SKIN

RESEARCH LETTER

Diagnostic Outcomes of Clinically Diagnosed Lichen Planus-Like Keratosis

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ABSTRACT

Lichen planus-like keratosis (LPLK), also known as benign lichenoid keratosis (BLK), are pink/red-brown papules that are thought to represent regressing inflamed solar lentigo or seborrheic keratosis. Prior studies have evaluated the differential diagnosis before biopsy for histologically diagnosed LPLK/BLK; however, diagnostic outcomes and prevalence of malignancy in clinically appearing LPLK/BLK have not been reported. Here, we report a single-institution, retrospective chart review from 2013-2020 evaluating the prevalence of malignancy in a set of lesions clinically appearing as LPLK/BLK. The most common first differential diagnoses were BCC (42%) and LPLK/BLK (35%). The most common histologic diagnosis was BCC (28%), followed by LPLK/BLK (26%). Considering all lesions, 44% were diagnosed as malignant (28% BCC, 14% SCCIS, 1.4% melanoma) and 26% were diagnosed as LPLK/BLK. Conversely, considering lesions with LPLK/BLK first in the differential diagnosis, 33% had a malignant diagnosis (19% BCC, 13% SCCIS, 1% melanoma) and 36% had a diagnosis of LPLK/BLK. These results provide valuable insight into characterizing diagnostic outcomes and malignancy prevalence for clinically appearing LPLK/BLK to guide patient-centered shared decision-making.

INTRODUCTION

Lichen planus-like keratosis (LPLK), also benign lichenoid keratosis (BLK), presents in adults as pink or red-brown papules.[1,2] LPLK/BLK are thought to represent regressing inflamed solar lentigo or seborrheic keratosis and histologically appear similar to lichen planus. Given these nonspecific features, lesions may appear similar to other neoplasms, including seborrheic keratosis, solar lentigo, actinic keratosis, squamous cell carcinoma in situ (SCCIS), and basal cell carcinoma (BCC).[3,4] LPLK/BLK is a diagnosis of exclusion and is thought of as benign - when lesions are clinically diagnosed as LPLK/BLK, they are often not biopsied.[2] Prior studies have evaluated the differential diagnosis prior to biopsy for histologically diagnosed LPLK/BLK[4]; however, diagnostic outcomes and prevalence of malignancy in clinically appearing LPLK/BLK have not been reported. Here, we report a single-institution, retrospective chart review from 2013-2020 evaluating the prevalence of malignancy in a set of lesions clinically appearing as LPLK/BLK.

METHODS

Lesions included were those biopsied for histologic evaluation at our dermatopathology center with LPLK or BLK included in the differential diagnosis - 712 lesions met inclusion criteria.

RESULTS

Mean age of patients was 63, with a predominance of lesions from female patients (65%). Notably, 64% of patients had a prior history of skin cancer, including NMSC and melanoma. Lesions were commonly located on the extremities (59%) and trunk (32%). Most lesions were raised (83%). Morphologically, papules (61%) were most common, followed by plaques (22%). Regarding texture, 33% of lesions were described as scaly and 10% as shiny. LPLK was listed first in the differential diagnosis in 35% of lesions. The most common first differential diagnosis was BCC (42%), followed by LPLK/BLK (35%) (**Table 1).** The most common histologic diagnosis was BCC (28%), followed by LPLK/BLK (26%). Considering all lesions, 44% were diagnosed as malignant (28% BCC, 14% SCCIS, 1.4% melanoma), and 26% were diagnosed as LPLK/BLK. When considering only lesions in which LPLK/BLK was the first differential diagnosis, 33% of lesions had a malignant diagnosis (19% BCC, 13% SCCIS, 1% melanoma), and 36% of lesions had a diagnosis of LPLK/BLK (**Table 2**).

DISCUSSION

This study highlights the high prevalence of malignant diagnosis in this set of lesions; 44% when considering all lesions and 33% of lesions when only including those lesions with LPLK/BLK as first in the differential diagnosis.

CONCLUSION

Overall, this study suggests that lesions clinically suspicious for LPLK/BLK may warrant additional consideration for biopsy given the high prevalence of malignant histologic diagnosis after biopsy.
Limitations of this study include its retrospective nature, the inability to control what variable(s) led to the decision to biopsy, the time frame until decision to biopsy, and whether the order of the differential diagnosis supplied by the clinician was necessarily in preferential order.

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References:

1. Liopyris K, Navarrete-Dechent C, Dusza SW, et al. Clinical and dermoscopic features associated with lichen planus-like keratoses that undergo skin biopsy: A single-center, observational study. *Australas J Dermatol*. 2019;60(2):e119-e126. doi:10.1111/AJD.12955
2. Watanabe S, Sawada M, Dekio I, Ishizaki S, Fujibayashi M, Tanaka M. Chronology of lichen planus-like keratosis features by dermoscopy: a summary of 17 cases. *Dermatol Pract Concept*. 2016;6(2). doi:10.5826/DPC.0602A06
3. Morgan MB, Stevens GL, Switlyk S. Benign lichenoid keratosis: a clinical and pathologic reappraisal of 1040 cases. *Am J Dermatopathol*. 2005;27(5):387-392. doi:10.1097/01.DAD.0000175533.65486.84
4. Vincek V. Lichen planus-like keratosis: clinicopathological evaluation of 1366 cases. *Int J Dermatol*. 2019;58(7):830-833. doi:10.1111/IJD.14358

Table 1. First Clinical Differential of Lesions with LPLK/BLK in the Differential Diagnosis

First in Differential Diagnosis	Cases (n)	Percentage of cases (%)
BCC	301	42.3
BLK/LPLK	249	35.0
SCCIS	65	9.1
BCC/SCC	27	3.8
SK	18	2.5
AK	13	1.8
NMSC	11	1.5
MELANOMA	10	1.4
NEVUS	3	0.4
SCC	3	0.4
LENTIGO	2	0.3
VV	2	0.3
ACANTHOMA	1	0.1
ECZEMA	1	0.1
INFLAMMATORY	1	0.1
LICHEN AMYLOID	1	0.1
MF	1	0.1
UNSPECIFIED NEOPLASM	1	0.1
POROKERATOSIS	1	0.1
PIH	1	0.1

BCC = basal cell carcinoma; BLK/LPLK = benign lichenoid keratosis/lichen planus-like keratosis; SCCIS = squamous cell carcinoma in situ; SCC = squamous cell carcinoma; SK = seborrheic keratosis; AK = actinic keratosis; NMSC = non-melanoma skin cancer; VV = verruca vulgaris; MF = mycosis fungoides; PIH = post-inflammatory hyperpigmentation.

Table 2. Histopathologic Diagnosis of all Lesions with LPLK/BLK in the Differential Diagnosis

Diagnosis	Cases (n)	Percentage of cases (%)
ALL LESIONS	712	100
BCC	201	28.3
BLK/LPLK	182	25.6
SCCIS	100	14.0
AK	70	9.8
SK	43	6.0
MELANOMA	10	1.4
SD	9	1.3
NEVUS	7	1.0
POROKERATOSIS	7	1.0
ACANTHOMA	6	0.8
VV	6	0.8

SCAR	5	0.7
STASIS CHANGES	5	0.7
SCC	3	0.4
PD	3	0.4
DERMATOPHYTOSIS	2	0.3
OTHER BENIGN	53	7.4
LESIONS WITH BLK/LPLK FIRST IN DDX	249	35.0
BLK/LPLK	91	36.5
BCC	48	19.3
SCCIS	32	12.9
SK	17	6.8
POROKERATOSIS	3	1.2
SD	3	1.2
MELANOMA	2	0.8
NEVUS	2	0.8
SCC	1	0.4
OTHER BENIGN	50	20.0

BCC = basal cell carcinoma; BLK/LPLK = benign lichenoid keratosis/lichen planus-like keratosis; SCCIS = squamous cell carcinoma in situ; SCC = squamous cell carcinoma; SK = seborrheic keratosis; AK = actinic keratosis; SD = spongiotic dermatitis; PD = psoriasiform dermatitis; DDX = differential diagnosis. Other benign includes hyperpigmentation, dermatofibroma, inflamed verrucous keratosis, lichen simplex chronicus, post inflammatory pigment alteration, solar elastosis, solar lentigo, telangiectasias, tumor of the follicular infundibulum, verruca plana, verruca vulgaris, and verrucous epidermal hyperplasia.