

Non-eczematous lichenoid contact cheilitis: A rare presentation

Dear Editor,

A 50-year-old non-diabetic, non-hypertensive man presented with recurrent elevated lip lesions for two months. It was associated with mild itching without any oozing. He reported using black-coloured dye (containing paraphenylenediamine, PPD) on scalp hair for five years and on the moustache hair for two months. Initially, he used to experience itching, followed by the development of itchy, reddish, and pigmented lesions on the lips. The patient had a history of similar red elevated scaly lesions associated with itching over the scalp after using hair dye. Because of the scalp lesions, the patient stopped using hair dye on that area. It was not associated with any breathing difficulty or eyelid oedema. He denied the use of lip cosmetics, smoking, chewing tobacco, or any oral medications. The lesions used to improve with the use of topical steroids. Examination showed multiple erythematous to reddish-grey flat-topped papules and plaques on the vermilion of both lips, which were associated with erosion and crusting. In addition, a similar lesion was present on the upper lip. The lip angles were spared [Figure 1]. Examination showed that the oral cavity and the rest of the mucocutaneous regions were spared too. The possibility of lichen planus cheilitis and lichenoid contact cheilitis was considered. Dermoscopy revealed scale-crust, erosions, and reddish-grey structureless areas [Figure 2a]. Patch testing with Indian standard and cosmetic series showed positivity for paraphenylenediamine (2+, PPD). Histopathological examination showed an acanthotic epidermis with focal parakeratosis, mild spongiosis, lymphocytic exocytosis, basal cell vacuolisation, and a dense band of lichenoid infiltrate consistent with the lichenoid eruption [Figure 2b]. Based on these findings, a final diagnosis of lichenoid contact cheilitis (LCD) secondary to PPD-containing hair dye was made. The patient was advised to stop using the PPD-containing hair dye. Application of a topical mometasone furoate 0.1% cream twice daily was prescribed for two weeks [Figure 3], leading

to complete subsidence of the lesion without any recurrence at the six-month follow-up.

Cheilitis, a common entity encountered in day-to-day clinical practice, can be due to a multitude of causes. Many agents can cause contact cheilitis (CC). Clinically, it can be eczematous or non-eczematous. Non-eczematous contact dermatitis is a rare subtype of contact dermatitis with varied clinical morphology. The various non-eczematous contact dermatitis described are erythema multiforme-like, purpuric, pigmented, lichenoid, lymphomatoid, pustular, and dyshidrosiform contact dermatitis.¹ PPD-containing hair dyes and PPD-derived colour are well known to cause lichenoid contact cheilitis (LCC). Other reported causative agents are nickel, copper, arsenic, mercury, gold, *Primula obconica*, epoxy resins, aminoglycoside antibiotics, and methacrylic acid esters.^{2,3}

Lichenoid contact cheilitis can be mistaken for lichen planus, especially in skin of colour, as both present as violaceous or reddish-lilac papules and plaques. Table 1 summarises the differences between lichen planus and LCD.¹ A history of contact with a positive patch test for the concerned



Figure 1: Multiple erythematous to reddish-grey flat-topped small papules with erosions and crusting.

How to cite this article: Garg S, Behera B, Priyadharsan B, Gowda SK, Sethy M. Non-eczematous lichenoid contact cheilitis: A rare presentation. *Indian J Dermatol Venereol Leprol*. doi: 10.25259/IJDVL_1660_2024

Received: October, 2024 **Accepted:** March, 2025 **Epub Ahead of Print:** May, 2025

DOI: 10.25259/IJDVL_1660_2024

This is an open-access article distributed under the terms of the Creative Commons Attribution-Non Commercial-Share Alike 4.0 License, which allows others to remix, transform, and build upon the work non-commercially, as long as the author is credited and the new creations are licensed under the identical terms.



Figure 2a: Dermoscopy shows scale-crust, erosions, and reddish-grey structureless areas (non polarised, 10x).

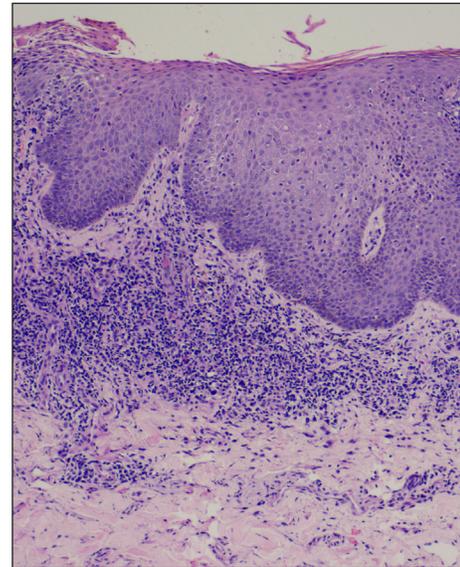


Figure 2b: Histopathology shows an acanthotic epidermis with focal parakeratosis, mild spongiosis, exocytosis, basal cell vacuolisation, and a dense band of lichenoid infiltrate consistent with the lichenoid eruption (Haematoxylin & eosin, 400x).



Figure 3: Complete subsidence of lesions post therapy.

Table 1: Histopathological characteristics of lichenoid contact dermatitis (LCD) and lichen planus (LP)

Criteria	LCD	LP
Spongiosis	++	-
Hypergranulosis	-/+	+++
Basal cell vacuolar degeneration	+	+++
Pigment incontinence	+	+++
Civatte bodies	-	++
Dermal papillae	Lengthened	Broad, dome shape
Inflammatory infiltrate (lymphohistiocytic)	Perivascular and mild	Band-like

+: present, -: absent

allergen can help differentiate between the two conditions. Histopathological examination can closely resemble lichen planus. However, lichen planus shows wedge-shaped hypergranulosis, prominent basal vacuolar degeneration, Civatte bodies, and band-like subepidermal lymphocytic infiltration obscuring the dermo-epidermal junction. In addition, spongiosis is not a feature of LP.¹

A rare variant of non-eczematous contact cheilitis, called pigmented contact cheilitis, has been described as caused

Table 2: Various allergens implicated in different types of non-eczematous contact dermatitis

Type of reaction	Substance	Allergens
Erythema multiforme-like	Plants and woods	<i>Dalbergia nigra</i> (Brazilian rosewood), Pau ferro (<i>Machaerium scleroxylon</i>), <i>Eucalyptus saligna</i> , <i>Artemisia vulgaris</i> , poison ivy
	Medicaments	Ethylendiamine, pyrrolnitrin, sulfamide, econazole, and balsam of Peru
	Others	Brominated compounds, phenyl sulphone derivatives, and epoxy resin
Purpuric contact dermatitis	Rubber compounds	N-isopropyl-N-phenyl-paraphenylenediamine and mercaptobenzothiazole
	Textile compounds	Optical whiteners (Tinopal CH 3566) and azoic dyes
	Plants	<i>Agave americana L</i> , <i>Zea mais</i> , <i>Frullania</i>
Pigmented contact dermatitis	Dyes	Naphthol AS, Sudan I, and paraphenylenediamine
	Cosmetics	Pigments: Pigment orange 3, pigment red 3 and pigment red 49
	Fragrances	Jasmine and Hydroxycitronellal
	Antiseptics	Carbanilide
Lymphomatoid	Others	Formaldehyde, nickel, and rubber
	Dyes	Paraphenylenediamine,
	Metals	Nickel and gold
Pustular	Others	para-tertiary butyl-phenol resin, and ethylendiamine
		Trichloroethylene, minoxidil

Contd.,

Table 2: (Contd...)

	Metals	Nickel, copper, arsenic, and mercury, and potassium dichromate
Dyshidrosiform	Topical medications	
	Dyes	Paraphenylenediamine (PPD)
	Metals	Nickel, cobalt, mercury
	Others	Para tertiary butyl phenol and formaldehyde resin
Lichenoid	Dyes	Para- phenylenediamine,
	Metals	Nickel, copper, zinc, and mercury
	Others	Epoxy resins, antibiotics, methacrylic acid esters, and methylisothiazolinone

by using lipsticks. The various types of allergens implicated in different kinds of non-eczematous contact dermatitis have been tabulated in Table 2.¹⁻⁵ Paraphenylenediamine is known to cause lichenoid, pigmented, pustular, purpuric, lymphomatous, and dyshidrosiform types of non-eczematous contact dermatitis.¹

In conclusion, we report a rare lichenoid contact cheilitis secondary to PPD and highlight the importance of recognising the same to avoid misdiagnosis and conduct appropriate management.

Declaration of patient consent: The authors certify that they have obtained all appropriate patient consent.

Financial support and sponsorship: Nil.

Conflicts of interest: There are no conflicts of interest.

Use of artificial intelligence (AI)-assisted technology for manuscript preparation: The authors confirm that there was no use of artificial intelligence (AI)-assisted technology for assisting in the writing or editing of the manuscript and no images were manipulated using AI.

Sonika Garg¹, Biswanath Behera¹, Bevan Priyadharsan¹, Shreya K Gowda¹, Madhusmita Sethy²

Departments of ¹Dermatology, and ²Pathology, All India Institute of Medical Sciences, Bhubaneswar, Odisha, India

Corresponding author:

Dr. Biswanath Behera,
Department of Dermatology,
All India Institute of Medical Sciences, Bhubaneswar,
Odisha, India.
biswanthbehera61@gmail.com

References

1. Bonamonte D, Foti C, Vestita M, Angelini G. Noneczematous contact dermatitis. *ISRN Allergy* 2013;2013:361746.
2. Sharma VK, Mandal SK, Sethuraman G, Bakshi NA. Paraphenylenediamine-induced lichenoid eruptions. *Contact Dermatitis* 1999;41:40-1.
3. Raymond J, Konya J, Bakis-Petsoglou S. Lichenoid contact dermatitis secondary to methylisothiazolinone (MI). *JAAD Case Rep* 2016;2:380-3.
4. Katsoulas N, Tosios K, Sklavounou-Andrikopoulou A. Lichenoid lesions of the upper lip: A retrospective study of 24 cases. *Med. Oral Patol. Oral Cir. Bucal* 2018;23:e302-7.
5. Aerts O, Meert H, Janssens S, Sprengers M, Chapelle K, Bensch L, et al. A sudden flare-up of a quiescent oral lichen planus: Methylisothiazolinone as the prime suspect?. *Contact Dermatitis* 2015;72:186-9.