorus is associated with increased morbidity and mortality<sup>1</sup>. Along with its needed effects, calcium acetate may cause some unwanted effects. Common side effects of calcium acetate include increased blood calcium levels, nausea-vomiting, diarrhea, and fatigue, while side effects of unknown incidence include "swelling"<sup>2</sup>.

In spite of the fact that the known very rare side effects of the oral form of calcium acetate include swelling of the mouth, face, lips, tongue, or throat, the number of reported cases is few. We present the case of an allergic reaction limited to tongue swelling alone, not showing other anaphylactic symptoms.

## Case Report

A 68-year-old obese Turkish female patient with a medical history of chronic kidney disease, diabetes

mellitus, and hypertension controlled with irbesartan-hydrochlorothiazide, furosemide, and calcium channel blockers was admitted to the emergency department with complaints of excessive tongue swelling and fatigue (Figure 1, 2). During the initial examination, the patient had difficulty speaking, could only use two-word phrases, and could only breathe through the nose. Her tongue had filled the entire oral cavity. Her relatives described how these symptoms started to increase about 2 hours before she came to the Emergency Department (ED). No other part of her face or body had any swelling. There was no history of an associated rash. She had no abdominal pain, allergies, or history of angioedema. In the first evaluation, it was learned that the patient had just started oral calcium acetate tablet therapy. The calcium acetate tablet was the only medication she took orally in the three hours before the presentation. The patient's vital signs are as follows: blood pressure 176/74 mmHg, heart rate 74 beats per minute, respiratory rate 23 beats per minute, body temperature 36.2 °C, oxygen saturation 98% (at room temperature and at room air). In the physical examination, rhonchi were heard in all lung areas due to forced inspiration. The oropharyngeal examination could not be performed due to excessive swelling of the

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**Figure 1:** Tongue swelling front view



**Figure 2:** Tongue swelling side view

tongue, and uvula edema could not be evaluated. Besides, she had difficulty tolerating his oral secretions. There was no itching, redness, urticaria, or angioedema on the skin or mucosa, which were other signs of anaphylaxis. In the blood results taken at the first application by the patient, the sodium value was 118 mmol/L. The patient immediately

received methylprednisolone (80 mg), pheniramine (45.5 mg), pantoprazole (40 mg), and normal saline (1000 ml). Epinephrine (intramuscular 0.5 mg) was administered intramuscularly to relieve the patient's complaint. After the second dose of adrenaline (intramuscular 0.5 mg) was given, the swelling in her tongue began to subside, and she was able to speak 2 hours later. Necessary warnings were given to the patient about the drugs she used, and she was discharged.

## Discussion

Our case was a female patient who applied to the emergency department with the complaint of isolated tongue swelling three hours after using calcium acetate for treatment. A common cause of angioedema is allergies. This condition usually occurs as a result of the body's response to medications. People with angioedema may have swelling in parts of the body (face, eyelids, ears, mouth, tongue, hands, feet, or genitals). A small number of studies have reported cases of drug-induced language disorders<sup>3</sup>, but a comprehensive overview of drugs associated with tongue disorders as an adverse effect is not available. In total, 121 (7.4%) of the 1645 drugs have been associated with tongue disorders as adverse drug reactions<sup>4</sup>. The most common drug-induced tongue disorders are glossitis, tongue edema, tongue discoloration, and burning tongue<sup>4</sup>. Tongue edema was reported in 22 drugs (1.3% of 1645 drugs).

Our patient did not have any of the systemic symptoms, hypotension, or dermatological symptoms seen during the anaphylactic reaction<sup>5,6</sup>. The differential diagnosis was, of course, angioedema. We performed literature searches using conventional medical databases. In the literature, only one patient who had swelling of the tongue after the use of calcium acetate was reported<sup>7</sup>. Calcium acetate is a phosphate binder used in the treatment of hyperphosphatemia. Besides, it has another common usage area. It is used as an acidity regulator (additive number E263) or buffering agent, nutritional supplement, flavor enhancer, and preservative in foods<sup>8</sup>. It should be kept in mind that calcium acetate, a food additive, may cause this in patients with the complaint of isolated tongue swelling, but the cause of which cannot be determined. It is impossible to form a general opinion with only one reported case. This case can be a starting point for future research.

## Conclusion

The use of calcium acetate for therapeutic purposes may be more common than thought because calcium acetate is also used as a food additive. Clinicians should be familiar with its side effects to properly assess the potential for serious adverse events..

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