

An Elderly Male with Asymptomatic Black Staining of Hands

Editor,

An elderly male with type II diabetes mellitus, on treatment for postherpetic neuralgia, was incidentally noted to have dark brown to black colored hyperpigmentation of his hands for last 1 month. The hyperpigmentation was asymptomatic, persistent, and was most pronounced on the palmar aspect and extended till the mid-palms. All fingers were involved with thumbs, index and middle fingers being maximally affected [Figure 1]. He denied history of smoking, Raynaud's phenomenon, and any sensory or motor disturbances. However, the patient stated that he was involved with walnut husking during the months of August–September and attributed the development of hyperpigmentation to the same. He had been repeatedly having this hyperpigmentation in every husking season for past many years. Notably, other members of the family and neighbours also developed this asymptomatic hyperpigmentation while husking walnuts that usually lasted for 3–4 months. We reassured the patient and advised him to use protective gloves when he performed husking the next time. He has not followed-up after the last visit.

Few prior reports have described contact dermatitis (both irritant and allergic contact dermatitis) with walnut hulls.^[1-3] To the best of our understanding, this peculiar hyperpigmentation and staining of hands in absence of dermatitis, after exposure to walnuts has not been reported prior in dermatology literature. This usually happens while procuring the woody walnuts from the surrounding green hull. The process is called husking/hulling and involves considerable exposure to juglone and other phenols contained in walnut husks, leaves, and stem.

Juglone is the major phenol derivative of the walnut tree (*Juglans regia*).

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: reprints@medknow.com

Interestingly, the chemical structure of juglone is almost identical to lawsone, the chief phenol derivative of the henna plant (*Lawsonia intermis*).^[4] Both are hydroxynaphthoquinone compounds, and when they come in contact with epidermis, their C=O bonds undergo chemical conjugation with amide groups of keratins to form C=N bonds. In presence of atmospheric oxygen, both lawsone and juglone oxidize to result in the colouring of hair and skin, orange-red with henna and black with walnuts, respectively. Of all the components of a walnut plant, it is the green hull surrounding the drupe/woody walnut that contains the maximum amount of juglone. The dried up walnut meat and the wooden shell do not have appreciable juglone content.^[5]

The history of exposure to walnuts, and similar complaints in family members, ruled out other differentials, and need for other investigations. No chemical was used by the subject and his family during the process of husking. In absence of biopsy and patch-testing, we cannot rule out pigmented contact dermatitis, but that typically results in dermal hyperpigmentation, which takes years to subside. The hyperpigmentation in the index patient recurred every year and subsided after a period of 3–4 months, which is odd for pigmented contact dermatitis.

To conclude, walnut husking is common in certain parts of the world, and the index case highlights this uncommonly recognized cause for asymptomatic hyperpigmentation and staining of palms. Its accurate identification shall help to decrease the anxiety of patients and shall minimize unnecessary investigations. However, the factors that determine the occurrence of contact dermatitis or hyperpigmentation or both after juglone exposure need to be studied. Also, the ability of juglone in

How to cite this article: Bishnoi A, Vinay K, Kumaran SM. An elderly male with asymptomatic black staining of hands. *Indian Dermatol Online J* 2020;11:103-4.

Received: January, 2019. **Revised:** April, 2019.

Accepted: May, 2019. **Published:** January, 2020.

Anuradha Bishnoi,
Keshavamurthy
Vinay,
Sendhil M. Kumaran

Department of Dermatology,
Venereology and Leprology,
Postgraduate Institute of
Medical Education and
Research, Chandigarh, India

Address for correspondence:

Dr. Keshavamurthy Vinay,
Department of Dermatology,
Venereology, and
Leprology, Postgraduate
Institute of Medical
Education and Research,
Chandigarh - 160 012, India.
E-mail: vinay.keshavamurthy@
gmail.com

Access this article online

Website: www.idoj.in

DOI: 10.4103/idoj.IDOJ_4_19

Quick Response Code:





Figure 1: Dark brown to black coloured hyperpigmentation of hands most pronounced on the palmar aspect. The hyperpigmentation extended till the mid-palms. All fingers were involved with thumbs, index, and middle fingers being maximally affected

causing dark brown to blackish discoloration, which lasts relatively longer (3–4 months) than that of henna makes

it an interesting proposition to further explore it as an alternative hair colour option for people who are allergic to henna.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

References

1. Neri I, Bianchi F, Giacomini F, Patrizi A. Acute irritant contact dermatitis due to *Juglans regia*. *Contact Dermatitis* 2006;55:62-3
2. Foti C, Romita P, Angelini G, Bonamonte D. Allergic contact dermatitis to walnut (*Juglans Regia*) husk. *Indian J Dermatol* 2015;60:622-3.
3. Bonamonte D, Foti C, Angelini G. Hyperpigmentation and contact dermatitis due to *Juglans regia*. *Contact Dermatitis* 2001;44:101-2.
4. Yusuf M, Shabbir M, Mohammad F. Natural colorants: Historical, processing and sustainable prospects. *Nat Products Bioprospect* 2017;7:123-45.
5. Craton DW, Williams RD. Juglone dermatitis: Allergy or irritant? *Proc Indiana Acad Sci* 1980;90:98-102.