

## A Rare Case of Risperidone Induced Reticular Palmar Pigmentation

Dear Editor,

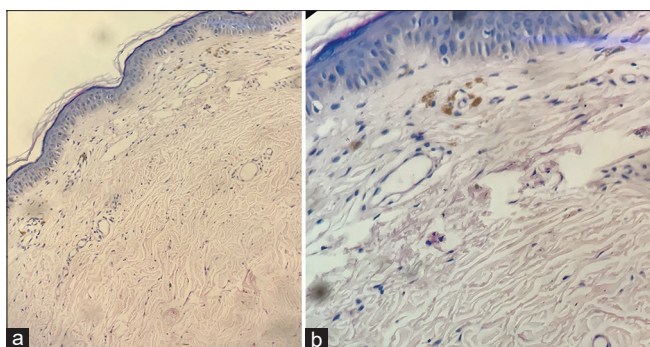
An 18-year-old female with a psychiatric diagnosis of depressive mood disorder presented to skin outpatient department with complaints of brownish-black pigmentation on the palmar aspect of both hands for 2 months. She was on tablet risperidone 2 mg once daily for the last 7 months. She had no history of any skin disorder, photosensitivity, chronic heat exposure, contact allergen exposure, or any other medical illness. Her past and family history were insignificant. On cutaneous examination, reticular patterned brownish-black hyperpigmentation was distributed symmetrically on both palms [Figure 1a-c]. There was a slight increase in pigmentation over creases of palm and proximal and distal interphalangeal joints. Hair, nails, and mucosa were normal. The complete blood count, serum ferritin, serum electrolytes, liver and kidney function test, thyroid profile, serum vitamin B12, serum cortisol were within normal limits and Venereal Disease Research Laboratory test (VDRL) was nonreactive. On histopathological examination, there was pigment incontinence and perivascular lymphocytic infiltrate in the dermis [Figure 2a and b]. The patient stopped risperidone on her own 3 weeks back and there was lightening of the pigmentation for the last 2 weeks [Figure 3]. Correlation of clinical presentation, histopathological findings, temporal

association with the drug and resolution of pigmentation on stoppage of the drug established the diagnosis of risperidone-induced reticular hyperpigmentation of palms.

In literature, 10%–20% of cases of acquired pigmentation were attributed to being caused by drug intake.<sup>[1]</sup> There are several publications of skin pigmentation with conventional antipsychotics like chlorpromazine, thioridazine however, the atypical antipsychotic that includes clozapine, olanzapine, quetiapine, risperidone, and ziprasidone are rarely known to cause hyperpigmentation.<sup>[2]</sup> Risperidone, a benzisoxazole derivative is an atypical antipsychotic. It exhibits high-affinity antagonism at 5 HT<sub>2</sub> and D<sub>2</sub> receptors and binds to alpha<sub>1</sub>, alpha<sub>2</sub> adrenergic receptors to a lesser extent.<sup>[3]</sup> It is known to cause various adverse effects but the cutaneous reaction is very rare. The cutaneous adverse effects of risperidone reported in the literature are maculopapular rash, urticaria, angioedema, photosensitivity, erythema multiforme-minor, and eczematous eruptions.<sup>[4-6]</sup> There is only one report with risperidone induced generalized pigmentation with 2 mg twice daily dosage by Bains *et al.*<sup>[4]</sup> We are reporting a case of risperidone induced localized hyperpigmentation of palms in a reticular pattern. Literature search could not reveal any similar case in our search efforts. Clinical features of drug induced pigmentation vary according



**Figure 1:** (a) Reticular patterned hyperpigmentation on the palmar aspect of both hands at presentation. (b) A closer view of the reticular patterned hyperpigmentation on right palm with biopsy site seen as a round scar on lower aspect of palm. (c) A closer view of the reticular patterned hyperpigmentation on left palm



**Figure 2:** (a) Epidermis is normal. Pigment incontinence in upper dermis and mild perivascular lymphocytic infiltrate (hematoxylin and eosin, 10×). (b) Epidermis is normal. Pigment incontinence in upper dermis and mild perivascular lymphocytic infiltrate (hematoxylin and eosin, 40×)



**Figure 3:** Gradual lightening of pigmentation on both the palms on stopping tablet risperidone

to triggering molecule with a large range of patterns and shades of blue, grey, yellow, red, and brown. The five basic mechanisms of drug-induced pigmentation include (a) stimulation of melanin synthesis (b) accumulation of medication itself as freely scattered granules within dermal macrophages, (c) synthesis of special pigments like lipofuscin (d) binding of drug and melanin to form a stable complex, (e) drug-induced damage to dermal blood vessels resulting in red blood cell damage and deposition of iron.<sup>[7]</sup>

Because of the increased usage of atypical antipsychotic drugs in clinical practice, dermatologists should be aware of such rare cutaneous side effects.

### Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not

be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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### Conflicts of interest

There are no conflicts of interest.

**Barnita Saha, Isha Gupta, Surabhi Dayal, Sonia Chhabra<sup>1</sup>**

Departments of Skin and VD and <sup>1</sup>Pathology, Pt. B.D. Sharma PGIMS, Rohtak, Haryana, India

Address for correspondence:

Dr. Barnita Saha,

84/2, Gupta Nursing Home, Near Shantmai Chowk, HUDA Complex,


Rohtak - 124 001, Haryana, India.

E-mail: drsahabarnita@gmail.com

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