

CASE REPORTS

Chocolate-induced prolonged angioedema in an elderly patient

ALAGIAKRISHNAN KANNAYIRAM¹, ALI REZAEI¹, SEIKALY HADI²

¹Department of Medicine, University of Alberta, Edmonton, Canada

²Department of Surgery, University of Alberta, Edmonton, Canada

Address correspondence to: Alagiakrishnan Kannayiram. 1259, Glenrose Hospital, 10230-111 Avenue, Edmonton, Alberta T5G 0B7, Canada. Tel: +1-780-735-8800; Fax: +1-780-735-8846. Email: KAlagiakri@aol.com

Abstract

This report presents a 93-year-old woman with prolonged angioedema associated with diabetic chocolate and chronic angiotensin-converting enzyme inhibitor use.

Keywords: *angioedema, elderly, chocolate, ACE inhibitor*

Case report

A 93-year-old woman with a history of hypertension, hypothyroidism and diabetes mellitus type 2 was admitted with a complaint of tongue swelling, after consuming a piece of diabetic chocolate for the first time. There is no prior history of allergies to drugs or foods. She had been taking Ramipril 5 mg daily for the past 4 years.

On the day of admission, after consuming a piece of diabetic chocolate she started to feel a tingling sensation in her tongue and after a couple of hours she was brought to the emergency room because of the tongue swelling. She received corticosteroids and Ramipril was stopped. As she had no drooling, stridor or respiratory distress (oxygen (O₂) saturation was 94%), she was admitted for a close airway observation with no invasive intervention. On the third day of admission, her angioedema worsened and O₂ saturation fell below 90% and she was intubated. By the fourth day, swelling ameliorated spontaneously and she was extubated. On day 7, massive tongue swelling reappeared and extended to the base of the tongue, making tracheostomy inevitable. Tracheostomy tube was removed on day 22. Tongue swelling disappeared on day 28 of admission, and her articulation returned to normal. No urticaria or rash was observed. No eosinophilia was observed although a 10% monocytosis was evident from 7th to 19th day of admission. Deficiency in C1-esterase inhibitor function was ruled out twice, excluding the possibility of hereditary and acquired angioneurotic oedema [1]. Serum protein electrophoresis revealed a normal pattern.

Discussion

Common causes of allergic angioedema in old age can be due to foods, especially peanuts, shellfish, milk, eggs and tree nuts, medications like penicillin and sulpha drugs, radio contrast material and insect bites. Other causes of angioedema without allergy include lymphoproliferative disorders, certain autoimmune disorders, medications like angiotensin-converting enzyme inhibitors (ACEI), non-steroidal anti-inflammatory drugs, and rarely hereditary angioedemas [2]. New onset of egg allergy in an adult aged 55 years has been reported [3]. There is one epidemiological study that examined food allergy in an elderly population, aged 60–97 years with a mean age of 77 years. It was found that 28% of the elderly subjects studied were allergic to at least one food allergen [4, 5].

The components in the diabetic chocolate include malt, inulin, calcium carbonate, acesulfame, sucralose, sodium benzoate, cocoa butter, palm oil, potassium sorbate and sodium caseinate. To our knowledge, there is only one report on angioedema following consumption of malt-containing chocolate in a young, 18-year-old patient [6].

There is also a possibility that the patient developed angioedema secondary to the malt extract in the diabetic chocolate. Food products also often contain non-declared ingredients that can cause severe allergic reactions. Angioedema is a known but uncommon adverse effect of ACEIs, with an incidence of 0.7%. The majority of the cases occur within the first 6 months of initiation of the drug. Hospitalizations rarely happen and are generally short [7].

Airway compromise is extremely rare; Slater *et al.* have reported four cases among 1.2 million enalapril users [8]. Massive prolonged angioedema has been reported with combination of ACEIs and estramustine phosphate, which is used in prostate cancer and can cause angioedema [9]. A case of hereditary angioedema first seen at the age 90 in a female elderly patient who is taking ACEIs has been reported [10]. To our knowledge, our case is the oldest age reported for presentation of angioedema. During angiotensin converting enzyme inhibition other factors may more easily trigger this specific reaction. It is possible that ACEIs might have increased the local concentration of vasoactive kinin in dermis, and ingredients in the diabetic chocolate aggravated the process, leading to the development of prolonged angioedema in this patient.

Conclusion

The case presented in this report characterises an atypical course of angioedema, probably precipitated by diabetic chocolate in the patient who is a chronic ACEI user.

Physicians should be aware of the fact that chronic users of ACEIs might be at risk of life-threatening and long periods of angioedema in case of exposure to further precipitating agents.

Key points

- Allergic angioedema can occur with extremes of age.
 - Common causes of allergic angioedema in the elderly are foods, medications, radio contrast materials and insect bites.
 - Atypical course of angioedema is possible in the elderly.
-

Conflict of interest

None

References

1. Bowen T, Cicardi M, Farkas H *et al.* Canadian 2003 international consensus algorithm for the diagnosis, therapy, and management of hereditary angioedema. *J Allergy Clin Immunol* 2004; 114: 629–37.
2. Kaplan AP, Greaves MW. Angioedema. *J Am Acad Dermatol* 2005; 53: 373–8.
3. Unsel M, Sin AZ, Ardeniz O *et al.* New onset egg allergy in an adult. *J Investig Allergol Clin Immunol* 2007; 17: 55–8.
4. Thomas K. Epidemiology of food allergy: what is new? A critical appraisal of recent population- based studies. *Curr Opin Allergy Clin Immunol* 2007; 7: 259–63.
5. Bakos N, Scholl I, Szalai K *et al.* Risk assessment in elderly for sensitization to food and respiratory allergens. *Immunol Lett* 2006; 107: 15–21.
6. Wuthrich B. Acute recurring Quincke edema in allergy to malt extract. *Schweiz Med Wochenschr* 1984; 114: 269–71.
7. Kostis JB, Kim HJ, Rusnak J *et al.* Incidence and characteristics of angioedema associated with enalapril. *Arch Intern Med* 2005; 165: 1637–42.
8. Slater EE, Merrill DD, Guess HA *et al.* Clinical profile of angioedema associated with angiotensin converting enzyme inhibition. *JAMA* 1988; 260: 967–70.
9. Kamata Y, Iwamoto M, Kamimura T *et al.* Repeated massive tongue swelling due to the combined use of estramustine phosphate and angiotensin-converting enzyme inhibitor. *J Investig Allergol Clin Immunol* 2006; 16: 388–90.
10. Berkun Y, Shalit M. Hereditary angioedema first apparent in the ninth decade during treatment with ACE inhibitor. *Ann Allergy Asthma Immunol* 2001; 87: 138–9.

Received 8 June 2007; accepted in revised form 11 December 2007