



Honey Allergy, First Documentation in Iraq – A Case Report

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Abstract

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BACKGROUND: Honey is one of the honeybee products that are considered the main food in many meals and has a vital role in the treatment of a lot of medical problems. However, it can be considered a source of problems for human beings around the world. Although cases of honey anaphylaxis are very rare, they are very dangerous and may be life-threatening.

CASE REPORT: In Iraq, we investigated and documented one case of honey allergy using a skin prick-prick test. A patient with a honey allergy has symptoms ranging from mild-to-severe. Medical centers have no background on this type of allergy, so it is important to explain this case to prevent misdiagnosis.

CONCLUSION: Honey anaphylaxis is rare but dangerous and may be life-threatening. The symptoms vary from mild-to-severe, and they appear after just 15 min of honey intake. The major problem associated with the current case is misdiagnosis and the patient's leaving the medical center without identifying the causes. Therefore, it is so important to ensure that medical staff have a lot of information about food allergies, especially honey allergies.

Introduction

Honey is one food that is widely consumed around the world. There are many types of honey depending on the type of floral source, and they are different in color, taste, and protein content. About 5500 years ago, honey was used by humans for many purposes [1].

Argentina, China, and Mexico are major countries for honey production, Germany is the largest exporter to Europe, followed by Hungary, then Spain [2]. A lot of studies explain the benefits of honey, especially in the medical field. Honey has many biological activities such as anti-diabetic [3] anti-inflammatory, antioxidant respiratory, and gastrointestinal [1], cardiovascular and nervous system protective effect [4], and antibacterial properties [5]. However, with all these benefits, some cases are diagnosed with honey allergy that can cause symptoms ranging from mild-to-severe life-threatening condition such as anaphylaxis and even death [6].

The number of confirmed cases around the world is restricted. Karakaya and Kalyoncu, in 1999, documented five cases in the hospital in Sihhiye, Ankara, and Turkey. In Japan, one case of honey allergy was diagnosed in 2008 [7], [8]. Twenty-two patients were diagnosed in Bern, Switzerland, in 1991, with allergies

to honey components [9]. In Hospital Sainte-Marguerite, Marseille, France, there was a confirmed case of honey allergy in a man aged 50 years old who developed an anaphylactic reaction a few minutes after ingestion of sunflower honey [10]. In Vienna and Bad Vöslau, Austria, 23 patients were diagnosed with honey allergy [11]. In 2006, Fuiano *et al.* in San Severo, Italy, diagnosed a 19-year-old female with honey anaphylaxis [12]. A study conducted in Switzerland showed that there were 22 patients with honey sensitivity (17 women and 5 men) with a mean age of 44 years [9]. A more recent study conducted in Italy has documented a case of honey anaphylaxis in a child (age below 6 years). The child suffered from many symptoms after 30 min of honey ingestion, and the results of all routine laboratory tests were normal. After the patient follow-up for 2 weeks, a prick-by-prick test for honey gave a positive result [13]. All these cases were diagnosed based on the Skin Prick Test (SPT).

Case Report

First, written consent was obtained from the patient to participate in the current study.

We have documented a case report associated with honey allergy in a 35-year-old male who lives in Diyala province in Iraq. He was suffering from many symptoms after about 15 min of honey consumption (local honey product), ranging from simple ones such as abdominal pain, skin irritation, stomach cramps, and discomfort, to severe ones such as vomiting, watery diarrhea, dizziness, and fainting. Sometimes, it self-solves after approximately 4 h, while, other times, there is a need to transfer the person to a hospital to give intravenous fluid to treat dehydration. The history of the person reveals that he has no chronic medical problems such as hypertension, cardiovascular diseases, diabetes mellitus, or irritable bowel syndrome. Our patient has no history of honey bee sting anaphylaxis. After transfer to the hospital, laboratory tests (RBS, pancreatic amylase, GPT, GGT, GOT, GUE, GSE, CBC, CRP, ESR, and other routine tests) were done and did not show any abnormal results. He visited the hospital about 6 times in the past year. A 2-month follow-up was conducted, with a record of all the details about his lifestyle and type of meals. One day, these symptoms appeared after breakfast. I could take simple evidence that these symptoms are associated with honey intake, although the breakfast meal has honey, cheese, and bread, except for honey, the other components were taken daily. Certain tests were recommended to determine if a person has certain food allergy. The SPT (prick-to-prick) is the most sensitive test to diagnose anaphylaxis to honey [2], [13].

Therefore, in the current report, we depend on SPT to confirm the current case. Positive and negative controls were included to ensure the accuracy of the result, as shown in Figure 1a-d. As mentioned in a previous report [13], the positive control was histamine, while the negative control was normal saline, as shown in Figure 1d and a, respectively. The results appear after 15 min of injection and are considered positive when three wheals of 3 mm or more appear. The honey SPT gave positive results as shown in Figure 1b and c. The patient does not take any medicine during the

time of follow-up (2 months) and this prevents any misinterpretation of results.

Discussion

To the best of our knowledge, the current report is the first to document honey anaphylaxis in Diyala Province and generally in Iraq. The major problem with this issue is that medical staff has no idea about the current case, limitations of information about this case lead to misdiagnosis and honey resistance. As occurred with a case included in the current report, when entered into the emergency department of Al-Muqadadyia Hospital (local hospital) and was diagnosed as IBD, the treatment was restricted to IV normal saline (to replenish water lost through vomiting and diarrhea), paracetamol ampul (for fever), and plasil injection to avoid more vomiting. Hence, the aims of this case report are first to document a case with honey allergy, and the second matter is an attempt to inform the medical staff to pay attention to the patient's case history. Anaphylaxis is a life-threatening reaction resulting from many causes. Therefore, it is so important to identify all causes to prevent recurrence. Although it is so rare, honey is one of these causes. Pollen is a component of honey and is responsible for honey allergy. Immunoblotting studies [11], [13] confirmed pollen's role as an allergen, and the amount of pollen in honey varies depending on many factors, including location and season [14]. However, in fact, these factors are not very important due to the properties of honey in storage for a long time across various seasons. Honey allergy is more commonly associated with pollen allergy, which explains why honey allergy is limited to honey of natural products (no industrial processing). Commercial honey is heavily processed through pasteurization and filtration. This processing leads to the removal of most of the pollen. With time, increased honey consumption, especially for medical purposes, and an increase in the numbers of

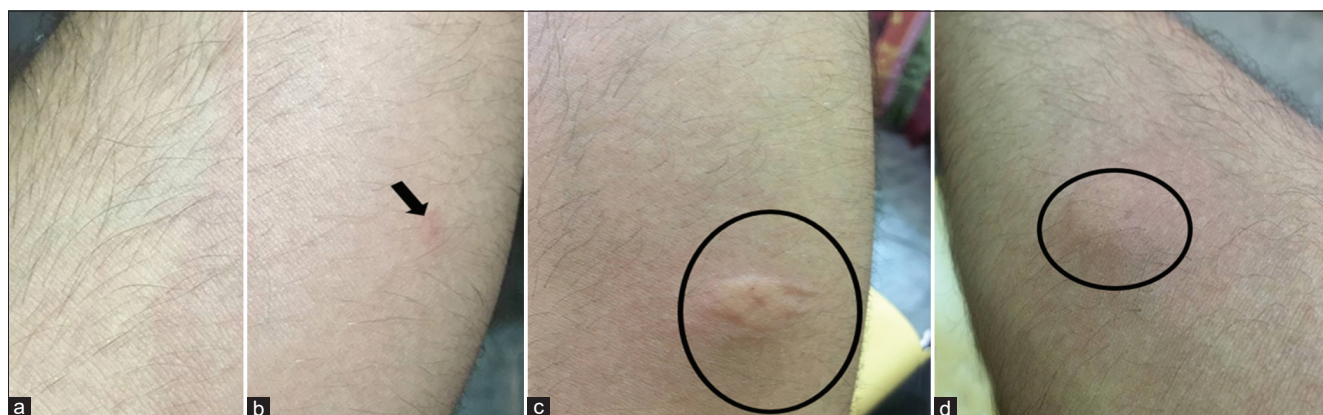


Figure 1: Result of honey skin prick test. (a) represents result of negative control (normal saline prick) with no reaction after 15 min. (b)-represent result of sample (honey) prick and shown positive reaction after 15 min as pointed part. (c) represents positive reaction as appears inside black cycle(after 25 min). (d) represent positive control (histamine prick) after 15 min as appears inside black circle

patients with a diagnosis of honey allergy [9], [11], [13] and this explains why our patient did not have any symptoms when he was eating commercial honey.

Conclusion

Honey anaphylaxis is rare but dangerous and may be life-threatening. The symptoms vary from mild-to-severe, and they appear after just 15 min of honey intake. The major problem associated with the current case is misdiagnosis and the patient's leaving the medical center without identifying the causes. Therefore, it is so important to ensure that medical staff have a lot of information about food allergies, especially honey allergies.

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