



CASE STUDY

IRRITANT CONTACT DERMATITIS TO CASHEWNUT SHELL

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ABSTRACT

Occupational dermatoses contribute to a significant portion of work-related diseases. Irritant contact dermatitis does not involve immunological factors, but results when repair capacity of skin is exhausted or when the penetration of chemicals excites an inflammatory response. Irritants affect everyone, though individual susceptibility varies greatly with regard to development. Plants in the *Anacardiaceae* family, which includes cashewnut tree, is a frequent cause of contact dermatitis worldwide. Recognition of clinical patterns and geographic variations in occupational skin diseases helps to further strengthen future research in these areas, as well as improving their management. We report a case of acute irritant contact dermatitis following contact with cashewnut shell.

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INTRODUCTION

Irritant contact dermatitis is a non-immunologic local inflammatory reaction characterised by erythema, edema or corrosion following single or repeated applications of a substance to identical cutaneous site. Any physical or chemical agent that is capable of producing cell damage if applied for sufficient time and in sufficient concentration can lead to irritant dermatitis. Acute irritant contact dermatitis is produced by strong irritants, usually following a single exposure. It is a common occupational hazard that often results from poor work habits, but may also be due to accidental exposure. The clinical spectrum may range from mild transient erythema to florid dermatitis with vesiculation. In severe cases, bulla formation and even tissue necrosis may occur.

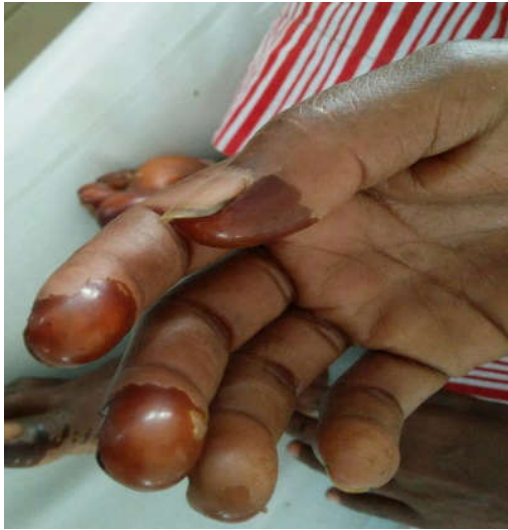
Case report

A 45 years old female, with no previous known allergy, presented with reddish brown discolouration and peeling of skin over tip of the fingers and toes, also over dorsal aspect of foot and soles, associated with mild itching, since 10 days. She was recently employed in a cashewnut processing factory and developed these symptoms only two days later. History of similar symptoms in co-workers was noted. On physical

examination, patient was afebrile and systemic examination unremarkable. Dark brownish black pigmentation and exfoliation was present over dorsal and palmar aspect of hands including the fingers and feet. Blood investigations were within normal limits. Based on the history and clinical findings, she was diagnosed as to have developed irritant contact dermatitis to cashewnut shell. She was treated symptomatically with topical steroids, antihistamines and advised to reduce exposure by use of protective clothing and gloves.



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DISCUSSION

The cashewnut tree grows in all parts of tropics at altitudes of less than 2500 feet. The tree and raw cashewnut products are found in greater abundance in major commercial exporting countries of India, Brazil, Mozambique, Tanzania, Kenya and Indonesia. The raw cashewnut contains sticky brown resinous material (highly irritating oil) between the two layers of its

shell. The cashew oil contains three main allergens- Phenols (Anacardic acid & Cardanol) and resorcinol (Cardol). They are chemically related to *Urushiol (Rhus antigen)* and can trigger contact dermatitis. Occupational dermatoses have been reported in employees of cashew nut industry exposed to the cashew nut shell oil. They had a characteristic cauterization type of reaction manifesting as brownish-black, thickened sheets of dead skin covering the dorsal as well as palmar aspect of hands including the fingers and feet. Smaller but similar lesions were also seen on parts of the forearm, abdomen, neck and face which were not covered with clothes. The other changes included loss of dermatoglyphic patterns, maceration of the hands, small pits on the finger tips and pitted keratolysis seen in some cases only. Patch testing is gold standard for diagnosis. Treatment options include frequent wet compresses followed by application of antibacterial cream or topical corticosteroids. If there is deep tissue destruction or signs of bacterial infection, systemic corticosteroids and antimicrobial agents should be administered. Cashew huskers have dermatitis with an impact on daily life. Working conditions and security of employment, hygiene attitudes and anacardic acid were identified as causes. It is imperious to take measures in collaboration with occupational physicians to ensure health at work and improve the quality of life.

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