



## **Erythema Dyschromicum Perstans: The Spotty Possibility – A Rare Case Report**

**M. Naga Meena Lochini <sup>a≡†</sup>, F. K. Jasima Nilofer <sup>a\*∅†</sup> and S. Mary Lilly <sup>a#†</sup>**

<sup>a</sup> Department of Pathology, Sree Balaji Medical College and Hospital, Chennai, India.

### **Authors' contributions**

*This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.*

### **Article Information**

DOI: 10.9734/JPRI/2021/v33i60B34608

### **Open Peer Review History:**

This journal follows the Advanced Open Peer Review policy. Identity of the Reviewers, Editor(s) and additional Reviewers, peer review comments, different versions of the manuscript, comments of the editors, etc are available here: <https://www.sdiarticle5.com/review-history/80408>

### **Case Study**

**Received 09 October 2021**  
**Accepted 19 December 2021**  
**Published 21 December 2021**

## **ABSTRACT**

Erythema Dyschromicum Perstans (EDP) / Ashy Dermatitis are a less common dermatological disorder with an unknown etiology. It is characterized by asymptomatic, grey, symmetric and confluent macules all over the body. Herein, we report a case of a 50 years old man who presented clinically, with diffuse, patchy pigmentation having ill-defined, erythematous borders involving bilateral arms and forearms. Histopathological examination of the lesion biopsy demonstrates vacuolar degeneration of the basal cell layer, dermal perivascular mononuclear cell infiltrate and increased epidermal melanin pigment and presence of dermal melanophages. For the present case, treatment with Clofazimine has proven to be effective.

**Keywords:** *Erythema dyschromicum perstans; ashy dermatosis; dermal melanophages; clofazimine.*

## **1. INTRODUCTION**

Erythema Dyschromicum Perstans (EDP) is a pigmentary disorder on the spectrum of acquired

macular pigmentation. It is also known as Ashy Dermatitis due to its clinical presentation. Predominantly, it is found in patients with skin phototypes III-IV [1]. The most commonly

<sup>≡</sup> Postgraduate;

<sup>∅</sup> Senior Resident;

<sup>#</sup> Professor and Head of Department;

<sup>†</sup> Dr.;

\*Corresponding author: E-mail: jasfer18.03@gmail.com;

affected sites include trunk, neck, face and upper limbs but any region of the body can be affected. Onset can occur at any age but the mean age of occurrence is usually in the second and third decade of life. Demographically, this dermatological disease occurs quiet commonly in Asian and central/south American continents. It can affect both sexes but slightly more common in women. The exact etiopathogenesis involving Ashy Dermatitis is still unknown but its association with contrast agents, infections and parasitic infestations has been widely reported.

## 2. CASE HISTORY

A 50 years old male patient with type III complexion, approached the dermatology department, in our college with a history of recent dye application over scalp hair and subsequently presenting with numerous, asymptomatic, brown-

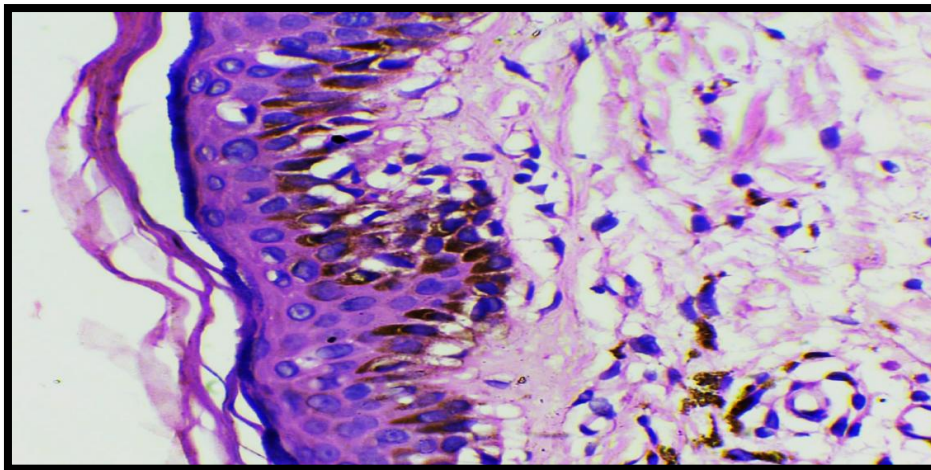
grey macules with mild erythematous borders, (Fig. 1) involving the face initially and later progressing to bilateral arms and lateral aspects of chest. He had no known family history of skin or autoimmune diseases. A four millimeter skin punch biopsy was taken and sent to the pathology department for histopathological examination.

Histopathology examination revealed mild hyperkeratotic and atrophic epidermis with basal cell vacuolar degeneration and pigment incontinence overlying the fibro-collagenous dermis (Fig. 2). Also, the superficial dermis showed moderated lymphocytic infiltration admixed with pigment laden macrophages surrounding capillaries (Fig. 3).

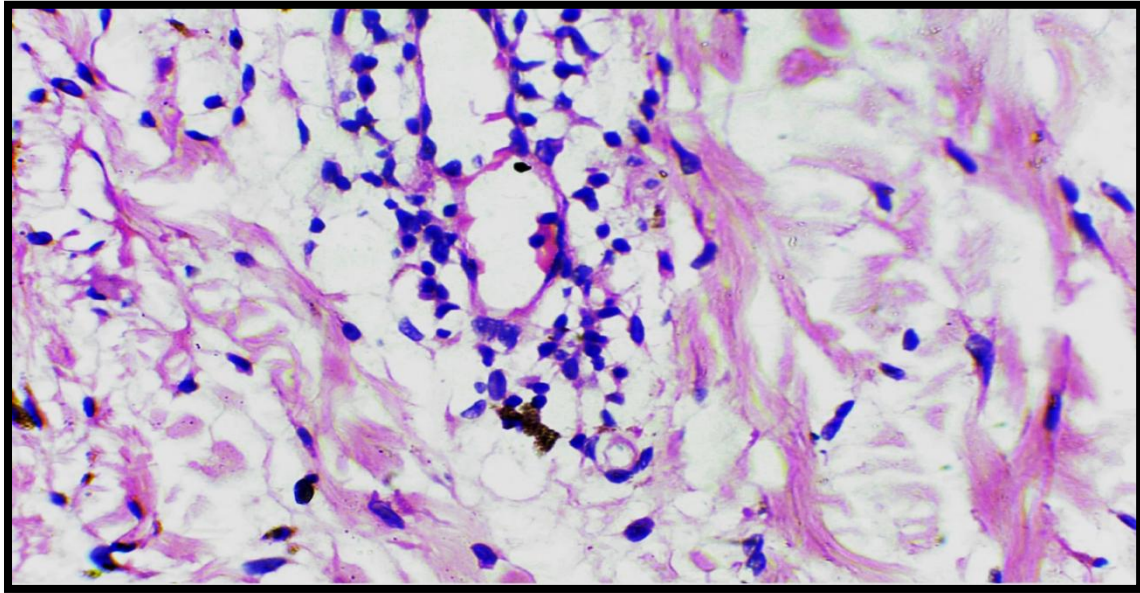
A diagnosis of Erythema Dyschromicum Perstans (EDP) was made.



**Fig. 1. Clinical picture of the grey colored macules which show mild hyperemia at the edges**



**Fig. 2. Section showing thinned out epidermis with basal cell vacuolar degeneration overlying a fibrocollagenous dermis. Lymphocytes and pigment laden macrophages noted in the dermoepidermal junction**



**Fig. 3. Capillaries surrounded by lymphocytes**

### 3. DISCUSSION

Pathologically, EDP may involve immune mediation. It has also been postulated that direct damage to melanocytes and basal layer keratinocytes results from abnormal immune response of the body to particular foreign antigens.

The hair dye applied by our patient could have been responsible for such postulated immune reaction. Typically, the active lesions in this condition show basal cell vacuolar degeneration with pigmentary incontinence by presence of many melanophages in the upper dermis. There is also lymphohistiocytic infiltration of dermal capillaries documented in many such cases.

In case of residual macules, there is predominance of the pigment incontinence, while the cellular infiltration and basal cell vacuolar degeneration may range anywhere from minimal to intense. Thus, the patient was diagnosed with EDP from both clinical and histopathological findings.

Differential diagnosis of this condition includes Addison's disease, pigmented Lichen planus, idiopathic eruptive macular pigmentation and post-inflammatory hyperpigmentation. Pigmented Lichen planus is the most commonly considered differential diagnosis of EDP. In pigmented Lichen planus, the lesions are usually characterized by bright violaceous/purple, flat

topped and solid papules that are often crossed by whitish lines (Wickham Striae). Lichen planus commonly involves mucous membrane and is associated with mild pruritis [2] neither of which were present in our patient. We excluded features like Ultra-violet (UV) light induced aggravation of lesions [3] and systemic autoimmune/ infectious pathogenesis [4] of post-inflammatory hyperpigmentation and Addison disease respectively, as a result of thorough history elucidation and clinical examination.

Use of various therapies including topical and systemic corticosteroids, UV light, antimalarial agent and antibiotics has been reported without clear evidence of benefit [5,6].

Some limited data from small studies suggest significant benefit from treatment with Clofazimine [7,8]. Thus, it was tried and utilized in our current scenario.

### 4. CONCLUSION

In our case, Clofazimine along with topical Mometasone has been used with some success, apparently because of their anti-inflammatory and immune-modulating effects. Patient was treated with both for three months. After the treatment period, a betterment of the erythematous component of the pigmented lesions was noticed. But for many patients however, longstanding EDP can be chronically disfiguring and a disconcerting problem that is

resistant to treatment modalities.<sup>[6]</sup> Clinicians should suspect this entity whenever a large pigmentary process is presented so that therapy can be initiated much earlier and lessen the residual impact of the lesions.

## CONSENT

As per international standard or university standard, patient's consent has been collected and preserved by the authors.

## ETHICAL APPROVAL

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

## REFERENCES

1. Rodrigues M, Pandya AG, Bekkenk M, Parsad D, Kumarasinghe SP. Current understanding of lichen planus pigmentosus, erythema dyschromicum perstans (ashy dermatosis), and idiopathic eruptive macular pigmentation. *Pigment Int* 2019;**6**:4-8.
2. Lapeere H, Boone B, De Schepper S, Verhaeghe E, Van Geel M, Ongenaë K, et al. Hypomelanoses and hypermelanoses. In: Goldsmith LA, Katz SI, Gilchrist BA, Paller AS, Leffell DJ, Wolff K, editors. *Fitzpatrick's Dermatology in General Medicine*. 8<sup>th</sup> ed. New York, NY: McGraw-Hill; 2012. Chapter 75.
3. Ruiz-Maldonado R, Orozco-Covarrubias ML. Post-inflammatory hypopigmentation and hyperpigmentation. *Semin Cutan Med Surg* 1997 Mar;**16**(1):36-43.
4. O'Connell S, Siafarikas A. Addison disease - diagnosis and initial management. *Aust Fam Physician*. 2010 Nov;**39**(11): 834-7.
5. Kumarasinghe SPW, Pandya A, Chandran V, Rodrigues M, Dlova NC, Kang HY, et al. A global consensus statement on ashy dermatosis, erythema dyschromicum perstans, lichen planus pigmentosus, idiopathic eruptive macular pigmentation, and Riehl's melanosis. *Int J Dermatol* 2019 Mar;**58**(3):263-72.
6. Durmaz K, Özer İ, Fındık S, Oltulu P, Ataseven A. Erythema Dyschromicum Perstans: A Case Report. *J Pigment Disord* 2017 Jan;**4**(2):266.
7. Molinar VE, Taylor SC, Pandya AG. What's new in objective assessment and treatment of facial hyperpigmentation? *Dermatol Clin*. 2014;**32**(2):123-35.
8. Baranda L, Torres-Alvarez B, Cortes-Franco R, Moncada B, Portales-Perez DP, Gonzalez-Amaro R. Involvement of cell adhesion and activation molecules in the pathogenesis of erythema dyschromicum perstans (ashy dermatitis). The effect of clofazimine therapy. *Arch Dermatol*. 1997 Mar;**133**(3):325-9. PMID: 9080892.

© 2021 Lochini et al.; This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Peer-review history:

The peer review history for this paper can be accessed here:  
<https://www.sdiarticle5.com/review-history/80408>