

## Cutaneous hyperpigmentation following nonpermanent henna tattoo

To the Editor

I read with interest the article reported by Bukhari, entitled Cutaneous hyperpigmentation following nonpermanent henna tattoo,<sup>1</sup> and I would like to register few notes on it.

I appreciate the last paragraph of the report, particularly stressing on patch testing the henna candidates for all the ingredients of the commercially available henna pastes before decoration, otherwise, the public should be instructed to use pure herbal henna powder as it is seldom allergogenic.<sup>2</sup> I appreciate as well stressing on close supervision of beauty saloons regarding the type of henna used, and recommending restriction on the import of unlabeled henna products or those without a clear formula, and educating the public on their hazards. I think these notes, which unfortunately passed unnoticed at the end of the report, carry "to whom it may concern" a valuable message for public prevention, and the author should have put them prominently in the abstract and conclusion. I think, these points are more significant than discovering a new alleged side effect of henna, which still needs to be proven.

Regarding the final diagnosis at the end of each of the 3 case reports, namely permanent henna tattoo, I believe the light brown pigmentation in these cases is neither a tattoo nor permanent. This diagnosis contradicts firstly with the histopathological result of the first case, which was in favor of post inflammatory hyperpigmentation (PIH), namely, pigmentary incontinence, and absence of abnormal deposits in the dermis. Secondly, it contradicts with the author's own explanation of the pigmentation in the paragraph "discussion" where he considered PIH as the underlying etiology of cases 1 and 2. However, naturally, PIH is quite different from a permanent henna tattoo, which is an intentional insertion of dyeing matter as a foreign body in the dermis, to embed there, and offer a special relevant decorative color through the relatively transparent epidermis. In rare instances, this may occur accidentally, as in accidental tattoo.<sup>3</sup> However, the pigment in PIH is a natural melanin incontinence that is produced as a response to a preceding inflammatory process.<sup>4</sup> So; the diagnoses and the etiology should not be in dispute.

The author gave different explanations for the same phenomenon, the explanation of the third case as a real henna tattoo in the discussion needs review, virtually, he could not prove it. The third case does not differ from the first and the second,

except by the sustained duration of pigmentation (one year – versus 6 months in case one and 9 months in case 2), otherwise, it is identical in all aspects including the clinical and pathogenic. On giving it the same diagnosis as well, there was no cause to separate between them in etiology.

If it is true, it is simple. I think the 3 cases were PIH; there was a hidden irritant dermatitis, caused either by henna or by unknown additives, other than paraphenylenediamine, this might have been of mild severity and non itchy. Irritant dermatitis is usually non-itchy even if marked and overt. The degree of inflammation appears to be of less significance in determining the pigmentary response than the nature of the dermatosis.<sup>3</sup> Moreover, while the cause of the pigmentation in PIH is usually easily understood, the preceding lesions may not be so. The minimal inflammatory color changes, which might have occurred were probably overshadowed and masked by the henna dye, thus, the patients did not notice it, forgot it, being transitory or clinically imperceptible, or misdiagnosed it, thinking that it was natural as a part of the henna decoration, and did not attract their attention.<sup>3</sup> Thus after resolving, the irritant dermatitis, like any inflammatory reaction might have left PIH which was thought to be permanent henna tattoo by the author without a clear history of preceding overt dermatitis. The histopathological findings support this simple straightforward diagnosis. Why to look for sophisticated explanations such as permanent henna tattoo without real proof? Naturally, the negative history of PIH in the 3 case reports does not exclude it, as the patients may not have been exposed to such henna irritation and inflammation before.

An additional factor might have interfered here as well; the actinic reaction. As henna decoration (and the following pigmentary lesion) in all the 3 cases was located on the forearms, naturally the henna is drawn for show, and not to be hidden, and exposure of henna tinted areas to the sun may provoke actinic reaction if some of the henna paste ingredients used (unknown to us) had a photodynamic or phototoxic activity, which potentiates the pigmentogenic effect of the UV light, particularly if the photodynamic agent were applied directly on the skin<sup>5,6</sup> as in henna. In such cases, the pigmentary response may be persistent.<sup>5,6</sup> Hence, the actinic factor can not be ignored in etiology.

Finally, I think that sun protection, reassurance and time are the best remedy here, and are the best proof of diagnosis as well.

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## Reply from the Author

Firstly, I would like to thank Dr. Shelleh for the comments regarding the last paragraph in my report, which I meant to put there so it would be highlighted last in the reader's mind. When I wrote permanent henna tattoo I meant to describe the permanent staining of the skin after henna application, but I agree, technically henna does not involve the introduction of any coloring particles in the dermis. Regarding the third case in the report, the patient had a different pigment color. It was dusky red not brown, so it cannot be due to PIH. Another point, although irritant dermatitis can be non-itchy and may pass unnoticed by the patient leading to PIH, it does not explain the third case with the persistent reddish staining of the skin. Regarding actinic reaction, it is not a possibility in these cases, as women in Saudi Arabia are completely covered including the arms, excluding the actinic effect.

Thank you again for your valuable comments and I hope I answered your questions.

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## References

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## Erratum

In manuscript "Bilateral breast cancer. Incidence diagnosis and histological patterns" Saudi Medical Journal 2005; Vol. 26 (4): 612-615, the Table 1 should have appeared as follows:

Table 1 - Case presentations of patients with bilateral breast cancer (N=7).

Case	Age (years)	Menopausal status	Family history	Surgical treatment and adjuvant therapy			Histology		DFI
				Mastectomy	Wide local excision	Chemo radiotherapy	Index breast	Second breast	
1	39	Premenopausal	Positive	Index breast	Second breast	Yes	IDC	IDC	84
2	57	Postmenopausal	Negative	Both breasts*	-	Yes	IDC	ILC	11†
3	46	Premenopausal	Negative	Second breast	Index breast	Yes	IDC	IDC	23‡
4	48	Premenopausal	Positive	Index breast*	Second breast	Yes	DCIS	IDC	72
5	24	Premenopausal	Positive	Both breasts	-	Yes	DLC	IDC	29**
6	43	Premenopausal	Positive	Second breast	Index breast	Refused	IDC	IDC	67
7	81	Postmenopausal	Negative	Second breast§	Index breast	-	ILC	IDC	6††

\*metachronous breast cancer, †developed pleural effusion, ‡developed liver metastasis, \*\*patient died due to cerebral metastasis, §toilet mastectomy, ††patient died due to cachexia, bilateral pleural effusion, DFI - disease free interval in months. IDC - invasive ductal carcinoma, ILC - invasive lobular carcinoma, DCIS - ductal carcinoma in-situ, DLC - ductal/lobular carcinoma,