Dermatology Practical & Conceptual

All Eyes on Dermoscopy: Features of Benign Conjunctival Melanocytic Lesions

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ABSTRACT

Introduction: Conjunctival nevi (CN) represent the majority of benign conjunctival melanocytic lesions (CML), followed by complexion-associated melanosis (CAM). Noninvasive methods like dermoscopy could be of importance to increase diagnostic accuracy in this biopsy-sensitive area. Because of the unique anatomy of the conjunctiva, dermoscopic findings differ significantly compared to the skin or other mucosae.

Objective: Our objective was to analyze epidemiological, clinical, and dermoscopic characteristics of benign conjunctival melanocytic lesions and to explore their correlation to total body nevus count (TBNC).

Methods: This retrospective study involved the collection and analysis of demographic data, patient information, and clinical and dermoscopic images from individuals with long-standing, stable, pigmented conjunctival lesions.

Results: A total of 30 benign conjunctival melanocytic lesions in 28 patients (female/male :18/10) with a median age of 32 (range 16–68) years were evaluated. The prevalent dermoscopic pattern was a mixed, globular, homogeneous pattern (36.6%). Clear cysts were identified via dermoscopy in 60% of the lesions, and a reticular pattern was observed in all cases involving cysts ($P<0.05$). The presence of benign CML was associated with a low TBNC (<10) in 64.3%.

Conclusions: The present study provides a detailed overview of the clinical and dermoscopic characteristics of benign CML. It highlights consistent patterns such as cyst-associated reticular features and a low TBNC among affected individuals. These findings support the clinical utility of dermoscopy as a noninvasive tool for differentiating between benign and suspicious conjunctival lesions. The observed association with low TBNC may warrant increased vigilance during ocular examination in patients with few cutaneous nevi. Prospective studies with larger cohorts are needed to confirm and extend these observations.

Introduction

Benign melanocytic conjunctival lesions consist mainly of melanocytic nevi of the conjunctiva, which account for 23–29% of conjunctival tumors [1,2] and 52% of conjunctival melanocytic lesions (CML) [3-5]. Conjunctival nevi (CN) tend to form or become evident as they acquire pigmentation during the first two decades of life [2]. Clinically, they are congenital or acquired, well-demarcated, pigmented, elevated lesions, commonly associated with intralesional cysts and intrinsic vasculature or feeder vessels [2,6,7]. They are usually located on the bulbar conjunctiva and most commonly near the limbus [2,4,8]. Localization in the fornices or palpebral conjunctiva raises suspicion of malignancy and warrants biopsy [9,10]. Less than 1% of CN has the potential to undergo malignant transformation into conjunctival melanoma [4], whereas cutaneous nevi exhibit an even lower risk of progression, of less than 0.0005% annually [11]. The differential diagnosis includes a spectrum of benign and premalignant or malignant conditions. Complexion-associated melanosis (CAM) is also a common, bilateral condition of flat and usually multifocal pigmentation observed mainly in darker-skinned individuals. Other conditions to be considered are pigmentation associated with systemic pathologies, primary acquired melanosis (PAM) with or without atypia, ocular melanocytosis, and conjunctival melanoma (CM). Management typically involves periodic observation with photographic documentation.

Dermoscopy is a fast, non-invasive imaging technique that significantly improves the diagnostic accuracy in melanocytic lesions when performed by trained dermatologists [12,13]. Dermoscopic criteria have been described for most cutaneous tumors as well as for mucosal lesions for most anatomical sites. However, the dermoscopic characteristics of benign conjunctival proliferations have not been described extensively. This disparity may contribute to the observed differences in the rates of malignant transformation between the two.

Objectives

The unique anatomical and functional characteristics of the conjunctiva present distinct diagnostic and clinical management challenges. By utilizing dermoscopy, this study aimed to address the gap in understanding the dermoscopic features of CML, an area where the existing literature remains limited. The primary objective of this study was to describe the epidemiological, clinical, and dermoscopic characteristics of benign CML and to explore their association with total body nevus count (TBNC), contributing to a more comprehensive understanding of these lesions.

Methods

Twenty-eight patients with thirty CML were included in this retrospective observational cohort study conducted by the 2nd Department of Dermatology-Venereology of "Attikon" General University Hospital of Athens between 1 May 2021 and 31 December 2022. An institutional scientific board and ethics committee approval was obtained (98/17-02-2023). All subjects provided signed informed consent. The inclusion criteria included patients with a long-standing, stable course of pigmented conjunctival lesions, defined as a duration of at least five years. The exclusion criteria were: i) age <15 years old; ii) patients with new or changing lesions; iii) history of ocular malignancy; iv) recurrent lesions following previous interventions; v) patients who did not consent to data collection for the purposes of this study. Patients age <15 years were excluded as childhood nevi often have unique histological features, complicating malignancy exclusion [14]. Three subjects were excluded based on these criteria. All selected patients underwent total body skin and ocular dermoscopic examination. Demographic and clinical characteristics were evaluated and recorded, including age, sex, Fitzpatrick skin type (FST I-VI), TBNC (categorized as <10 nevi, 10-50 nevi, >50 nevi), global dermoscopic pattern of cutaneous nevi (reticular, globular, homogeneous, or multicomponent), history of conjunctival lesion (in years), anatomic localization of the tumor (juxtalimbal, other bulbar, palpebral, forniceal, plica semilunaris, caruncular, or multifocal) and quadrant when juxtalimbal or other bulbar (temporal, nasal, superior, inferior, or multifocal), primary morphology (flat or elevated), lesion color (light brown, dark brown, black, or amelanotic), and the presence or absence of intralesional cysts (clear, cystic structures of various size and distribution among the lesion) and/or feeder vessels. Additionally, a detailed history was obtained, including sun exposure habits (occupational and recreational sun exposure, sunburns before the age of 18 years, solarium use), personal and family history of skin cancer, and any previous ocular pathology or trauma. Clinical and dermoscopic images of the lesions were captured using a Nikon J1 camera (Tokyo, Japan) and a handheld DermLite Hybrid II dermatoscope (DermLite Inc., San Juan Capistrano, CA, USA). The polarized mode enabled contactless visualization and documentation. Two authors evaluated all the dermoscopic images (DS and PT) for specific characteristics based on pattern analysis method. Dermoscopic features analyzed for each lesion included the dermoscopic pattern (reticular, globular, or homogeneous), the number of patterns, the lesion color (light brown, dark brown, or black), the number of colors, and the presence or absence of intralesional cysts [15, 16]. Statistical analysis was performed with Stata/IC version 15.1 (StataCorp, Lakeway Drive, TX, USA). For continuous variables, the mean and standard deviation (SD) are reported for normally distributed data, while the median, 25th and 75th percentiles are used for non-normally distributed data. The range is reported for all variables. For categorical variables the frequencies and percentages were calculated. The continuous variables were tested for normality using a Shapiro-Wilk test. Chi-squared and Fisher's exact tests were applied for the comparison of categorical variables. Where appropriate, 95% confidence intervals (CI) were calculated to provide an estimate of precision. A p-value <0.05 was considered to be statistically significant.

Results

Our sample consisted of 28 patients with 30 CML, of whom 18 (64.3%, 95% CI: 44.07–81.36) were females and 10 (35.7%, 95% CI: 18.64–55.93) were males. In our cohort, we observed a higher incidence of females, with a female-to-male ratio of 1.8:1. The age of patients ranged from 16 to 68 years, and the median age at observation was 32 years (range: 23.5–51.5). All patients presented with solitary lesions, except for two patients who were diagnosed with two lesions each. All lesions were self-detected by the patients. The distribution of Fitzpatrick Skin Types (FST) was as follows: FST II (21.4%, N=6; 95% CI: 8.30–40.95), FST III (50.0%, N=14; 95% CI: 30.65–69.35), and FST IV (28.6%, N=8; 95% CI: 13.22–48.67), with no case of FST I, V, or VI observed.

Notably, none of the patients presented with a total body nevus count (TBNC) >50. The majority, 64.3% (N=18; 95% CI: 44.07–81.36), had a TBNC <10, while 35.7% (N=10; 95% CI: 18.64–55.93) had a TBNC between 10 and 50. Recreational sun exposure was reported by 85.7% (N=24; 95% CI: 67.33–95.97) of participants, and 17.8% (N=5; 95% CI: 6.06–36.89) reported chronic occupational sun exposure. Additionally, 46.4% (N=13; 95% CI: 27.51–66.13) experienced at least one sunburn (grade 2 or higher) during childhood or adolescence, and 10.7% (N=3; 95% CI: 2.27–28.23) reported solarium use. A personal history of cutaneous melanoma (MM) was identified in 7.1% (N=2; 95% CI: 0.88–23.50) of participants, while another 7.1% (N=2; 95% CI: 0.88–23.50) reported a history of non-melanoma skin cancer (NMSC). Family history revealed cutaneous MM in 14.3% (N=4; 95% CI: 4.03–32.67) and NMSC in 17.9% (N=5; 95% CI: 6.06–36.89). Notably, no participant reported a prior history of ocular pathology (Table 1).

The mean duration of the conjunctival lesion was 20 years (SD: 10.72, range: 5–50).

Clinical Findings

Benign CML were most frequently located in the juxtalimbal area (53.3%, N=16; 95% CI: 34.33–71.66) and the temporal quadrant (60%, N=18; 95% CI: 40.60–77.34). No lesion was observed in the palpebral or forniceal conjunctiva. Morphologically, the majority of the lesions were flat (60%, N=18; 95% CI: 40.60–77.34), with the remainder being partly elevated (40%, N=12; 95% CI: 22.66–59.40). All lesions were pigmented, and regarding color variations, the coexistence of light and dark brown was mostly observed (46.6%, N=14; 95% CI: 28.34–65.67). Intralesional cysts were clinically identified in 13.3% of the cases (N=4). Additional features (intralesional cysts or vessels) were absent in 63.3% of the cases (N=19; 95% CI: 43.86–80.07). A summary of all clinical parameters is shown in Table 2.

The differential diagnosis for these lesions, depending on clinical history and lesion characteristics, included conjunctival nevi or CAM. Definite clinical diagnoses were determined unanimously by two investigators (DS and PT), considering factors such as age at presentation, FST, multifocality, lesion color, lesion thickness, and the presence of cysts. The diagnoses were 93.3% (N=28; 95% CI: 77.93–99.18) nevus and 6.7% (N=2; 95% CI: 0.82–22.07) CAM.

Prevalent Dermoscopic Features

All dermoscopic characteristics studied are reported in Table 3. Most conjunctival lesions displayed a mixed globular and homogeneous pattern (36.70%, N=11; 95% CI:

Table 1. Descriptive Statistics of Patient Demographics and Lesion characteristics.

Characteristics	N (%)	95% Confidence interval
Sex		
Male	10 (35.71)	18.64 –55.93
Female	18 (64.29)	44.07– 81.36
Fitzpatrick skin type		
I	0	0 – 12.34*
II	6 (21.43)	8.3 – 40.95*
III	14 (50)	30.65 – 69.35*
IV	8 (28.57)	13.22 – 48.67*
Total body nevus count		
<10	18 (64.29)	44.07 – 81.36
10-50	10 (35.71)	18.64 – 55.93
>50	0 (0)	
Personal history of cutaneous melanoma		
Yes	2 (7.14)	0.88 – 23.5
No	26 (92.86)	76.5 – 99.12
Personal history of NMSC		
Yes	2 (7.14)	0.88 – 23.5
No	26 (92.86)	76.5 – 99.12
Family history of cutaneous melanoma		
Yes	4 (14.29)	4.03 – 32.67
No	24 (85.71)	67.33 – 95.97
Family history of NMSC		
Yes	5 (17.86)	6.06 – 36.89
No	23 (82.14)	63.11 – 93.94
Sunburns (grade >2) before 18 years old		
Yes	13 (46.43)	27.51 – 66.13
No	15 (53.57)	33.87 – 72.49
Occupational sun exposure		
Yes	5 (17.86)	6.06 – 36.89
No	23 (82.14)	63.11 – 93.94
Recreational sun exposure		
Yes	24 (85.71)	67.33 – 95.97
No	4 (14.29)	4.03 – 32.67
Solarium use		
Yes	3 (10.71)	2.27 – 28.23
No	25 (89.29)	71.77 – 97.73
Ocular pathology		
Yes	0 (0)	0 – 12.34*
No	28 (100)	87.66 – 100*

NMSC, non-melanoma skin cancer.
* One-sided 97.5% confidence interval.

19.93–56.14), followed by homogeneous (26.70%, N=8; 95% CI: 12.28–45.89), reticular (13.30%, N=4; 95% CI: 3.76–30.72), and mixed reticular and homogeneous patterns (13.30%, N=4; 95% CI: 3.76–30.72). One lesion (3.30%, N=1; 95% CI: 0.08–17.22) exhibited a reticular and globular combination. Each lesion displayed either one or two dermoscopic patterns: 46.70% (N=14; 95% CI: 28.34–65.67) had a single pattern, while 53.30% (N=16; 95% CI: 34.33–71.66) showed two. No lesion exhibited more than two dermoscopic patterns.

In terms of pigmentation, all lesions exhibited brown coloration. Specifically, 30% (N=9; 95% CI: 14.73–49.40) were light brown, 10% (N=3; 95% CI: 2.11–26.53) were dark brown, and 50% (N=15; 95% CI: 31.30–68.70)

Table 2. Clinical Characteristics of Benign Conjunctival Melanocytic Lesions.

Clinical Characteristics	N (%)	95% Confidence interval
Eye		
Right	14 (46.67)	28.34 – 65.67
Left	16 (53.33)	34.33 – 71.66
Anatomical location		
Juxtalimbal	16 (53.33)	34.33 – 71.66
Bulbar	12 (40)	22.66 – 59.4
Bulbar/Multifocal	2 (6.67)	0.82 – 22.07
Palpebral	0 (0)	
Forniceal	0 (0)	
Quadrant		
Temporal	18 (60)	40.6 – 77.34
Nasal	5 (16.67)	5.64 – 34.72
Superior	3 (10)	2.11 – 26.53
Inferior	2 (6.67)	0.82 – 22.07
Multifocal	2 (6.67)	0.82 – 22.07
Primary morphology		
Macule	18 (60)	40.6 – 77.34
Papule or partly elevated	12 (40)	22.66 – 59.4
Color		
Light brown	10 (33.33)	17.29 – 52.81
Dark brown	5 (16.67)	5.64 – 34.72
Black/light brown	1 (3.33)	0.08 – 17.22
Light/dark brown	14 (46.67)	28.34 – 65.67
No pigment	0 (0)	
Additional features		
Intralesional Cysts	1 (3.33)	0.08 – 17.22
Feeder vessels	7 (23.33)	9.93 – 42.28
Intralesional cysts/ feeder vessels	3 (10)	2.11 – 26.53
Absent	19 (63.33)	43.86 – 80.07
Clinical diagnosis		
Nevus	28 (93.33)	77.93 – 99.18
Complexion-associated melanosis	2 (6.67)	0.82 – 22.07

showed both light and dark brown. Additionally, black pigmentation was noted in 10% (N=3; 95% CI: 2.11–26.53) of cases. None of the lesions demonstrated more than three colors. Uniform pigmentation with a single color was observed in 40% (N=12; 95% CI: 22.66–59.40) of lesions.

Intralesional cysts were dermoscopically identified in 60% (N=18; 95% CI: 40.60–77.34) of lesions, whereas 40% (N=12; 95% CI: 22.66–59.40) showed no cyst (Figure 1). Notably, all lesions with a reticular dermoscopic pattern exhibited cysts, indicating a statistically significant association ($P<0.05$; Figure 2).

Regarding the global dermoscopic pattern of cutaneous nevi, the reticular pattern was most frequent (46.70%, N=14; 95% CI: 28.34–65.67), followed by globular (23.30%, N=7; 95% CI: 9.93–42.28), multicomponent (16.70%, N=5; 95% CI: 5.64–34.72), and homogeneous (13.30%, N=4; 95% CI: 3.76–30.72) patterns.

Discussion

Our findings regarding demographics and clinical characteristics are comparable to a relevant previous extensive study on 410 conjunctival nevi conducted by Shields et al. [2]. The mean age at the time of initial diagnosis was specified as 32 years in both studies, with a mean history of 10 years reported by Shields et al. and 20 years in our population. In our sample, 40% of the lesions were located on the bulbar conjunctiva, with 53.3% being juxtalimbal. In comparison, Shields et al. reported a bulbar location in 72% of cases, including lesions near the limbus. Gerner et al., in their series of 343 conjunctival nevi in Denmark, reported bulbar lesions in 33% of cases and juxtalimbal lesions in 27% [7]. Temporal (60%) and nasal (16.7%) quadrants were involved more than were the superior and inferior, consistent with previously published findings [2,16]. No lesion was identified in

Table 3. Dermoscopic Characteristics of Benign Conjunctival Melanocytic Lesions.

Dermoscopic Characteristics	N (%)	95% Confidence interval
Dermoscopic pattern		
Globular	2 (6.67)	0.82 – 22.07
Homogeneous	8 (26.67)	12.28 – 45.89
Reticular	4 (13.33)	3.76 – 30.72
Globular & homogeneous	11 (36.67)	19.93 – 56.14
Reticular & homogeneous	4 (13.33)	3.76 – 30.72
Reticular & Globular	1 (3.33)	0.08 – 17.22
Number of patterns		
1	14 (46.67)	28.34 – 65.67
2	16 (53.33)	34.33 – 71.66
Color		
Light brown	9 (30)	14.73 – 49.4
Dark brown	3 (10)	2.11 – 26.53
Light/dark brown	15 (50)	31.3 – 68.7
Black/light/dark brown	3 (10)	2.11 – 26.53
Number of colors		
1	12 (40)	22.66 – 59.4
2	15 (50)	31.3 – 68.7
3	3 (10)	2.11 – 26.53
Intralesional cysts		
Yes	18 (60)	40.6 – 77.34
No	12 (40)	22.66 – 59.4
Global dermoscopic pattern		
Reticular	14 (46.67)	28.34 – 65.67
Globular	7 (23.33)	9.93 – 42.28
Homogeneous	4 (13.33)	3.76 – 30.72
Multicomponent	5 (16.67)	5.64 – 34.72

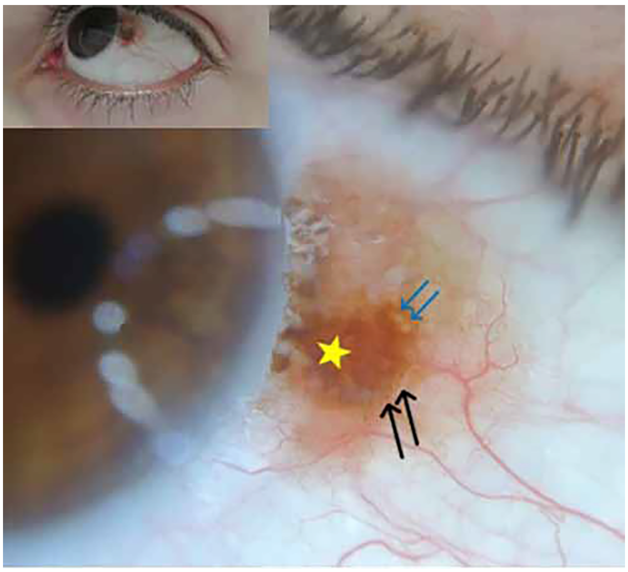

Figure 1. Conjunctival nevus with characteristic intralesional cysts (blue arrows) and mixed dermoscopic pattern: homogeneous (yellow asterisk) and globular (black arrows).

the palpebral or forniceal conjunctiva, nor did any show corneal involvement, features suggestive of the benign nature of the studied sample [9,10].

Different acquired conjunctival nevi types include junctional, compound, and subepithelial nevi, similar to the classification of the cutaneous nevi [8]. CN are constantly evolving with age. Junctional nevi, emerging in childhood and adolescence, originally derive from a benign proliferation of melanocytes in the junction of the epithelium [17]. During the second and third decades of life, the nevus cells begin to recede to the underlying stroma, causing the elevation of the lesions. Parts of the epithelium, including squamous and goblet cells, are driven downwards as well, protruding in the substantia propria and forming the clear cysts [8,18]. The compound nevus stage is achieved when nevus cells are located in both the epithelial and subepithelial tissues. A subepithelial nevus, corresponding to cutaneous intradermal nevus, arises when the intraepithelial component is eliminated [8,18]. Intralesional cysts represent

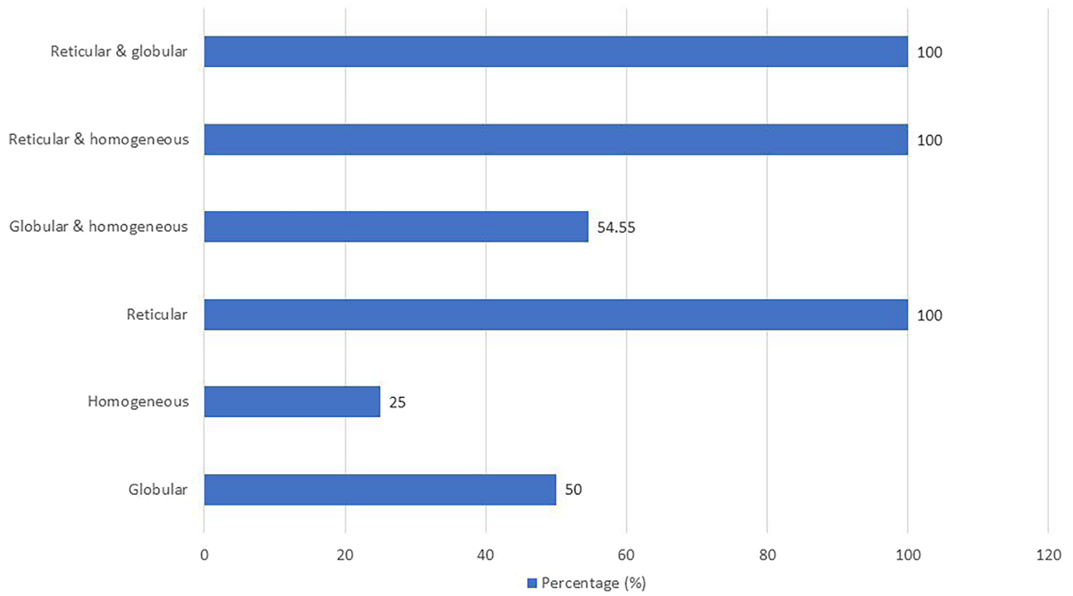

Figure 2. Presence of intralesional cysts across various dermoscopic patterns.

an important benign feature of CN, particularly compound nevi, and are extremely rare in PAM or CM [8]. In our study, cysts were recognized clinically in 13.3%, in contrast with previously published studies, which describe a higher incidence, in 50–65% of cases [2,16,19].

In our cohort, we identified patients with benign CML to present with a low TBNC. This observation is, to the best of our knowledge, reported for the first time and raises the hypothesis that these lesions may arise from a different genetic background compared to those of cutaneous origin. Although molecular data are limited, studies indicate that up to 50% of conjunctival nevi harbor BRAF V600E mutations [20]. This is directly comparable to acquired cutaneous nevi [20]. Accordingly, the possible pathway leading to the development of CML and their potential parallels with the development of acquired cutaneous melanocytic nevi remains to be elucidated in the future. Furthermore, increased awareness should be raised regarding ocular examination and follow-up for these individuals, who are less likely to be under dermatological surveillance due to their low number of cutaneous nevi.

Limited literature relevant to the dermoscopy of conjunctival lesions is available, and no previous study has examined the features of benign CMLs alone. The small number of published reports and the unique anatomy of conjunctival mucosa makes the terminology and dermoscopic criteria quite perplexing. Cinotti et al. were the first to publish a dermoscopic analysis of 147 conjunctival tumors of both benign and malignant nature [21]. Kaçar et al., in their study, explored the utility of dermoscopy in a more limited sample size of 20 conjunctival infiltrations [22]. Two more recent publications from Dębicka-Kumela et al. mainly concern the malignant dermoscopic characteristics and an algorithm for the differentiation between CM and other CML [23,24].

As far as the dermoscopic pattern is concerned, our findings align with those of Cinotti et al. [21], with the mixed pattern being the most prevalent in the nevi group. However, a direct comparison of specific mixed pattern variations is not possible, as Cinotti et al. did not report exact incidences [21]. A homogeneous (structureless) pattern was identified in 76.7% of our cases, closely matching the 83% reported by Cinotti et al. [21], making it the most frequently observed pattern, either alone or in combination with others. While no reticular pattern was noted in the cohort of Cinotti et al. [21], we observed it in 29.9% of the lesions in our sample. This might be explained by the unique conjunctival anatomy, which includes a flat stromal-epithelial junction, unlike the rete ridge pattern of the epidermis seen in cutaneous nevi. From our point of view, the reticular pattern observed in conjunctival lesions likely emerges from the alternation of pigmented areas, forming a grid of thin brown lines and clear intralesional cysts, appearing as hypopigmented holes (Figure 3). Interestingly, all the cases in our study that exhibited a reticular pattern also presented with cysts ($P<0.05$), further supporting this hypothesis.

In accordance with Cinotti et al. [21], dermoscopic examination substantially contributed to revealing the presence

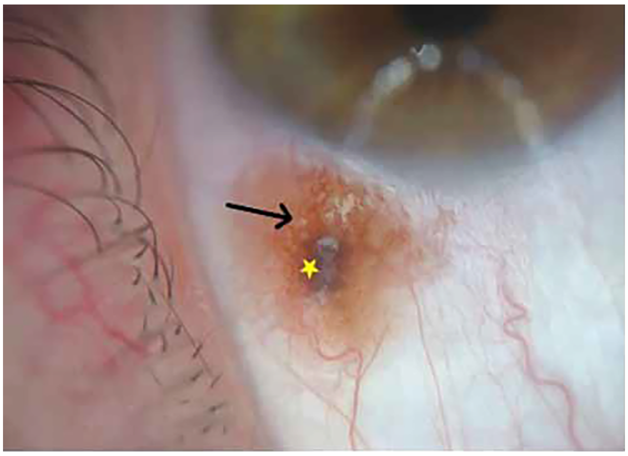

Figure 3. Conjunctival nevus with clear cysts and reticular pattern (black arrow) combined with homogeneous pattern in the center of the lesion (yellow asterisk).

of the benign epithelial cysts in 60% of the lesions, versus 13.3% observed with naked eye examination in our cases. This observation probably suggests the increased accuracy of the method and the diagnostic importance of structures identified via dermoscopy.

Regarding lesion color, all lesions in our study displayed brown or black pigmentation, likely due to the studied population being over 15 years of age, a stage when these lesions had probably achieved full pigmentation. In contrast, Shields et al., who included both pediatric and adult patients (age range 2–93 years), reported 16% of their sample to be completely amelanotic, which could be attributed to the fact that an estimated 30% of conjunctival nevi can remain amelanotic before puberty [5]. In terms of color variability, all lesions in our sample exhibited brown pigmentation, consistent with the findings of Cinotti et al. [21], although fewer color variations were observed. Notably, gray pigmentation, strongly associated with conjunctival melanoma (CM) in more than 60% of suspicious lesions by Cinotti et al. and Kaçar et al. [21, 22], was absent in our cases. Additionally, 10% (N=3) of lesions in our cohort displayed three colors (light brown, dark brown, and black), consistent with observations in nevi groups from previous studies. In contrast, colors linked to malignancy, such as blue, white, or red, were not identified in our sample.

Both PAM, a potentially premalignant condition, and CM tend to exhibit a dermoscopic pattern characterized by brown or black dots, irregularly distributed and often confluent into a peripheral structureless pattern, as consistently described by all study groups [21-24]. No case in our study displayed similar morphologic characteristics. Furthermore, studies investigating the malignant features of pigmented CML have described significant heterogeneity and plurality in both dermoscopic patterns and color variations [21-24]. More specifically, malignant and premalignant lesions were associated with the presence of ≥ two patterns and/or more than two colors. In contrast to these observations, none of the lesions in our study exhibited more than two patterns, with a single-pattern morphology identified in 46.7% (N=14) of the cases. Dębicka-Kumela et al. reported that 87.5% of CMs in their study exhibited two or more dermoscopic patterns [23]. Notably, none of the lesions in our study showed the presence of black dots throughout the lesion, a feature strongly associated with malignancy in former reports [21].

CML are predominantly assessed by ophthalmologists using tools such as slit-lamp biomicroscopy, anterior segment optical coherence tomography, and ultrasound biomicroscopy, which provide detailed insights into lesion depth, thickness, and potential intraocular invasion. However, our study highlights the value of dermoscopy, a practical, non-invasive tool that allows dermatologists to accurately identify hallmark features of benign lesions through detailed surface-level assessment. This capability not only reduces unnecessary referrals to ophthalmologists but also minimizes the need for invasive procedures such as biopsies in benign cases. Additionally, dermoscopy facilitates longitudinal monitoring through photographic documentation, making it a valuable tool for ongoing evaluation and follow-up in clinical practice.

Limitations

While our study provides valuable insights into the clinical and dermoscopic features of benign CMLs, several limitations must be acknowledged. The relatively small sample size and number of analyzed lesions may restrict the generalizability of our findings. Additionally, the lack of histopathological validation limits the strength of our conclusions. As a retrospective cohort study, follow-up data and patient outcomes were unavailable, preventing any assessment of the natural progression of these lesions. Last, the homogeneity of the study population and the lack of a control group made it challenging to identify meaningful correlations between different subgroups. These limitations highlight the need for future studies with prospective study design, larger samples, and comprehensive follow-up to validate and expand upon our findings.

Conclusions

Our findings indicate that benign conjunctival melanocytic lesions are more commonly observed in individuals with a low total body nevus count and are dermoscopically characterized by either a single or mixed pattern, with the homogeneous pattern being the most prevalent. Fewer than three colors were identified in all cases, and brown pigmentation was the most frequent. Another indicator of benignity was the presence of intralesional cysts in more than half of the cases and their correlation with a reticular pattern.

Dermoscopy, when combined with clinical characteristics and patient history, may serve as a valuable tool for the identification and monitoring of benign conjunctival melanocytic lesions. A closer collaboration between ophthalmologists and dermatologists could lead to optimization of the management of these lesions, yet larger additional studies are needed to establish the present findings and standardize site-specific dermoscopic criteria.

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