

CLINICAL CASES

A case of anaphylaxis due to rose pollen ingestion

G. Karakaya and A.F. Kalyoncu

Hacettepe University. School of Medicine. Dept. of Chest Diseases. Adult Allergy Unit. Ankara. Turkey.

SUMMARY

Background: Recent publications have demonstrated that in Güneykent (Turkey), a rose-cultivating area, some workers experience various allergic reactions due to contact with rose or its pollen.

Case report: A 47-year-old man, originally from Güneykent although he no longer lived there, suffered perennial rhinitis, asthma and rhinoconjunctivitis in spring related to sensitization to dust mites and various pollens, respectively. On several occasions, he had presented oral and cutaneous symptoms and angioedema due to contact with rose or intake of honey or other products. Finally, he had an anaphylactic reaction on drinking dew collected in the tulips of a rose that possibly contained rose pollen.

Methods: Specific IgE was evaluated with *Rosa rugosa* extract and was 30.3 IU (class IV). Sensitization to other pollens and to mites was also confirmed. Oral provocation test was not deemed ethical.

Conclusion: This may be the first reported case of anaphylactic reaction due to rose pollen ingestion.

Key words: Anaphylaxis. Rose pollen. Pollen intake.

RESUMEN

Antecedentes: Publicaciones recientes han demostrado que en Güneykent (Turquía), donde se cultiva la rosa, algunos trabajadores padecen reacciones alérgicas diversas en contacto con la planta o el polen de la misma.

Caso clínico: Varón de 47 años de edad natural de esa población, aunque no habitaba en ella, que padecía rinitis perenne, asma y rinoconjunctivitis en primavera relacionadas respectivamente con la sensibilización a ácaros del polvo y a diversos pólenes. En diversas ocasiones, al contacto con rosas o la ingestión de miel u otros productos, había tenido síntomas bucales, cutáneos y angiodema. Finalmente tuvo una reacción anafiláctica al ingerir el líquido procedente de rosas humedecidas por el rocío que posiblemente contenía polen de la flor.

Métodos: Se valoró IgE específica con extracto de *Rosa rugosa*, que fue de 30,3 IU (clase IV) además de confirmarse la sensibilización a otros pólenes y ácaros. No se consideró ético realizar prueba de provocación oral.

Conclusión: Este puede ser el primer caso de reacción anafiláctica debida a la ingestión de polen de rosa.

Palabras clave: Anafilaxia. Polen de rosa. Ingestión de polen.

Correspondence:

Gül Karakaya, M.D.
Hacettepe University, School of Medicine,
Dept of Chest Diseases, Adult Allergy Unit
06100 Sıhhiye Ankara. Turkey
Phone: + 90 312 3051531
Fax: + 90 312 3100809
E-mail: gkarakay@hacettepe.edu.tr

INTRODUCTION

Turkey is one of the four countries where rose is cultivated in big amounts for commercial purpose in the province of Isparta in a region called "Lakes' Region". Oil, juice and jam is produced from rose. *Rosa domescana* is the main type of rose raised in this region of Turkey. We are presenting a case of rose allergy which

was determined during the field survey of ours to a village called Güneykent in this region¹. To our knowledge this is the first case of anaphylaxis due to rose allergy in the medical literature. There are some historical notes and surveys on rose allergy where nasal and respiratory symptoms have been reported previously. A 15th century Roman Cardinal, Olivieri Caraffa had posted guards outside his palace to send away the visitors "ill-advised enough" to appear with a bunch of roses, which had caused him to feel unwell². However, Leonardo Botallo from University of Pavia was the first medical man who made a clear description of "rose-fever" in a patient having an itchy nose, sneezing and headache due to roses³. Rose sensitivity (*Rosa multiflora*) was determined in 27.6 % of 614 respiratory allergic patients by skin prick test in the east Mediterranean region of Turkey in 1996⁴. Occupational and environmental allergy to rose was reported in people living and/or collecting rose in the "Lakes' Region" of Turkey in two papers recently^{1,5}. Rose pollen has appeared to be an allergen affecting the airways in general in the survey from the Mediterranean region⁴, however in two recent epidemiological surveys it seems to be mainly affecting the upper airways^{1,5}.

CASE

A 47-year-old male driver working in public transportation, has been living in Isparta-Güneykent, localized in the rose raising region in Turkey, since he was born. He had complaints compatible with perennial rhinitis (PR) for 20 years, in addition to seasonal rhinoconjunctivitis (SR) and asthmatic symptoms in spring time. He is an ex-smoker due to his illness, who had smoked 10 pack years of cigarettes between the ages of 7 and 31 years. He has been having itchy rashes on his hands in the springs of the last five years after touching various flowers and plants including rose. He has had itching and swelling in his mouth, in addition to difficulty in swallowing after eating honey some years ago and he has never eaten honey from then on. In addition to acute, widespread hives all over his body, he has had angioedema on his face, chest tightness and symptoms similar but much more severe than the ones he had experienced with honey ingestion in 30 minutes after drinking the dew collected in the tulips of a rose in a spring morning two years ago. Although it seems to be a strange habit, he had used to drink this fluid, which accumulates in rose flower due to dew in the mornings, without any problem for a long time until he had had anaphylaxis. He does not have any problems when he touches rose oil or ingests food containing rose juice. The patient was examined during our sur-

vey visit to the village on March 31st 2000 not having any seasonal complaints yet since it was just the beginning of the pollen season.

His physical examination revealed normal findings. Pulmonary function test result was as follows: FVC = (3.57 L) 104 %, FEV1 = (2.95 L) 100 %, FEV1/FVC = (%82) %79 and PEF = (461 L) 97 %, of predicted. The skin prick test results performed with common aeroallergens showed sensitivity to *Phleum pratense*, *Artemisia vulgaris*, *Parietaria officinalis* and *Dermatophagoides pteronyssinus*. The total serum IgE level was 858 IU/L. The specific IgE levels for *Rosa rugosa* and *Artemisia vulgaris* were 30.3 IU (class IV) and 1.32 IU (class II), respectively (Allergopharma, Germany). The patient's PR is associated with mite allergy, but SR and pollen asthma are due to his multipollen sensitivity. Either the honey itself and/or the pollen content of the honey had lead to oral allergy in addition to localized angioedema of the lips. The ingestion of the dew collected in the rose flower has caused anaphylaxis, which seems to be due to extraction of rose pollens into this fluid.

DISCUSSION

The patient has been living in this village where rose cultivation is established, since he was born and he never worked in rose cultivation. He is atopic having perennial and seasonal rhinitis and pollen asthma in addition to contact dermatitis appearing also in the spring. Although he had had only oral allergy after honey ingestion, he has had anaphylaxis after ingesting the dew containing rose pollens. We have previously reported that honey allergy was quite a rare condition which had appeared in seven of the 3810 first referrals (0.2 %) to our allergy clinic between 1991-1998^{6,7}. Among these first referrals 448 had had seasonal rhinoconjunctivitis of which three had been honey allergic, in other words the frequency of honey allergy in these patients was 0.7 %, showing a possible relation between SR and honey allergy. The current patient's sensitivity to common pollens and rose (*Rosa rugosa*) is demonstrated by skin prick test and RAST, respectively. Due to some technical problems RAST was performed with *Rosa rugosa* instead of *Rosa domescana*. We did not perform any provocation tests with rose pollen since it would not be ethical in this patient. However, obtaining a RAST result of class IV in addition to history of anaphylaxis after ingesting the dew collected in the rose flower can apparently be accepted as a strong indicator of anaphylaxis due to rose allergy, which seems to be the first case report of anaphyla-

xis due to rose pollen ingestion in the medical literature.

ACKNOWLEDGMENT

We would like to acknowledge the kind assistance of Allergopharma (Germany) for testing IgE against *Rosa rugosa*.

REFERENCES

1. Demir AU, Karakaya G, Kalyoncu AF. Allergy symptoms and IgE immune response to rose: an occupational and an environmental disease *Allergy* 2002;57:936-9.
2. Harper DS. No roses by request. In, Avenberg KM, editor. Footnotes on Allergy. Uppsala: Upplands Grafiska AB; 1980. p. 50-1.
3. Harper DS. Botallo and rose-fever. In, Avenberg KM, editor. Footnotes on Allergy. Uppsala: Upplands Grafiska AB; 1980. P.50.
4. Güneser S, Atıcı A, Cengizler I, Alparslan N. Inhalant allergens: as a cause of respiratory allergy in east Mediterranean area, Turkey. *Allergol et Immunopathol* 1996;24(3):116-9.
5. Ünlü M, Şahin Ü, Yarıktas M, et al. Allergic rhinitis in *Rosa domescana* cultivators: a novel type of occupational allergy? *Asian Pac J Allergy Immunol* 2001;19(4):231-5.
6. Karakaya G, Kalyoncu AF. Honey allergy in adult allergy practice. *Allergol et Immunopathol* 1999;27:271-2.
7. Kalyoncu AF. Honey allergy and rhinitis in Ankara, Turkey. *Allergy* 1997;52:876-7.