

# Case Report: Lichen Planus-Like Keratosis and a Review of Literature

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## ABSTRACT.

Lichen planus-like keratosis also known as lichenoid keratosis is an uncommon skin disease in Africans and occurs in individuals in their fifth to seventh decades of life. It presents as a solitary macule, papule or plaque mostly on sun-damaged skin. Lichen planus-like keratosis can mimic a variety of benign and malignant cutaneous diseases. Typical dermoscopy and reflectance confocal microscopy features allow differentiation from other cutaneous lesions. Histopathological evaluation is important in differentiating lichen planus-like keratosis from other lichenoid diseases with which it shares several features. Several treatment modalities including drugs are employed in the treatment of lichen planus-like keratosis. A case of lichen planus-like keratosis in a young Nigerian is reported.

**Keywords:** Lichen planus-like keratosis, Histology, Lichen planus, lichenoid keratosis

## Rapport de Cas: La Kératose de Type Lichen Planus et Examen de la Littérature

### ABSTRAIT

La kératose de type lichen planus, également connue sous le nom de kératose lichénoïde, est une maladie de la peau rare chez les Africains et survient chez les individus entre la cinquième et la septième décennie de la vie. Il se présente sous la forme d'une macule solitaire, d'une papule solitaire ou d'une plaque solitaire principalement sur la peau endommagée par le soleil. La kératose de type lichen plan peut imiter une variété de maladies cutanées bénignes et malignes. Les caractéristiques typiques de la dermoscopie et de la microscopie confocale à réflectance permettent de se différencier des autres lésions cutanées. L'évaluation histopathologique est importante pour différencier la kératose de type lichen plan des autres maladies lichénoïdes avec lesquelles elle partage plusieurs caractéristiques. Plusieurs modalités de traitement, y compris des médicaments, sont utilisées dans le traitement de la kératose de type lichen plan. Un cas de kératose de type lichen planus chez un jeune Nigérian est rapporté.

**MOTS CLÉS:** Kératose de type lichen planus, Histologie, Lichen planus, kératose lichénoïde

## Introduction

Lichen planus-like keratosis also known as lichenoid keratosis is an uncommon benign skin lesion in individuals with richly pigmented skin.<sup>1,2</sup> It occurs in individuals aged 28 to 87 years (mean age of 59.5 to 61.2 years) and is commoner in females.<sup>2-7</sup> Lichen planus-like keratosis (LPK) occurs mostly on the trunk, extremities and the face.<sup>3,5,8-10</sup> Although LPK occurs as a solitary lesion in most affected individuals, multiple lesions have been reported.<sup>3,6</sup> Clinically, LPK occurs as an erythematous or hyperpigmented macule, papule or plaque of 3 weeks to 4 years duration (average of 5 months) with a smooth or rough surface.<sup>1,3,6,10</sup> Lichen planus-like keratosis is frequently misdiagnosed and this is usually the reason for excision and histological

evaluation.<sup>4,8,9,11</sup> Typical histologic features of LPK have been variously documented as well as features which differentiate it from other lichenoid diseases especially lichen planus with which it shares a lot of histologic features.<sup>3,5,6,10</sup> Non-invasive techniques (dermoscopy and reflectance confocal microscopy) are increasingly being used to evaluate and differentiate LPK from other cutaneous lesions.<sup>2,7,12-14</sup> These techniques define features which appear to be peculiar to LPK.<sup>2,7,12-14</sup> A case of lichen planus-like keratosis in a young Nigerian is reported.

## Case Report

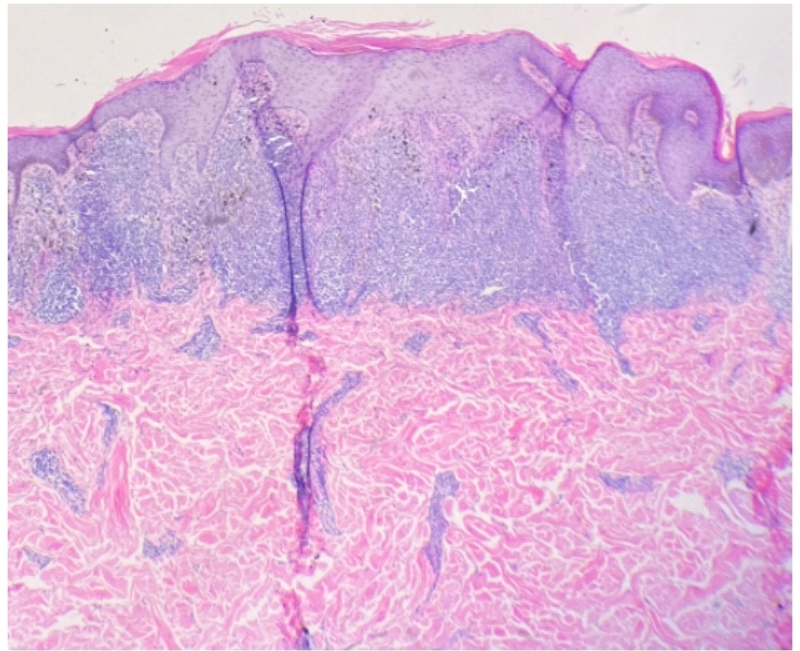
A 21year male student attended our clinic with a history of a pruritic rash on his abdomen of 6 months duration. The rash had initially increased in size. He

had no other skin lesion. He had self-medicated with triple action creams to no avail. Clinical examination revealed a hyperpigmented lichenified plaque with a rough surface, measuring 5 x 4 cm on the anterior abdomen (right). (See Figure 1) Systemic and ancillary investigations were normal. A diagnosis of an adnexal tumour to exclude lichen simplex chronicus was made and a skin biopsy for histopathology was done.

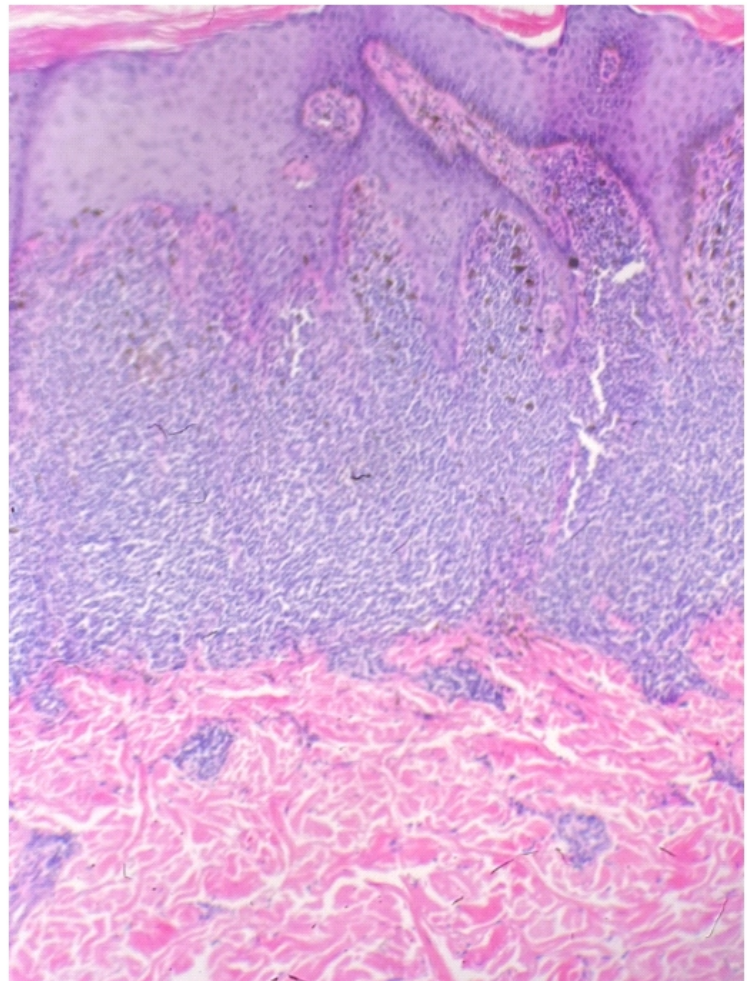
An excisional biopsy showed hyperkeratosis, hypergranulosis, irregular acanthosis, saw-toothed rete pegs, vacuolization of the basal layer, band-like lichenoid infiltrates of lymphocytes and histiocytes only, Max-Joseph's spaces at the dermoepidermal junction, necrotic keratinocytes, pigment incontinence and numerous melanophages. The adjacent skin was normal. A diagnosis of lichen planus-like keratosis was reported. (Figures 2, 3 and 4)



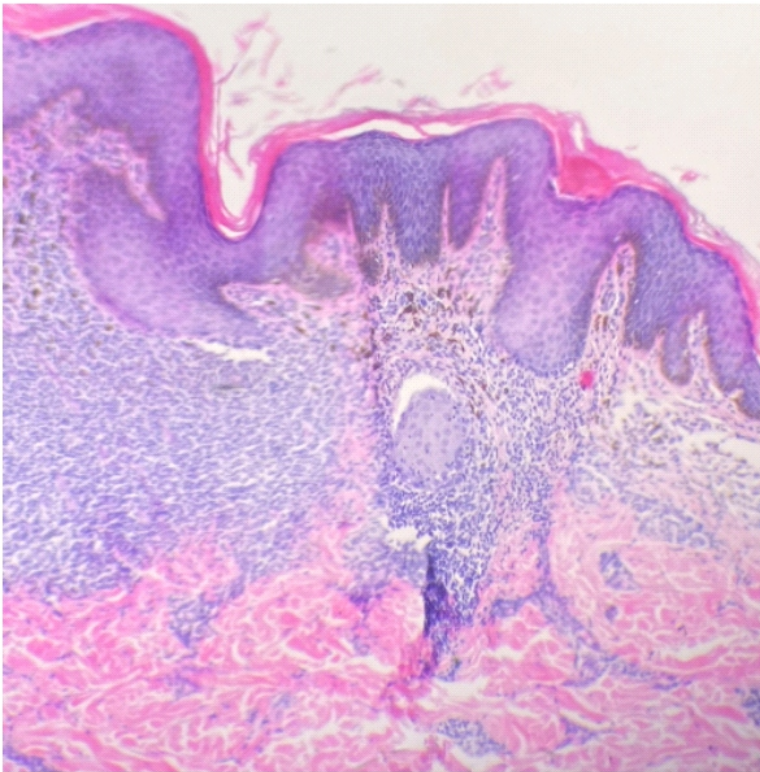
**Figure 1:** Verrucous hyperpigmented lichenified plaque



**Figure 2:** Lichen planus-like keratosis: Dense lichenoid infiltrates. H&E x 10



**Figure 3.** Lichen planus-like keratosis: Saw toothed rete pegs, pigment incontinence H&E x 20



**Figure 4.** Lichen planus-like keratosis: Max Joseph's space (basal layer and hair follicle). H&E x 10

## Discussion

Lichen planus-like keratosis (LPK), a benign skin lesion is frequently reported in the sun damaged skin of Caucasians.<sup>1,2,5,10</sup> Sun damage is rare in individuals with a richly pigmented skin like this patient making sun damage related skin lesions a rarity in these individuals.<sup>15-17</sup> Lichen planus-like keratosis occurs in individuals aged 28 to 87 years and is commonly located on the trunk, as was the case with the patient although he is younger than the so far documented age of occurrence in adults.<sup>3-5,7</sup> Other anatomical sites affected by LPK are the extremities, face and neck.<sup>3,5,8-10</sup> Although LPK occurs more in females, it does occur in males like the index case.<sup>2,3,5,6</sup> Frequently, LPK is a solitary erythematous, pigmented macule, papule or plaque although multiple lesions have been reported.<sup>1,3,6</sup>

The pathogenesis of LPK is unclear but it is thought to be due to a chronic inflammatory reaction leading to regression of a benign epithelial lesion such as seborrheic keratosis or solar keratosis.<sup>14,18</sup> Lichen planus-like keratosis is frequently misdiagnosed clinically like in this patient as either a cutaneous malignancy or an inflammatory disease and this makes a histological evaluation important in its diagnosis.<sup>3,8,11</sup> Commonly, LPK is misdiagnosed as basal cell carcinoma, solar lentigo, actinic keratosis, melanoma, kaposi's sarcoma, lichen planus, seborrheic keratosis.<sup>3,4,8-10</sup>

Various modalities of evaluation of LPK (invasive and non-invasive) are documented. The non-invasive modalities include dermoscopy and reflectance confocal microscopy (RCM).<sup>3,7,12</sup> Dermoscopy features include light brown pseudonetwork, structure less pink-white areas, annular granular structures, scales, gray pseudo-network composed of diffuse blue-gray dots, and short serpentine vessels.<sup>2,7,12,13</sup> Dermoscopy was however, not done in the patient.

Reflectance confocal microscopy is an emerging noninvasive technique in the histo-morphological analysis of skin lesions including LPK.<sup>13</sup> Reflectance confocal microscopy features typical of LPK are honeycomb pattern with millia-like cysts, comedo-like openings, absence of pagetoid and dendritic cells, presence of elongated cords corresponding to acanthosis and inflammatory infiltrate at the dermo-epidermal junction.<sup>13,14</sup> Reflectance confocal microscopy is however, not yet available in Nigeria.

Histopathological evaluation apart from diagnosing LPK allows differentiation from other cutaneous lesions. Features consistently seen in LPK are parakeratosis, hyperkeratosis, hypergranulosis, band-like lichenoid infiltrates, basal vacuolization, necrotic keratinocytes and pigment incontinence.<sup>3,5,6</sup> These features except for parakeratosis were seen in the patient. Solar elastosis and solar lentigo which are sun induced lesions is seen in the adjacent skin in Caucasians with sun damaged skin.<sup>1,3,5,10</sup> Normal adjacent skin was observed in this particular patient with richly pigmented skin. Lichen planus-like keratosis shares a lot of histological features with other lichenoid diseases. The presence of plasma cells, eosinophils, neutrophils, parakeratosis, extravasation of red blood cells though uncommon and LPK being a solitary lesion differentiates it from lichen planus.<sup>3,5,6</sup> Oedema, presence of solar elastosis and absence of perivascular infiltrates, follicular plugging differentiates LPK from lupus

erythematosus.<sup>10</sup> In addition, LPK histologically mimics mycosis fungoides but Pautrier microabscesses and alignment of lymphocytes along the basal layer differentiates the two.<sup>4</sup>

Spontaneous resolution occurs in some individuals who have LPK. However, modalities of treatment leading to removal of LPK lesions include excision, cryotherapy, electrosurgery, curettage and the use of imiquimod.<sup>9,12,19</sup> Lichen planus-like keratosis can re-occur after treatment.<sup>9</sup> The patient had an excisional biopsy which served as both investigation and treatment.

In conclusion, sun induced skin lesions though rare in individuals with richly pigmented skin can occur and the unwary dermatologist can be left confounded. This report has been made to draw the attention of dermatologists to the occurrence of this rare cutaneous lesion in richly pigmented skin and to highlight the importance of histopathological evaluation.

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