

# A case of perianal bowenoid papulosis: dermoscopic features and a review of previous cases

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## Abstract

Bowenoid papulosis is an uncommon precancerous condition of the genitalia caused by oncogenic human papillomavirus types. It is seen in young, sexually active adults and histologically resembles Bowen's disease. Dermoscopy is useful in the diagnosis of both pigmented and non-pigmented skin lesions, but dermoscopic diagnostic accuracy criteria have not yet developed in diseases such as bowenoid papulosis and Bowen's disease. This case report analyzes the dermoscopic findings of bowenoid papulosis in the literature with the aim of increasing the frequency of use of dermoscopy in the diagnosis of bowenoid papulosis in clinical practice.

**Keywords:** bowenoid papulosis, precancerous conditions, dermoscopy, papillomavirus infections

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## Introduction

Bowenoid papulosis (BP) corresponds with a multifocal intraepithelial neoplasia in the anogenital region and is most frequently seen in young adults. The male-to-female ratio for this condition is equal. Clinically, it most commonly presents with multiple well-demarcated hyperpigmented verrucous papules and plaques (1, 2). BP is frequently associated with human papillomavirus (HPV) infections, and in particular with HPV types 16 and 18, which are the oncogenic high-risk types (2).

Histopathologically, it is characterized by koilocytosis, enlarged polymorphic and hyperchromatic nuclei, and abnormal mitosis and hyper- or parakeratosis with a collection of melanin of various amount (1). Although the histopathologic findings are similar to Bowen's disease (BD), the distinction is based on differentiation, the degree of cellular atypia, and follicular involvement. In contrast to BD, these histopathologic changes are more focal and less pronounced, and follicular involvement is not seen (3).

Dermoscopy is useful in the diagnosis of both pigmented and non-pigmented, or melanocytic and non-melanocytic, skin lesions by revealing the pigmentation pattern and vascular morphology, which cannot be seen by the naked eye. Recent studies have mainly focused on the dermoscopic separation of melanoma and melanocytic nevi. However, non-melanocytic pigmented lesions are common in clinical practice.

Herein, we describe the dermoscopic findings in a patient with perianal BP through a literature review of previously reported cases.

## Case report

A 46-year-old woman presented with multiple, small, brown-gray papules on the perianal region with a duration of nearly 2 months (Fig. 1). Her HIV-1/2 tests and syphilis serology were negative, but she had been a hepatitis B carrier for 10 years. Two skin biopsies of

the perianal region were performed to establish a differential diagnosis. A dermoscopic examination was also performed, which revealed brown-gray structureless areas with linearly distributed brown-gray dots and glomerular vessels in these homogeneous structures (Fig. 2). A microscopic examination revealed epidermis with varying degrees of hyperplasia and cytologic atypia with hyperchromasia and nuclear vesiculation, as well as abnormal mitosis (Fig. 3). The histological findings were multifocal, and no follicular involvement was observed. A real-time PCR test—the Cobas 4800 HPV test (Roche Diagnostics, GmbH, Mannheim, Germany)—was used to detect the HPV type. This resulted in the identification of HPV 18. Based on these clinical and histopathologic findings, the patient was diagnosed with BP, and topical imiquimod treatment was initiated. At the 3rd week of treatment, treatment was stopped due to intense erythema in the perianal area. After the skin reaction became moderate, treatment with imiquimod cream was continued. At the end of the 2nd month, almost complete improvement was achieved in the lesions.



Figure 1 | Brown-gray papular lesions on the perianal region.

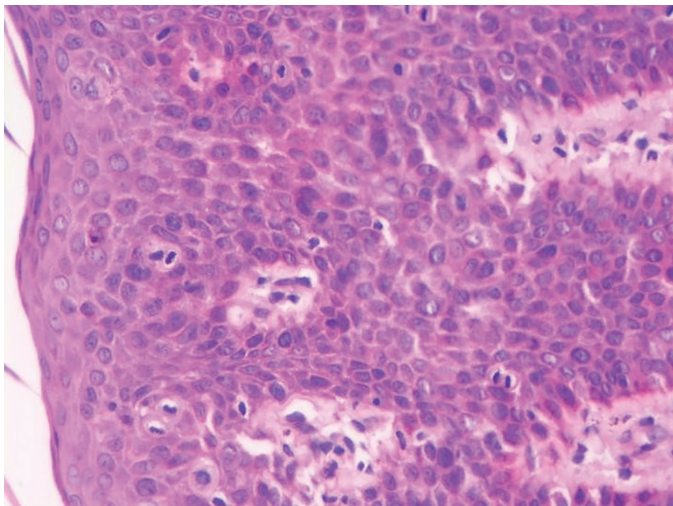
**Table 1** | Dermoscopic findings in bowenoid papulosis according to publications.

Reference (number)	Case	Sex	Age	Location	Clinical appearance	Dermoscopy findings
Vaccari et al. (5)	1	M	45	Penis (shaft)	Multiple pigmented papules with annular distribution	– Brown-gray dots in lobulated structures and linear
	2	F	57	Vulva (labium minus)	Hyperkeratotic, round plaque	– Round, brown-gray inhomogeneous lesion
	3	F	65	Pubis	Hyperkeratotic plaque	– Central whitish homogeneous area
Lin et al. (6)	1	M	–	Penis	–	– Central, round, brown area, pseudo-cerebriform pattern
	1	F	35–54	Vulva (labium majus)	Solitary, flat papule	– Whitish structureless surrounding halo
	2	F	35–54	Vulva (labium minus)	Solitary, elevated plaque	– Partial pinkish homogeneous area
Dong et al. (8)	1	M	–	–	–	– Eccentric, light brown pigmentation
	2	M	–	–	–	– Homogeneous pattern
	2	M	–	–	–	– Brown-gray structureless area
Marcucci et al. (9)	1	M	54	Penis (shaft)	Multiple, brown-gray, small papules and small papillomatous patches	– Glomerular vessels, clustered and linear
	2	M	31	Penis (shaft)	Multiple, brown-gray, small papules	– Multiple whitish-red exophytic papillary structures
	2	M	31	Penis (shaft)	Multiple, brown-gray, small papules	– Lacked pigmentation
Chan et al. (10)	1	M	62	Penis (shaft)	Brown verrucous papules and plaque	– Central glomerular and hairpin vessels
	2	M	54	Penis (shaft)	Multiple erythematous hyperkeratotic plaques	– Unspecified global dermoscopic pattern
	1	F	46	Perianal	Multiple, brown-gray, small papules	– Pigmentation
Our case	1	F	46	Perianal	Multiple, brown-gray, small papules	– Mild keratosis
	2	M	54	Penis (shaft)	Multiple erythematous hyperkeratotic plaques	– Unspecified global dermoscopic pattern
	2	M	54	Penis (shaft)	Multiple erythematous hyperkeratotic plaques	– Pigmentation
Our case	1	F	46	Perianal	Multiple, brown-gray, small papules	– Dotted vessels
	2	M	31	Penis (shaft)	Multiple, brown-gray, small papules	– Pigmented papillomatous surface
	2	M	31	Penis (shaft)	Multiple, brown-gray, small papules	– Brown-gray dots, linear at periphery
Our case	1	F	46	Perianal	Multiple, brown-gray, small papules	– Widespread dotted vessels
	2	M	54	Penis (shaft)	Multiple erythematous hyperkeratotic plaques	– Keratotic surface
	2	M	54	Penis (shaft)	Multiple erythematous hyperkeratotic plaques	– Brown-gray dots, linear
Our case	1	F	46	Perianal	Multiple, brown-gray, small papules	– No vascular pattern
	2	M	54	Penis (shaft)	Multiple erythematous hyperkeratotic plaques	– Mosaic pattern, some linear areas at periphery
	2	M	54	Penis (shaft)	Multiple erythematous hyperkeratotic plaques	– Brown-gray dots and globules
Our case	1	F	46	Perianal	Multiple, brown-gray, small papules	– White structureless area
	2	M	54	Penis (shaft)	Multiple erythematous hyperkeratotic plaques	– White lines
	2	M	54	Penis (shaft)	Multiple erythematous hyperkeratotic plaques	– No vascular pattern
Our case	1	F	46	Perianal	Multiple, brown-gray, small papules	– Pink structureless area
	2	M	54	Penis (shaft)	Multiple erythematous hyperkeratotic plaques	– Crown, dotted, and linear vessels
	2	M	54	Penis (shaft)	Multiple erythematous hyperkeratotic plaques	– Homogeneous pattern
Our case	1	F	46	Perianal	Multiple, brown-gray, small papules	– Brown-gray structureless area
	2	M	54	Penis (shaft)	Multiple erythematous hyperkeratotic plaques	– Brown-gray dots, linear
	2	M	54	Penis (shaft)	Multiple erythematous hyperkeratotic plaques	– Glomerular vessels

M = male, F = female.



**Figure 2** | Brown-gray dots arranged in a linear distribution (arrows) and wide-spread glomerular vessels (triangles) (original magnification 20×).



**Figure 3** | Atypical and dyskeratotic keratinocytes with mitotic figures (H&E, 40×).

## Discussion

Although BP typically shows a benign prognosis, similar to genital warts, this condition histopathologically shares identical histolog-

ical features with squamous cell carcinoma (SCC) *in situ* (1). The course of BP is variable in that the papules may regress, persist, recur, or progress to BD or invasive SCC in certain cases (2, 4). The risk of developing BD or SCC is higher in immunocompromised patients with BP (5). Because the likelihood of malignant transformation is between 1 and 2.6%, early diagnosis and follow-up are critical (2). It is also worth noting that dermoscopy has recently gained importance during the early and differential diagnosis of BP.

Melanoma, pigmented melanocytic nevi, and pigmented non-melanocytic lesions (genital warts, lichen planus, seborrheic keratosis, BD, basal cell carcinoma, and SCC) should be considered during the differential diagnosis of BP (4, 5). Dermoscopic diagnostic accuracy criteria have not yet developed in diseases such as BD, pigmented lichen planus, and BP. Nonetheless, dermoscopy can prove useful in differentiating BP from other conditions, such as genital warts, lichen planus, seborrheic keratosis, basal cell carcinoma, and even melanoma. Although it is rather difficult to distinguish BP from pigmented BD using dermoscopy, the patient's age and medical history can help differentiate between these two entities. Older age and chronic irritation anamnesis favor the diagnosis of pigmented BD (2). The final diagnosis of BP is histopathological (5).

Lesions are highly contagious, and patients with BP and their sexual partners should be monitored periodically because of the increased risk of developing SCC and cervical or vulvar neoplasia. Treatment of BP is recommended despite the low risk of malignant transformation (2). Therapeutic options include local destructive or ablative measures such as cryosurgery, electrodesiccation, laser vaporization, and surgical excision. Other modalities include topical use of ointments and creams containing 5-FU, podophyllin, retinoic acid, cidofovir, and imiquimod (1).

The dermoscopic findings of BP in studies published as case reports and small case series are summarized in Table 1 (5–10). Our findings are partially similar to previously reported cases. The most common dermoscopic findings include brown and gray dot structures with linear extension and glomerular and dotted vascular structures.

In summary, we analyzed the dermoscopic findings of BP in the literature with the aim of increasing the use of dermoscopy in the diagnosis of BP in clinical practice. However, because clinical BP lesions can be exophytic, warty, or papillary structures that are pigmented or skin-colored, and their dermoscopic appearance may differ from their clinical appearance, there are no specifically characterized dermoscopic findings of BP in the literature. Therefore, identification of different dermoscopic features in BP is required, as well as larger case series to help characterize these features.

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