

Fixed Food Eruption Caused by Cashew Nut

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ABSTRACT

Background: The diagnosis of fixed 'drug' eruption is not difficult for dermatologists, but it is difficult to identify the causative agent when the patient denies ingestion of any drugs. There have been some reported cases of fixed 'food' eruption.

Case Summary: A 71-year-old woman experienced repeated erythema and tense bulla with a burning sensation and pruritus on the right ankle. The eruption remitted leaving pigmentation. The patient denied previous ingestion of any drug. We suspected cashew nut as the causative agent. Oral challenge and patch tests with cashew nut were positive.

Discussion: A fixed eruption without any antecedent drug ingestion should alert us to think of food as a causative agent.

KEY WORDS

cashew nut, FFE, fixed eruption, food, patch test

INTRODUCTION

The term fixed food eruption (FFE) was introduced by Kelso in 1996 to describe an eruption identical to a fixed drug eruption, but occurring after the consumption of a particular food rather than a drug.¹ Ingestion of lentil, strawberry, asparagus, tonic water, lactose, and cheese crisps have been reported to induce FFE.¹⁻⁹

It is known that topical contact with cashew nut-shell liquid induces contact dermatitis.¹⁰ Hamilton *et al.* reported a case of systemic contact dermatitis due to raw cashew nuts.¹¹ Furthermore, cashew nut allergy is an evolving clinical problem. Recently an increasing number of children with cashew allergy have presented and the risk of anaphylaxis in these children is at least equivalent to that of peanuts.¹² The increase in cashew allergy has become an important issue because it affects young children who may have a reaction without exposure to cashews.¹³

Here we report a new case of FFE caused by the ingestion of cashew nut.



Fig. 1 Tense bulla and some dark brown pigmented lesions on the right ankle.

CLINICAL SUMMARY

A 71-year-old woman presented with a tense bulla, some dark brown pigmented lesions, a burning sensation and pruritus on the right ankle (Fig. 1). The

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eruption remitted in 2 weeks after topical corticosteroid therapy, leaving postinflammatory pigmentation. She had reported a similar eruption one year before in the same location. Although fixed drug eruption

was suspected, the patient denied previous ingestion of any drug except her prescribed addiction medicine. After that, recurrent attacks took place in the same lesions independently of the oral medications. We asked the patient in detail about her eating habits. Her responses made us suspect that the lesions were produced after ingestion of cashew nuts. A patch test with cashew nut (30% in petrolatum) was



Fig. 2 Patch test with cashew nut (30% in petrolatum) on the previously involved skin was positive and that on the normal skin was negative.



Fig. 3 An oral challenge of cashew nuts provoked a similar lesion on her right ankle 24 hours later.

Table 1 List of published cases of fixed food eruption

Case	Sex	Age	Food	Oral challenge test	Patch test on affected skin	Patch test on normal skin	Prick test	Author
1	F	71	Cashew nut	+	+	—	ND	Present case
2	M	30	Cashew nut	ND	ND	ND	ND	Minami 1964
3	F	45	Lentil	+	—	ND	—	Yanguas 1998
4	F	30	Lentil	+	ND	ND	—	Yanguas 1998
5	F	66	Strawberry	+	ND	—	—	Kelso 1996
6	F	50	Asparagus	ND	+	—	—	Voltz 2005
7	F	23	Tonic water (Quinine)	+	—	—	ND	Asero 2003
8	M	33	Tonic water (Quinine)	+	+	—	ND	Kubota 2003
9	M	37	Tonic water (Quinine)	+	+	—	ND	Muso 2007
10	F	24	Tonic water (Quinine)	+	+	—	ND	Muso 2007
11	F	54	Lactose	+	ND	—	ND	Tsuruta 2005
12	M	5	Cheese crisps	ND	ND	ND	ND	Hatzis 1992
13	F	11	Cheese crisps (Tartrazine)	+	ND	ND	ND	Orchard 1997
14	F	41	Squid	ND	—	—	—	Tsunoda 2001
15	F	68	Shrimp	+	—	—	ND	Kanetomo 1993

performed one month after the eruption remitted. The test was positive on previously involved skin but normal skin was negative. (Fig. 2). The patch tests with almond and addiction medicine such as analgesic agents, antihyperlipidemic agents and vitamin supplements on her normal skin were negative. Furthermore, 2 months after the patch test, an oral challenge of cashew nuts provoked a similar lesion on her right ankle 24 hours later (Fig. 3). She was given a diagnosis of fixed food eruption caused by cashew nuts and we advised her to avoid them. However, she developed similar lesions after eating almonds, peanuts and pignolia nuts. We could not obtain informed consent from the patient for further examinations, and therefore patch and provocation tests were not performed with these nuts. We obtained written informed consent from the patient to publish this report.

PATHOLOGICAL FINDINGS

Skin biopsy was not performed because we could not obtain informed consent from the patient.

DISCUSSION

We describe here the first case of fixed food eruption caused by cashew nuts described in the English literature. To our knowledge, 14 cases with fixed food eruption have been reported in the literature (Table 1).^{1-9,14-16} In 5 of 9 cases, patch tests on affected skin were positive and that on normal skin and prick test seemed less reliable. Two patients had a family history of fixed eruption and therefore a genetic predisposition seems to be involved.^{7,8}

The present patient seemed to have cross-reactivity among four nuts (cashew nuts, almonds, peanuts and pignolia nuts). The major cashew nut allergens responsible for the IgE-binding reactivity of sensitized patients have been identified as a vicilin-like protein (Ana o 1), a legumin-like protein (Ana o 2) and a 2S albumin protein (Ana o 3).¹⁷⁻¹⁹ Some of the IgE-binding cross-reactivities were observed among tree nuts (walnut, pecan, hazelnut, cashew, Brazil nut, pistachio, and almond) and peanut.^{20,21} In our case, some shared antigen might exist among cashew nuts, almonds, peanuts and pignolia nuts.

A fixed eruption without any antecedent drug ingestion should alert us to think of food as a causative agent.

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