Original Article

Variants Of Lichen Planus Associated With Thyroid Disorder- A Case Report

Dr NV Aishwarya* , Dr. Kalpana Devi Balakrishnan, Dr. Kumaravel Sadagopan.

Department of Dermatology, Venereology and Leprosy,
Meenakshi Medical College Hospital and Research Institute, Kanchipuram, Tamil Nadu, India

*Corresponding author:
Dr. NV Aishwarya Post graduate
DOI: 10.47750/pnr.2022.13.S04.258

Abstract

Lichen planus is an idiopathic chronic inflammatory skin condition , Lichen planus pigmentosus (LPPigmentosus) and lichen planopilaris (LPP) are two clinically and histologically distinct forms of lichen planus (LP). LPPigmentosus presents with sudden onset hyperpigmented macules and patches. On the other hand, LPP is a scarring follicular variant of lichen planus that presents with progressive, permanent patches of alopecia.Here we report a case of 62-year -old women with history of hypothyroidism and coexistence of LPPig with LPP . The association of pre-existing autoimmune thyroid disorder with lichen planopilaris is a well known factor.The presence of hypothyroidism in our patient not only predisposed to Lichenplanopilaris also to Lichenplanopigmentosus

Key words: lichen plano pilaris , lichenplanopigmentosus, thyroid disorder

INTRODUCTION:

Lichen planus is an idiopathic chronic inflammatory skin condition , Lichen planus pigmentosus (LPPigmentosus) and lichen planopilaris (LPP) are two clinically and histologically distinct forms of lichen planus (LP). LPPigmentosus presents with sudden onset hyperpigmented macules and patches. On the other hand, LPP is a scarring follicular variant of lichen planus affecting scalp, that presents with progressive, permanent patches of alopecia. Here we report a case of 62-year -old women with history of hypothyroidism and coexistence of LPPigmentosus with LPP .

CASE REPORT:

A 62-year-old woman who was a known case of hypothyroidism presented to dermatology OPD with loss of hair and multiple hyperpigmented patches over the left side of the face and neck for one year duration. On examination 4x7 cm crescent shaped scarring alopecia was seen over the vertex region of scalp extending bilaterally to the parietal scalp (Figure 1). she also had multiple asymmetrical hyperpigmented linear macules and patches present over the left side of face(Figure 2) with positive koebners phenomenon. Oral and genital mucosa, nails were normal.. Trichoscopic examination of scalp revealed cicatricial alopecia with perifollicular whitish-grey scaling associated with erythema, arboriform vessels,(Figure 3) absence of follicular openings and follicular plugging which was characteristic feature of LPP . Dermoscopic examination of face showed a pseudo network pattern of dark brown-grey dots suggestive of LPPigmentosus Punch biopsy of size 3mm was taken from left side of cheek and scalp respectively. The diagnosis was confirmed by histopathology -HPE of scalp(Fig 4) which showed

follicular plugging,hypergranulosis and dense band like perifollicular lymphocytic infiltrate around the infundibular epithelium suggestive of LPP.HPE of left cheek (Fig 5) showed hyperkeratosis,epidermal thinning,vacuolar degeneration of basal layer,bandlike infiltrate and melanin incontinence thus confirming the diagnosis of LPPigmentosus.Thus in same patient two different variant of lichen planus were noted in same time which was an unusual phenomenon. The patient was treated with topical and systemic corticosteriods with supportive medication. Strict sunscreen protection advised. The patient is in regular followup.

Figure 1: shiny patch of alopecia with violaceous hue of size 4×7cm

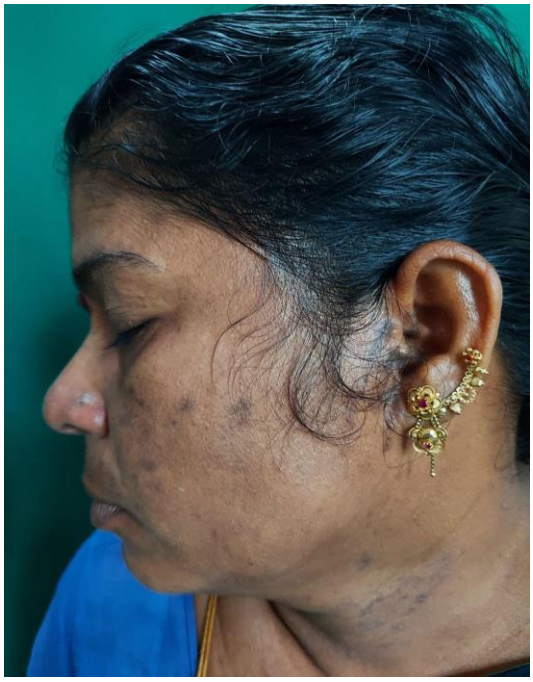

Figure 2 : Multiple asymmetrical Hyperpigmented linear macules and patches on face and neck

Figure 3 : Cicatricial alopecia with perifollicular whitish grey scaling with erythema, arboriform vessels

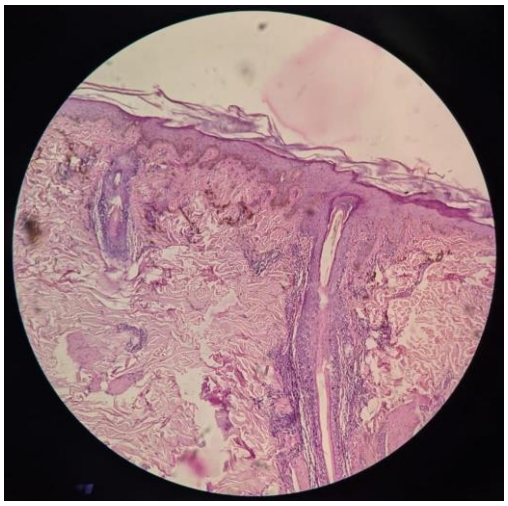

Figure 4: Hpe of scalp showing -follicular plugging ,hypergranulosis,fibrosis of centre of hair follicle and dense band like perifollicular lymphocytic infiltrate.

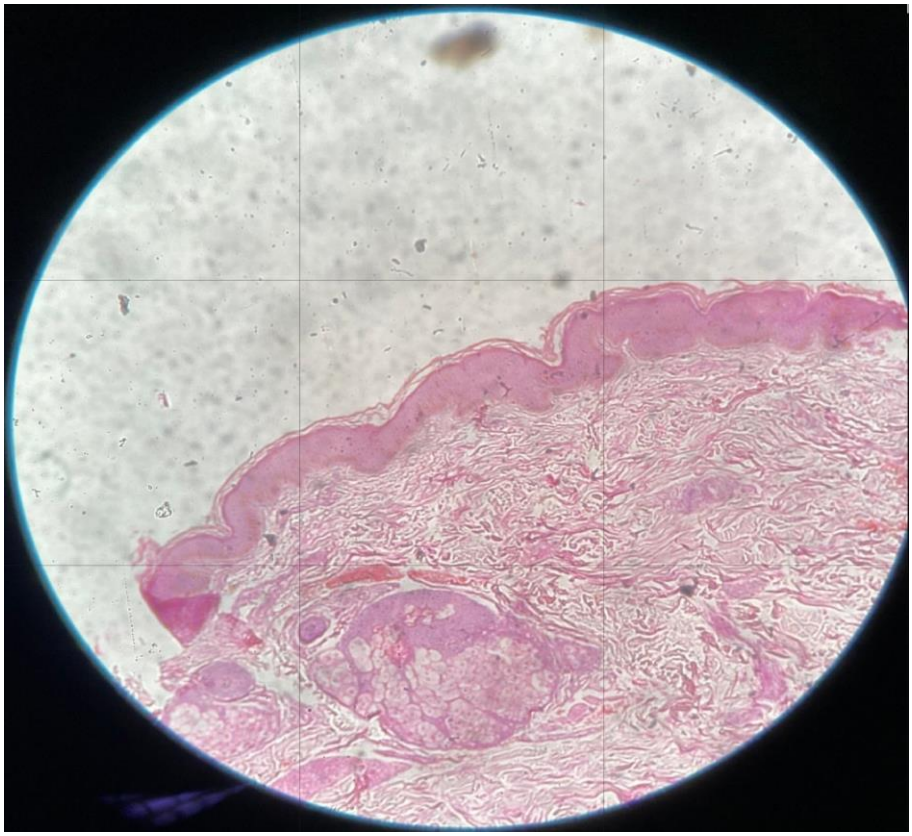

Figure 5: HPE of lesions from left cheek- shows hyperkeratosis, epidermal thinning, vascularity degeneration of basal layer ,band like infiltrate and melanin incontinence.

DISCUSSION:

Lichen planus (LP) is an idiopathic and chronic inflammatory skin condition that affects mucous membrane and apendages presents with extremely pruritic flat topped,polygonal,violaceous papules and plaques.The lesions show wickhams striae and positive koebners phenomenon. Lichen planus has many clinical variant[1]. The presence of more than one variant (LPPigmentosus with LPP) in same patient is a rare phenomenon which was seen in our patient. Another peculiar presentation in our patient was linear pattern of LPPigmentosus over left side of face. Literature search revealed till now only 20 case of linear LPPigmentosus has been reported. Lichen planus pigmentosus incidence and etiology remains unknown. LPP over scalp also followed blaskhoid pattern over vertex region extending to bilateral parietal region. we hypothesis unknown triggers like viral infection, drugs, topical agents and sun exposure could have initiated cutaneous antigenic mosaicism leading to mosaic T-cell response in a blaschkoid pattern in our patient[3-5]. Thyroid disorder was found to be an associated factor in LPP. Majority of the LPP patients (61.1%) had associated diffuse hair fall which might be a clinical manifestation of thyroid disorder. Treatment with thyroxine (T4) to animals has shown alteration in hair growth and pigmentation. But no definite explanation has been found for LPPigmentosus with decreased circulating thyroid hormone levels. A probable explanation may be because of the increased adrenocorticotropic hormone (ACTH) secretion by the same basophilic cells of the pituitary which is responsible for secreting thyroid stimulating hormone (TSH) as a result of positive feedback mechanism. Animal studies have demonstrated increase in ACTH and α-melanocyte-stimulating hormone after injections of thyrotropin-releasing hormone (TRH).Recently, TRH has been found to stimulate melanogenesis significantly in organ-cultured human hair follicles. TRH stimulates melanin synthesis, intrafollicular tyrosinase mRNA and enzyme activity, melanosome formation and increases melanocyte dendricity. findings has been proved in invitro studies. Hence, there may be a possibility of stimulation of human epidermal melanogenesis in vivo which needs further confirmation.[6-8]

CONCLUSION:

We this patient for the unique presentation of LPP and LPPigmentosus at same time in linear pattern and for the systemic association of hypothyroidism. Hence we strongly recommend routine thyroid function tests in patients with LPP and looking for the evidence of LPP in the patients with LPPigmentosus.

REFERENCES:

1.Karn D, KC S, Timalsina M. Lichen Planus Pigmentosus: A study for association of thyroid dysfunction. Kathmandu Univ Med J 2016;53(1):36-40.

Bhutani LK, Bedi TR. Lichen planus pigmentosus. Dermatology 1974; 149: 43

2. Weston G, Payette, M. Update on lichen planus and its clinical variants. Inter J Wom Dermatol 2015; 1.3; 140

3.cho S ,Whang KK. Lichen planus pigmentosus presenting in zosteiform pattern.J Dermatol .1997:24
4.Vachiramon V ,suchonwanit P,Thadanipon K .Bilateral lichen planus pigmentosus associated with hepatitis virus c infection Case Rep Dermatol.2010;2:169-72

5.Sonthalia S,Das A,Sharma S co-localization of linear lichen planus pigmentosus and milia in a child Indian J Dermatol 2016:61:237

6. Kanwar A, et al. A study of 124 Indian patients with lichen planus pigmentosus. Clin Exp Dermatol 2003;28: 481

7. Torres JR, et al. Lichen planus pigmentosus in patients with endocrinopathies and hepatitis C. J Am Acad Dermatol 2013; 68: AB139.

8. Rieder E, et al. Lichen planus pigmentosus. Dermatol 2013;19:12