Case Study

A single case study of treating hypertrophic lichen planus with Ayurvedic medicine

Kshirod Kumar Ratha, Laxmidhar Barik, Ashok Kumar Panda, Jayram Hazra

Department of Clinical Research, National Research Institute for Ayurvedic Drug Development, CCRAS, Kolkata, West Bengal, India

Abstract

Ayurvedic medicines are often considered effective for chronic and lifestyle disorders. Hypertrophic lichen planus (HLP) is a rare inflammatory skin condition and develops into squamous cell carcinoma in few cases. It has resemblance with *Charma Kushtha* mentioned in Ayurvedic classics. Conventional therapy used in this condition is unsatisfactory and is not free from side effects. A case of long-standing systemic steroid-dependent HLP is presented here which was intervened successfully with Ayurvedic modalities.

Keywords: Ayurveda, *Charma Kushtha*, *Kshudra Kushtha*, hypertrophicus lichen planus

Introduction

Ayurvedic medicines are often considered effective for treating chronic and lifestyle-related diseases, and merely, few of them have been systematically evaluated for treating chronic illness.[1]

Hypertrophic lichen planus (HLP) is a subacute or chronic variant of lichen planus (LP) of unknown etiology.[2] It is an inflammatory disorder in which T-lymphocytes attack the basal epidermis, producing characteristic clinical and histological lesions. It occurs in middle age, and women are commonly affected than men.[3] It is characterized by epidermal hyperplasia in response to persistent itch and gets intense by stress.[4,5] Squamous cell carcinoma, keratoacanthomas developing on the HLP of lower limbs have been reported.[6] Most recent conventional treatment of the HLP and LP disorders consists the use of topical and systemic corticosteroid, psoralen and ultraviolet A therapy, immunosuppressant, systemic retinoid, cyclosporine, and acitretin.[7,8] All these drugs are proved to reduce the symptoms temporarily. In Ayurveda, this condition may be considered under *Charma Kushtha*, a type of *Kshudra Kushtha* (minor skin diseases), due to the similarity in signs and symptoms with HLP. *Charma Kushtha* is dominant of *Vata Dosha* and *Kapha Dosha*. In this condition, the skin over the patch becomes thick like the skin of an elephant (lichenification).[9]

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Herein, details of a systemic steroid-dependent HLP patient, effectively intervened with complex ayurvedic modalities, have been described. A substantial reduction in pruritus and improvement in the skin lesion were observed after a period of 4 months of regular treatment and 2-month follow-up. The improvement was observable through the follow-up photographs [Figures 1-4].

Case report

Presenting concern

A 63-year-old male diagnosed with HLP by a dermatologist presented in the Outpatient Department (OPD) of National Research Institute of Ayurvedic Drug Development, Kolkata, West Bengal, India (OPD Regn. No. 3306/2014-15), with complaints of itchy, large verrucous lesions on medial malleolus of both legs for a long time. These symptoms were occurring off and on for the past 2 years and 5 months including a recurrence 2 months ago. He also had a history of hypertension and bronchial asthma and was on regular medication for it [Table 1].

Address for correspondence: Dr. Kshirod Kumar Ratha, National Research Institute of Ayurvedic Drug Development, CCRAS, 4-CN Block, Sector-V, Bidhannagar, Kolkata - 700 091, West Bengal, India. E-mail: drkkratha.ayu@rediffmail.com

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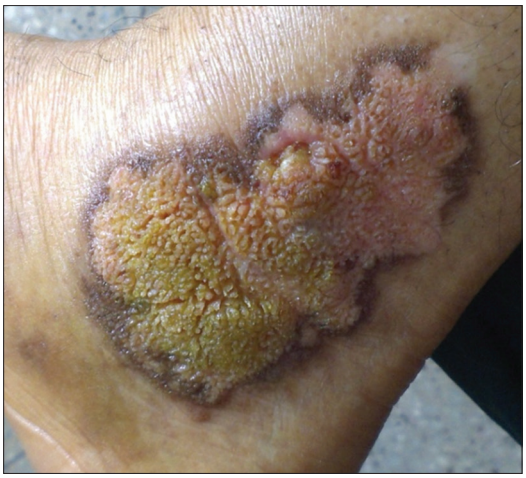

Figure 1: Skin lesion (right leg) before treatment

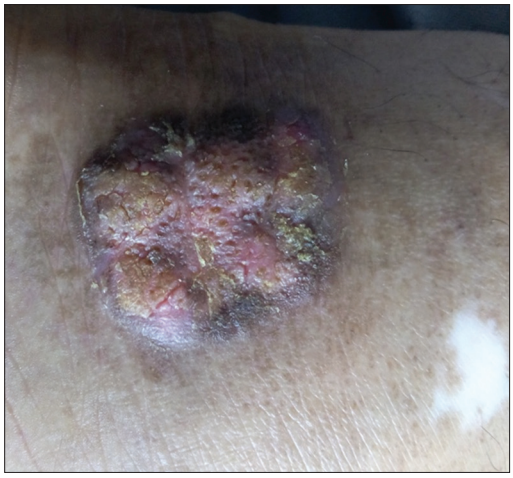

Figure 2: Skin lesion (left leg) before treatment

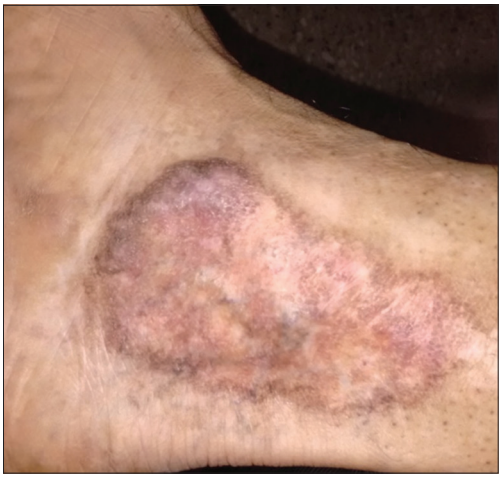

Figure 3: Skin lesion (right leg) after treatment

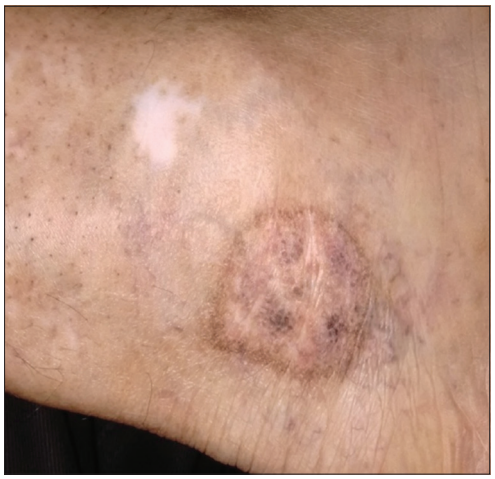

Figure 4: Skin lesion (left leg) after treatment

Clinical findings

General examination

The general condition of the patient was good and without alterations in vital signs. He had a normal appetite, bowel and bladder habit, and regular sleep pattern. His *Prakriti* was *Pitta-Kapha* predominant, and he was assessed with mental stress on psychological evaluation.

Local examination

Cutaneous examination revealed solitary, well-circumscribed, slightly moist skin lesion measuring 9 cm × 6 cm, 6 cm × 4 cm seen over medial malleolus of the right and left leg, respectively. Few keratotic crusts appeared on the lesion of the left leg. The surrounding skin showed thickening and hyperpigmentation. The surface consisted of the slough and papillated excrescences closely grouped, aroused from the surrounding surface. No local tenderness or bleeding on manipulation was elicited, and no inguinal lymph nodes were involved. The mucous membranes were unaffected. No sign of varicose vein was observed on any of the legs. No such lesions of LP were found elsewhere on the body. However, hypopigmented lesions of vitiligo were seen on legs [Figures 1 and 2].

Investigation

Previously done biopsy report of the lesions from dermatopathologist revealed the presence of hyperkeratosis, acanthosis, hypergranulosis, irregular downward elongation of the rete ridges, and foci of damage (liquefaction) to basal cell layer. The dermis was densely infiltrated by chronic inflammatory cells without any evidence of malignancy. The report was compatible with LP hypertrophicus.

Case conception and selection of ayurvedic treatment

Since the patient was told by the dermatologist about the prognosis of his condition and also became aware of the disadvantages of corticosteroid from some other sources, he had chosen Ayurvedic intervention for his condition. As there was no established Ayurvedic treatment available particularly for HLP, he was also explained about the uncertainty of the treatment.

Charma Kushtha is a clinical condition described in Ayurveda which resembles HLP. Ayurvedic perspective of this particular case presenting with pruritus and verrucous lesion can be established with clinical presentation. Itching,

Table 1: Timeline of the case

Dates	Relevant medical history and interventions	
1984	Lichen planus, after leaving a job. Relieved with topical and oral medications	
1986	Bronchial asthma, and on levosalbutamol (transcaps) 100 mcg twice daily, or as and when required	
2006	Hypertension, and on telmisartan 40 mg daily	
2010	Vitiligo on both forelegs, without any medication	
February 2012	Treated with a topical cream containing corticosteroid and antifungal for chronic lichenified eczema for presenting complaints. Received additional treatments of oral corticosteroid (prednisolone 10 mg o.d.) and oral antihistaminic; which yielded mild relief to him	
Relevant personal, family, and psychosocial history	No history of photosensitivity, diabetes, loss of weight, and any other significant medical history. Family history was also not suggestive. He had no known history of drug allergy. He had a normal bowel and bladder activities along with adequate sleep. He was not a smoker or alcohol user. He had not used any changed soap, detergent, socks, and full shoes from the date of illness. He leads a stressful life	
Date and day of visit	**Summaries from initial and follow-up visits and description of skin lesions**	**Interventions**
July 19, 2014 (day 0)	Itchy, large verrucous lesions on medial malleolus of both legs Solitary, circumscribed large verrucous lesions on medial malleolus of both the legs. Moist skin surface, raised papillated excrescences, surrounding skin hyperpigmented erythema in the front side of the lesion [Figure 1]. Big popular coalescent papular lesion. Surrounded area of hyperpigmentation with an area of necrosis in-between [Figure 2]	*AK* + *PK* + *AV* + *TC* + *JG* in prescribed dosage. Ensuing dietary and lifestyle modification Advised to continue medicine for hypertension and bronchial asthma, as and when required
August 02, 2014 (day 14)	No relief in itching. Only mild reduction in the size of papillated excrescences, rest features remain unchanged	*AK* + *PK* + *AV* + *TC* + *JG*
August 15, 2014 (day 27)	Mild relief in itching. Surface dry, presence of crust, reduction in papillated excrescences, and increased pigmentation of surrounding skin	*AK* + *PK* + *AV* + *TC* + *JG* in prescribed dosage
September 05, 2014 (day 48)	Significant reduction in itching. Surface dry, presence of crust, papillae significantly reduced, pigmentation reduced	*AK* + *AV* + *TC* + *JG* in prescribed dosage
September 26, 2014 (day 69)	No itching. Surface dried, reduction in crust, presence of a small linear blood streak, pigmentation reduced from surrounding	*AK* + *AV* + *TC* + *JG* in prescribed dosage
October 07, 2014 (day 80)	Significantly reduction in crust and pigmentation and shrinkage of lesions	*AK* + *AV* + *TC* + *JG* in prescribed dosage
October 29, 2014 (day 102)	Scarry hyperpigmented area with few area of hypopigmentation [Figure 3]. Lesion has reduced in size. Scarry areas of few hyperpigmented spots with very few areas of mild hypopigmentation [Figure 4]	*AV* + *TC* in the prescribed dosage

LP: Lichen planus, *AK*: *Aragvadhadi Kashayam*, *PK*: *Patoladi Kashayam*, *AV*: *Arogyavardhini Vati*, *TC*: *Triphala Churna*, *JG*: *Jatyadi Ghrita*

hyperkeratosis, sliminess, and thickness, all are the features of *Kapha* dominancy. Acanthosis (*Karshnya*) is the feature of aggravated *Vata*. On the basis of symptomatology, the disease can be equated with *Kapha-Vata Kushtha*. The etiology (*Nidanam*) of *Kushtha* is *Visha* (autoimmune), usually results from exposure to certain environmental factors or due to consumption of incompatible foods. Stress also plays a significant role in the case as excessive mental stress vitiates the *Rasa Dhatu* and *Rasavaha Srotas*, which is responsible for *Kapha Dushti*. The autoimmune nature of disease along with *Kapha Dushti* initially started as itchy lesion (*Kandu*) on both malleolus, which is *Kapha* predominant. Hence, the primary *Dosha* is *Kapha* when it involves the *Rasa Dhatu* and causes *Kandu* (*Kapha Dushti*), moist skin (*Kapha Dushti*), keratotic crust (*Kapha-Vata*), and thickening of skin (*Shopha* of hard form due to *Vata-Kapha Dushti*). Association of *Rakta Dhatu* leads to hyperpigmentation and acanthosis, and finally, moist skin (*Srava*) results from connection of *Lasika*. Varicosity of veins of lower limbs was not found in this case; however, medial malleolus affection is common due to poor vascularity. This all finally resulted into verrucous lesion (*Vranam*) which is also been told as complication of *Kushtha*.

The principle of management in the different stages of the *Kushtha* (skin diseases) includes eliminative procedures (therapeutic emesis, purgation, etc.), vein puncture, local applications, and internal administration of drugs.[10] Considering the involvement of *Dosha* and *Dushya* (pathognomonic factors) and analysis of causative factors (*Hetu*) of the disease, the patient was recommended a comprehensive Ayurvedic modalities, consisting of *Aushadha* (compound Ayurvedic formulations), *Ahara* (dietary modification), and *Vihara* (lifestyle modification) at OPD level. The drugs with *Kapha Vataghna* (*Doshahara*) properties, along with *Vishaharam*, *Kandughna*, *Kushthaghna*, and *Vranashodhanaropanam* (*Vyadhihara*) properties, were chosen and prescribed at different stages in the case [Table 2].[11]

Table 2: Ayurvedic drugs prescribed to the hypertrophic lichen planus case

Drugs	Manufacturer	Dosage	Indications as per ayurvedic classics[11,22,25]	Rationale of use in the case[23,24,26]
AK	AVS, Kottakkal, Kerala	25 mL twice daily in empty stomach for 12 weeks	*Visha Vikara* (disorders due to poison), *Kaphavikara* (vitiation of *Kapha Dosha*), *Kandu* (itching), *Dustavrana* (nonhealing ulcer), *Kushtha* (diseases of skin)	It relieves symptoms related to *Kapha* (itching, discharge, etc.) and eliminates toxins and the remnant of steroids in the body
PK	AVS, Kottakkal, Kerala	25 mL twice daily in empty stomach 6 weeks	*Kapha-Pitta Roga Kushtha*, *Visha*, *Jvara* (fever)	It is given for elimination of toxin and reversal of inflammatory pathway
AV	IMPCL, Mohan, Uttarakhand	250 mg twice daily with lukewarm water after food for 16 weeks	*Kushtha, Medo-Dosha, Yakrtvikara* (liver disorder), *Jirna-Jvara* (chronic fever)	It is a channel cleanser (*Pathya*) and good for a skin condition
TC	NRIADD Pharmacy, Kolkata	5 g at bed time with lukewarm water daily for 6 weeks and then, as and when required	*Kapha-Pitta Roga, Kushtha*, *Prameha* (urinary disorders), *Anaha* (abdominal distension due to retention of stool or urine)	*Rasayana*, bowel cleanser and eliminates toxin from the bowel. It can be prescribed to hypertensive cases also
JG	AVS, Kottakkal, Kerala	For topical application, two times daily till complete healing	*Marmashrita Vrana* (ulcers of vital regions), *Kledi Vrana* (weeping ulcer)	Though it is prescribed for wound, fissure etc., as it contains *Tuttha* ($CuSO_4$), it helps in removal of slough and lichen type growth
Dietary modification	Normal bland diet, devoid of seafood, pickles, prawns, curd, and egg			
Lifestyle modification	Avoid of day sleep, night sleeplessness, and excessive sun exposure			

AK: *Aragvadhadi Kashayam*, *PK*: *Patoladi Kashayam*, *AV*: *Arogyavardhini Vati*, *TC*: *Triphala Churna*, *JG*: *Jatyadi Ghrita*

The patient was advised to report at an interval of 15 days or report as and when required for assessment. He was also advised to taper off the corticosteroid (prednisolone) dose over a period of 1 month in consultation with an allopathic doctor and also directed to continue the medications for hypertension and bronchial asthma as such [Table 1].

Follow-up and outcomes

Picture of the affected skin was taken at the time of initiation of the treatment and subsequently on every visit as per the methods used by Rastogi and Chaudhari [Figures 1-4].[12] The subsequent observations were also noted [Table 1]. The patient was assessed clinically on every fortnight visit. The consecutive photographs were taken after each follow-up visit when compared with the before treatment status were able to exhibit the changes in the skin lesions [Figures 1-4]. This shows a considerable improvement in the skin lesions following the therapy to the before treatment status. No adverse effect pertaining to the prescribed drug was also reported. On follow-up for 6 months, there was no recurrence of the lesions.

Discussion

Charma Kushtha is a type of skin disease mentioned in Ayurveda under the classification of *Kshudra Kushtha*. The classical sign of *Charma Kushtha* is thickening of the skin like the skin of an elephant.[13] It is verrucous lichenification of skin and usually develops in patients with psoriasis, dry eczema, and LP. Treatment of *Kushtha* including all type *Kushtha* consists of purification therapy (S*amshodhana*),[14] internal and external administration of the drug (*Samshamana*).[15] Dietary and lifestyle modification also play an important role in the management of *Kushtha*.[16] The patient was suffering from a *Kapha-Vata* dominant *Kushtha* complicated with a *Vranam* (verrucous lesion). The association of HLP with vitiligo in the case may be due to a common autoimmune etiology. Coexistence of lesions of Becker's nevus along with vitiligo and LP was also reported.[17]

LP has a strong association with anxiety, stress, and diabetes.[3] In the presenting case, though the onset of disease can be linked with stress, the connotation of bronchial asthma in the case may due to common immunological linkage. HLP and few varieties of long-standing, erosive LP develop into Bowen's disease, a premalignant condition, and squamous cell carcinoma. Although the disease is diagnosed from its clinical features, biopsy is often recommended to make the diagnosis and to look for cancer. The current conventional treatment involves topical and a long course of oral steroids, calcineurin inhibitors, retinoid, acitretin, hydroxychloroquine, methotrexate, azathioprine, and phototherapy. Various studies had shown the use of indigenous medicines in oral LP.[18,19] There are also limitations for the use and drawbacks of topical steroids and systemic glucocorticoids because of suppression of hypothalamic–pituitary–adrenal axis and other systemic side effects.[20] Ayurvedic principles have shown potential to be used in noncommunicable and lifestyle disorders. These are convenient, safe, and least expensive in compare to the conventional method of treatment.[21] Herein, the drugs, dietary, and lifestyle modifications were

chosen [Table 2] on the basis of *Nidanam* (causative factors of disease), involvement of dominant *Dosha* (*Kapha-Vata*), and nature of the disease (*Vyadhi*). Formulations having *Kaphavataharam*, *Vishaharam*, *Kandughna*, *Kushthaghna*, and *Vranashodhanaropanam* properties were used. Blood-letting (*Rakta-Mokshana*) is also one of the effective treatments.

Aragwadhadi Kashayam used in the case is *Kushthaghna*, *Vishaghna*, and having *Shamanam* (pacificatory) properties. It is effective in *Kandu*, *Prameha* and acts as *Dushta Vranavishodhaka*. *Patolamuladi Kashayam* is also *Kaphahara, Kushthahara,* and *Vishahara*. It is used for *Shodhana* (purification and bowel cleansing). *Triphala* is *Shotha-Kleda-Vranahara* and *Vishahara*. *Jatyadi Ghrita* used in the case, intend for *Vranashodhanaropanam* (cleansing and healing of wound). *Tutha* ($CuSo_4$) being its one of the ingredient, it has cleansing action on slough. Major ingredients of *Arogyavardhini Vati* are *Gandhaka* (Sulfur), *Katuki* (*Picrorhiza Kurroa*), *Nimba* (*Aristolochia indica*), which are the versatile drugs for all type of skin diseases. It also contains *Tamra* (Copper), which has scrapping (*Lekhana* and *Vranashodhana* action) and acts on *Lasika*. Further, *Arogyavardhini Vati* is a panacea by its name and a good medicine for liver. It is helpful in *Pachana* (metabolism) of *Ama Visha* and corrects the production of vitiated *Rasa Dhatu* in the body.

The modalities adopted in the case may be applied to the similar case too. However, a trial with one or two formulations may be proposed to assess further role of Ayurveda. The post treatment biopsy could not be done to compare with the baseline data is the limitation of the study. Further to validate the therapy for HLP, the trial may be performed in an adequate number of patients along with a comparison of biopsy at the baseline level and after completion of therapy.

Conclusion

HLP is a rare and difficult skin condition to cure. It is notorious for its recurrence and has also the possibility to develop into squamous cell carcinoma. The conventional treatment options available are also not satisfactory and are not free from systemic side effects. This observation endorses a step toward the practice of Ayurvedic intervention in HLP.

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Conflicts of interest

There are no conflicts of interest.

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हिन्दी सारांश

आयुर्वेदिक औषधियों द्वारा हाइपरट्रॉफिक लाइकेन प्लानस की चिकित्सा-एकल रोगी का अध्ययन

क्षिरोद कुमार राठा, लक्ष्मीधर बारिक, अशोक कुमार पंडा, जयराम हज़ारा

आयुर्वेदिक औषधियाँ प्रायः पुराने एवं जीवनशैली से जुड़ी बीमारियों के लिए प्रभावी मानी जाती है। हाइपरट्रॉफिक लाइकेन प्लानस एक असामान्य त्वचा रोग है और यह कुछ स्थिति में स्क्वेमस सेल कार्सिनोमा में रूपांतरित होता है। यह आयुर्वेदिक ग्रन्थों में उल्लेख किए गये चर्म कुष्ठ के सादृश है। पारंपरिक चिकित्सा का उपयोग इस रोग में उत्साह जनक नहीं है और पार्श्वप्रतिक्रिया से भी मुक्त नहीं है। लंबे समय से प्रणालीगत स्टेरॉयड पर निर्भर हाइपरट्रॉफिक लाइकेन प्लानस के रोगी का विवरण यहाँ प्रस्तुत किया गया है, जिसका सफलता पूर्वक आयुर्वेदिक औषधियों के द्वारा इलाज किया गया।