

MARKING NUT DERMATITIS

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Two patients aged 12 and 16 years, developed severe dermatitis on their face and hands with oedema and hyperpigmentation following contact with the marking nut. Patch tests with the marking nut produced a bulla with hyperpigmentation in both the patients, as also in all the 5 normal unexposed controls. Marking nut is considered to be a strong irritant.

Key words : Marking nut, Pigmentation, Dermatitis.

The plant *Semicarpus anacardium* (marking nut tree) is found in sub-Himalayan tract from the Beas eastwards, Assam, Gujarat, Madhya Pradesh and deciduous forests of Tamil Nadu. It is a medium sized tree which has round, abovate leaves and flowers in yellowish green terminal panicles. It belongs to the family *Anacardiaceae*, the other important members of the family being poison ivy, poison oak, mango, cashew nut.

Marking nut (Bhilawa) is the fruit of the plant. It weighs 1.6 to 3.6 gm and has a hard, black rind within which is a thick pericarp. The pure black acrid juice of the nut is universally employed to mark all sorts of cotton clothes.¹ The nut is also used to procure abortion and is given as a vermifuge. Gum from the bark of the plant has been used in scrofulous, venereal and leprous affections and in nervous debility. Ash of the plant, in combination with other drugs is used locally in snake bite and scorpion sting.² The juice of marking nut is also used to produce factitial lesions.³ The juice has long been employed by the natives externally to treat rheumatic pains, aches and sprains and for the treatment of wounds and infections of animals.

Livingwood et al,⁴ for the first time described contact dermatitis resulting from marking of clothes with Indian ink and coined the term dhobic mark dermatitis. Behl⁵ described

two cases, one an American tourist who developed dermatitis from marking ink on his clothing, and another case who used marking nut powder to dress the wound of his cow and got superficial inflammatory oedema, uniform vesicles and swelling of the eyelids. Bedi⁶ described two cases of contact dermatitis with a generalised acute allergic reaction due to local application of bhilawa used for the treatment of alopecia areata of beard and scalp. Merrill⁷ opined that since cashew nut, mango, bhilawa (marking nut), poison ivy and poison oak, all belong to the same family, cross sensitivity between them may occur. We observed two cases of dermatitis due to the marking nut.

Case Reports

Case 1

A 12-year-old girl developed severe itching and oedema over the hands and forearms, and jet black pigmentation on the fingers. There was also marked oedema on the face especially around the eyes. She had applied a paste from bhilawa fruit on a wound on the back of a cow a few days prior to the complaint. Treatment with an oral antihistamine-corticosteroid combination led to complete recovery. Patch test done, after remission, using marking ink prepared from the marking nut was positive.

Case 2

A 16-year-old boy noticed oedema over the eyelids in the morning after accidentally handling marking nuts. In about an hour, he developed

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Fig. 1. Blistering, swelling and jet-black pigmentation on the hands and swelling on the face.

oedema all over the face along with a vesicular eruption with erythema on the neck, trunk and upper limbs with marked irritation. In the afternoon, he developed high grade fever. He had black pigmentation on both hands which disappeared slowly over ten days. This patient also responded well to the same treatment and showed a positive patch test done subsequently with the powder of the marking nut.

To elicit further information regarding the antigenic potential of bhilawa nut, patch tests undertaken in five healthy unexposed individuals consistently showed black bullae on an oedematous and erythematous skin.

Comments

Pillay and Siddiqui⁸ isolated the following constituents from the juice of the pericarp of marking nut : (1) a monohydroxyphenol named semecarpol (0.1 per cent of the extract), (2) an o-dihydroxy compound named bhilawanol (46 per cent of the juice) and (3) a tarry non-volatile corrosive residue (18 per cent of the nut), in addition to fatty oils, tannic acid and other acids. The dermatitis-producing principle of the oleoresin in the family *Anacardiaceae* is

related to the presence of pentadecylcatechols (PDC).⁹ Some investigators, however, suggest that the individual may be sensitive to another component of the oleoresin.

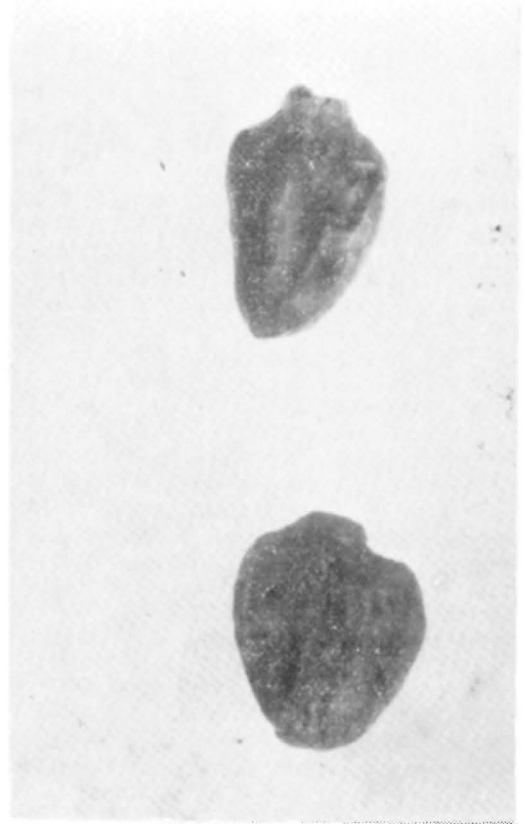


Fig. 2. Marking nut.

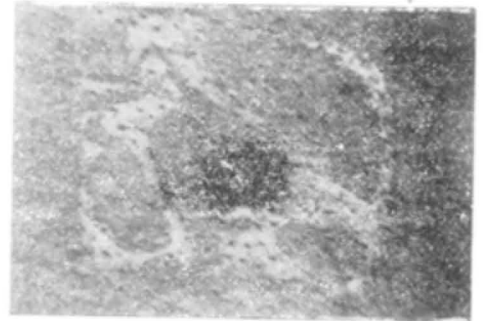


Fig. 3. A positive patch test with marking ink—jet-black coloured bulla on an erythematous skin.

Since black ink from the nut is a potent sensitizer and is unaffected by boiling, it can produce repeated attacks of allergic contact dermatitis.¹⁰ In experimentally induced lesions on the dorsum of the hand in a sensitive patient,¹¹ severe irritation and blistering occurred after an interval of two days. The itching was very intense. The hand took about a fortnight to heal and a black stain remained on the hand for some weeks.

In both our cases, contact with the nut occurred on the hands leading to black staining, but the reaction was generalised indicating either a spread to the other areas by contaminated fingers, or percutaneous absorption and endogenous allergy. The type of patch test reactions in the patients as well as all the 5 controls suggest that the marking nut is a strong irritant.

In cases of acute dermatitis, especially if it occurs on the exposed parts and involves the face, it is important to elicit history of contact with the marking ink or nut. Since cross sensitivity can occur between other members

of the plant family, the patient should be cautioned against contact with those plants as well.

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