JBACHS
Journal of Basic and Clinical Health Sciences

J Basic Clin Health Sci 2023; 7: 1-9
https://doi.org/10.30621/jbachs.882595
RESEARCH ARTICLE

TRISTAR VESSELS: A NEWLY DESCRIBED DERMOSCOPIC VESSEL PATTERN OF MIESCHER'S NEVUS

Ceylan Avcı[1], Sevgi Akarsu[1], Özlem Özbağçıvan[1], Emel Fetil[1], Ali Tahsin Güneş[1]

[1] Dokuz Eylul University, Faculty of Medicine, Department of Dermatology, İzmir, Turkey

ORCID: C.A. 0000-0003-1767-4960; S.A. 0000-0001-8418-2953; Ö.Ö. 0000-0001-7190-3969; E.F. 0000-0003-2927-9052; A.T.G. 0000-0001-6542-8460

Corresponding author: Ceylan Avcı, **E-mail:** ceylan.canbaz@deu.edu.tr
Received: 23.02.2021; **Accepted:** 02.12.2022; **Available Online Date:** 31.01.2023

Cite this article as: Avcı C, Akarsu S, Özbağçıvan Ö, Fetil E, Güneş AT. Tristar vessels: a newly described dermoscopic vessel pattern of Miescher's nevus. J Basic Clin Health Sci 2023; 7: 1-9.

ABSTRACT

Purpose: Even though Miescher's nevus (MN) is very common in general population, little is known about the validity of dermoscopic criteria to differentiate it from other papulonodular lesions located on the head and neck. The aim of this study is to evaluate the dermoscopic findings of Miescher nevi (MNs) on the head and neck in patients aged ≥40 years.
Material and Methods: In this descriptive cross-sectional study, a total of 170 MNs in 94 patients were evaluated by using polarized light dermoscopy. Frequencies of dermoscopic findings in MNs were determined using Statistical Package for Social Sciences for Windows 15.0.
Results: The most frequently detected dermoscopic pattern in MNs was globular pattern (64.5%), less often homogeneous (32.4%) or cobblestone pattern (2.9%). Globules were observed in 75.3% of MNs and dots were seen in 12.4%. They frequently had skin-colored (87.1%) or light-brown (49.4%) homogeneous structureless areas. Elongated comma vessels (47.1%) were the most common vascular findings. Although comma vessels (33.5%) and linear vessels (4.7%) were also observed, 11.2% of MNs presented "tristar vessels" (a newly described vascular pattern) that showed regular 'tristar like ramifications' in the distal part of the vessels.
Conclusion: Firstly identified "tristar vessel pattern" is a dermoscopic description of MNs that can be a useful clue to differential diagnosis.

Keywords: Miescher's nevus, dermoscopy, vascular pattern, tristar vessels, arborizing vessel

INTRODUCTION

Miescher's nevus (MN) is the major subtype of dermal melanocytic nevus that occurs most commonly on the head and neck. It usually presents as a light brown or skin colored, smooth, dome-shaped papulonodular lesion (1). In a study about histopathologic evaluation of 458 dermal melanocytic nevi, it was reported that 83% of the nevi on head and neck were dermal nevi and almost every dermal melanocytic nevus on the face (94%) were Miescher nevi (MNs) (2). MN occurs generally among persons who are older than 30 years and clinically it may be confused with other papulonodular lesions such as neurofibroma, fibrosis nodularis nasi and nodular basal cell carcinoma (BCC) (1, 3).

Although histopathology is the gold standart in the diagnosis of melanocytic and non-melanocytic skin tumors, this method cannot be used in the diagnosis of all benign lesions that are not routinely excised (4). Dermoscopy is a non-invasive technique that is useful for the diagnosis of certain benign and malignant melanocytic and non-melanocytic lesions (5). It is

reported that the most common dermoscopic pattern associated with MNs is the homogeneous globular pattern with focal and symmetric arrangement of dots and globules arranged in cobblestone distribution, and the globules can have light to dark brown and occasionally blue colors (3). Unna nevus (UN), the other major subtype of dermal melanocytic nevus, is a polypoid or sessile, usually papillomatous light to dark-brown lesion frequently located on the trunk, arms and neck (1). The distinctions between MN and UN have been emphasized insufficiently (3). Dermoscopically, UN reveals a globular pattern composed of numerous tan to dark-brown, round to oval globules distributed regularly or cobblestone pattern. Densely packed and irregularly separated exophytic papillary structures and black comedo-like openings can also be seen (6). In hypopigmented or depigmented lesions, distinctive dermoscopic patterns formed by blood vessels can be identified and may serve as important clues to the specific diagnosis (5). It is suggested that comma vessels are the key dermoscopic findings for the diagnosis of dermal melanocytic nevi. They are thick, slightly curved, barely branching vessels that vary enormously in size and caliber, and are generally evenly distributed throughout the tumor (7-8). Comma vessels are said to be more polymorphic in MNs (8). It is also reported that irritated dermal melanocytic nevi occasionally may have arborizing vessels although they are the most characteristic vascular pattern of nodular BCC on dermoscopy (9). Arborizing vessels in BCC have stem vessels of large diameter which branch irregularly into the finest terminal capillaries. The sensitivity of arborizing vessels for BCC has been determined as 96.1% in a previous study (10).

Even though it is very common in general population, dermoscopic features and vascular patterns of MNs have been widely ignored in literature. It may be confusing to differentiate a MN from other papulonodular lesions, especially from a nodular BCC; because dermoscopy can reveal arborizing and comma vessels in both lesions and they are both commonly seen on the head and neck. This study was designed to determine the dermoscopic features of MNs on the head and neck.

MATERIAL AND METHODS

This was a descriptive cross-sectional study conducted in the Department of Dermatology at Dokuz Eylul University Faculty of Medicine between May 2011 and January 2013. The study was approved by the Dokuz Eylul University Non-Interventional Research Ethics Committee (Date: 21.04.2011, No: 2011/13-01), and we obtained informed patient consent prior to inclusion. Inclusion criteria for the study were adults aged ≥40 years with dome-shaped, smooth, skin-colored to brown papulonodular lesions on the head and neck. The head and neck were examined and clinically diagnosed MNs (defined according to Ackerman et al.) were evaluated by dermoscopy (1). Duration, localization, morphological changes and size of the lesions were recorded. The lesions with a suspicion of nodular BCC under dermoscopy underwent histopathological confirmation and then excluded from the study. Except for those with high clinical suspicion for BCC or other atypical lesions, only a few MNs from voluntary patients were evaluated histopathologically due to the ethic and cosmetic reasons.

The lesions on the head and neck were evaluated by using polarized light dermoscopy (MoleMax II, Derma Instruments, Vienna, Austria). Ultrasound gel was used as an immersion fluid and the lesions were analysed with 30x or 40x magnification based on their size. Statistical analysis was performed using Statistical Package for Social Sciences for Windows 15.0. Frequencies of dermoscopic findings in MNs were determined.

RESULTS

We selected 107 patients who had dome-shaped, smooth, skin-colored to brown papulonodular lesions on the head and neck. After excluding histopathologically confirmed nodular BCCs (13 patients with 15 nodular BCCs), we finally selected 94 patients. A total of 170 MNs in 94 patients (22 male, 72 female) who ranged from 40 to 91 years of age (mean: 56.6 years) were evaluated in this study. The durations of the MNs were between one year and 85 years (mean: 38 years). When the patients were asked whether there is any change in morphological features of their MNs, 30.7% of them described increase in elevation, 12.4% defined increase in nevus size and 4.2% stated that their MNs got lighter color in long duration. None of the patients indicated a sign of growing for more than a month and there were no weeping, ulceration, bleeding or tenderness clinically. Mean size of MNs was 5.0 mm x 4.6 mm. 90.6% of them were localized on the head and 9.4% were on the neck area. The localization of MNs were

Table 1. Dermoscopic features in Miescher's nevi

Frequency of dermoscopic features in Miescher's Nevi		**Number of lesions**	**%**
Color	Skin-color	74	43.5
	Light-brown	65	38.2
	Dark-brown	31	18.2
Skin-colored structureless areas		148	87.1
Light-brown structureless areas		84	49.4
Pseudonetwork		8	4.7
Globules	+	128	75.3
	-	42	24.7
Dots	-	149	87.6
	+	21	12.4
Dermoscopic Pattern	Globular pattern	110	64.5
	Homogeneous pattern	55	32.4
	Cobblestone pattern	5	2.9
Milia-like cysts		15	8.8
Hair		69	40.8

Table 2. Frequency of dermoscopic vascular features in Miescher's Nevi

Vascular features	**Number of lesions**	**%**
Elongated comma vessels	80	47.1
Comma vessels	57	33.5
'Tristar vessels'	19	11.2
Linear vessels	8	4.7

buccal (28.2%), oral (16.5%), orbital (9.4%), nasal (8.8%), mental (8.2%), frontal (5.9%), zygomatic (5.9%), temporal (5.3%), infraorbital (1.8%) and occipital areas (0.6%) on the head. The most common cervical localization area was regio cervicalis posterior (3.5%).

The most frequently detected dermoscopic pattern in MNs was globular pattern (64.5%), less often homogeneous (32.4%) or cobblestone pattern (2.9%). Lesions were often skin colored (43.5%) and they frequently had both skin-colored (87.1%) and light-brown (49.4%) homogeneous structureless areas. Globules were observed in 75.3% of MNs and dots were seen in 12.4%. The other determined dermoscopic features were vellus hairs, milia-like cysts and pseudonetworks (Table 1).

The most common vascular pattern was elongated comma vessels (47.1%) (Fig. 1-2), but comma vessels (33.5%) (Fig. 3) and linear vessels (4.7%) (Fig. 4) were also seen in MNs. Vessels which showed regular 'tristar like branching' in the distal part of the vessel were seen in 11.2% of MNs and this new vessel pattern was named as 'tristar vessel' by Prof. Dr. Ali Tahsin Güneş, MD, (Fig. 4-6) in our study (Table 2).

DISCUSSION

This study investigates the dermoscopic findings of MNs on the head and neck for diagnosis and differential diagnosis of dome-shaped, smooth, skin-colored to brown papulonodular lesions on the similar areas. A recent study evaluating the relation of BCCs (n:118) and dermal nevi (n:77) to various localizations on face, demonstrated that the distribution of these two groups of lesions were significantly different (p=0.001). BCCs were more likely to be located on the lateral part of the forehead (12.7%), nasal dorsum (10.2%) and nasal ala (9.3%) while dermal nevi were frequently located on buccal area (11.8%), scalp (11.8%), oral (10.8%) and infraorbital (9.7%) regions (11). Although in that study, it was not specified which subtype of dermal nevi were evaluated, these findings were generally consistent with our results that the most common localization of MNs on face were buccal, oral and orbital areas in the present study.

Table 3. Comparison of vascular features of MN, BCCs and dermal/congenital nevi in literature

Vascular structures (%)	MN, our study (n=170)	Conforti et al.[11], Dermal nevi (n=77)	Greco et al.[12], MN (n=55)	Suwattee et al., Nonpigmented dermal nevi [14] (n=32)	Argenziano et al., Dermal/Congenital nevi [16] (n=95)	Argenziano et al., BCCs [16] (n=117)	Caccavale S. et al.[17], Dermal nevi (n=141)
Arborizing vessels	-	-	∇	-	3.2%	82.1%	-
Tristar vessels*	11.2%	-	-	-	-	-	-
Dotted vessels	-	9%	-	19%	14.7%	0.9%	4%
Linear irregular vessels	4.7%	-	8%	-	1.1%	5.1%	50.3%
Comma vessels	33.5%	66.7%	33%	50%	66.3%	-	39.%
Elongated comma vessels	47.1%	-	-	-	-	-	-
Polymorphous/atypical vessels	-	-	60%	-	3.2%	5.1%	
Hairpin vessels	-	25.64%	4%	22%	1.1%	2.6%	3%
Crown vessels	-	-	-	-	1.1%	-	
Short telangiectasias	-	-	-	-	-	-	
Glomerular vessels	-	-	-	-	-	-	2%

* Tristar vessels are called firstly in our study.

∇ In combination with comma (50%) and linear (4%) vessels

Greco et al. described the features of 202 histopathologically confirmed dermal nevi, 55 of which were MNs. They showed that 20% of MNs revealed dotted/globular pattern, followed by cobblestone (9.1%) and homogeneous (7.3%) pattern. Brown pigment was present in 36.4% of MNs and structureless areas in 1.8%, hypopigmented areas in 10.9% and white areas in 23.6% of them. Hair, pseudonetwork pattern and milia were the other dermoscopic findings determined in MNs (40%, 9.1% and 3.6%, respectively) (12). Similarly, in the present study, the majority of the lesions were dark or light brown, while the rest of them were skin-colored and they frequently had skin-colored or light-brown homogeneous structureless areas. Compatible with the Greco et al.'s findings, the most frequently detected dermoscopic pattern in MNs was globular pattern and less often homogeneous or cobblestone pattern. As observed in the aforementioned study, pseudonetwork, milia-like cysts and vellus hairs were also observed in the present study. Pseudonetwork, which can be observed in MNs, was described as round, equally sized meshes corresponding to pre-existing follicular openings (13). In a previous study of digital polarized light dermoscopy of clinically nonpigmented dermal nevi (n=32), which were located commonly on face and ear (56%), Suwattee et al. demonstrated that the most common features were brown pigment (78%), white areas (53%) hair (47%) and comedo-like openings (22%) (14). While skin-colored structureless areas (87.1%) were the most common dermoscopic finding, the frequencies of hair, comedo-like openings, light and dark brown pigmentation were less in the present study. The smaller sample size in the mentioned previous study (14) can explain the differences between these results. In another study evaluating the dermoscopic features of 52 biopsy-proven amelanotic/hypomelanotic benign melanocytic lesions (included 17 dermal nevi), hypopigmentation was the most common dermoscopic feature (55%), and irregular dots and globules were present in 34.6%, regression structures in 26.9%, irregular pigmentation in 11.5% and atypical pigment network

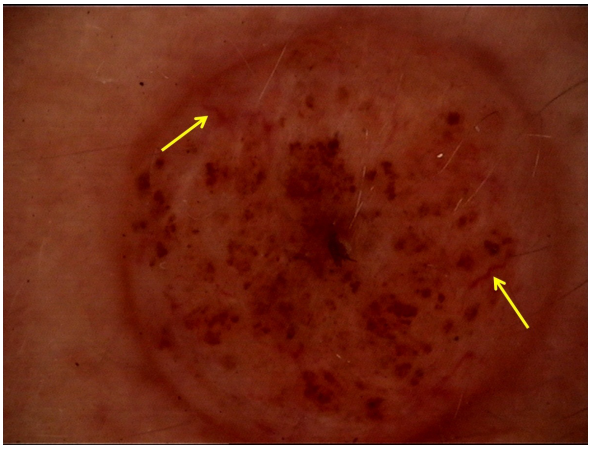

Figure 1. Dermoscopy showing elongated comma vessels in Miescher's Nevus

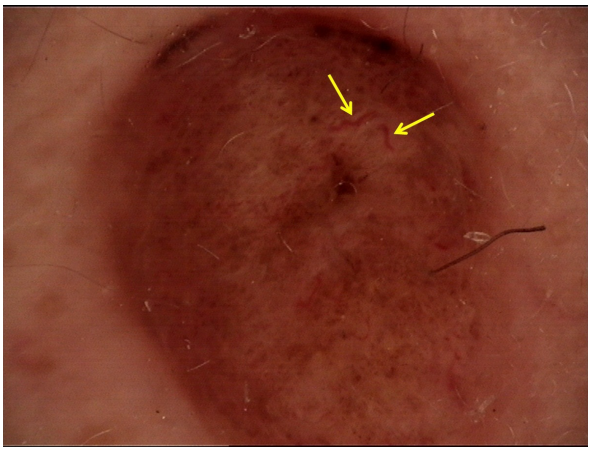

Figure 2. Dermoscopy showing elongated comma vessels in Miescher's Nevus

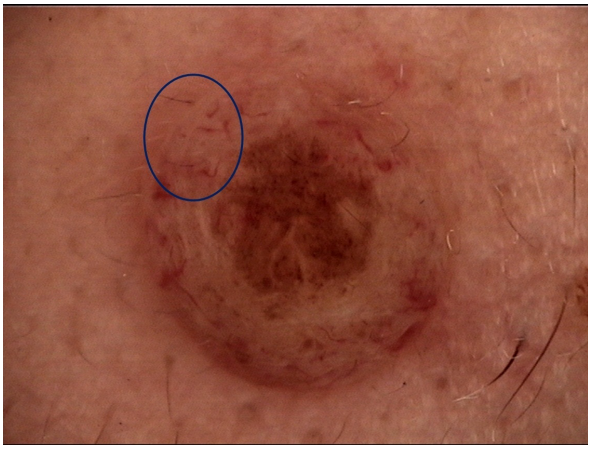

Figure 3. Dermoscopy showing comma vessels in Miescher's Nevus

in 11.5% (15). A correct comparison with our study could not be made because amelanotic/hypomelanotic benign melanocytic lesions such as compound nevi, Spitz nevi, congenital nevi and combined nevi were also included in that study.

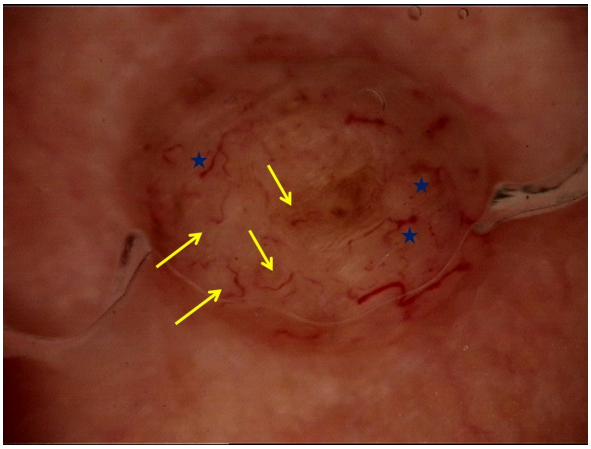

Figure 4. Dermoscopy of tristar vessels (blue asteriks) in Miescher's Nevus showing tristar like ramifications in the distal part of the vessel

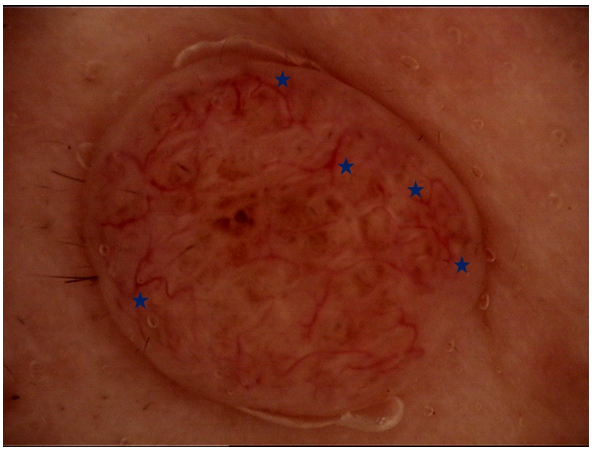

Figure 5. Dermoscopy of tristar vessels (blue asteriks) in Miescher's Nevus showing tristar like ramifications in the distal part of the vessel

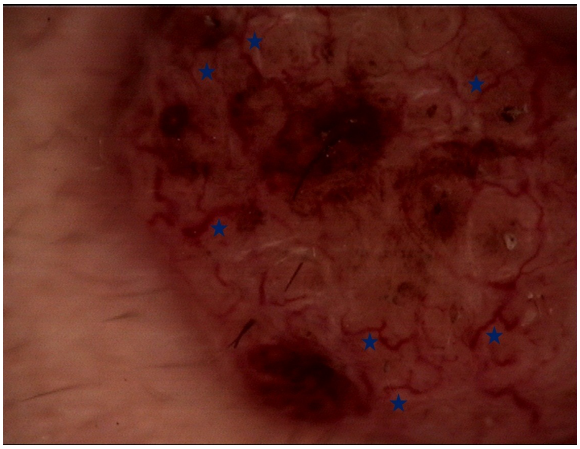

Figure 6. Dermoscopy of tristar vessels (blue asteriks) in Miescher's Nevus showing tristar like ramifications in the distal part of the vessel

In hypopigmented or depigmented skin lesions, dermoscopic visualization and identification of vessels with a characteristic morphology may serve

as important clues to specific diagnosis. Comma vessels are said to be the dermoscopic hallmark of dermal nevi and show a positive predictive value of 94%. These are coarse vessels that are slightly curved and barely branched but can be highly variable in both size and caliber. Comma vessels have been said to be more polymorphic and elongated in MNs (8). 'Polymorphic elongated comma vessels' were the most common vascular pattern observed in approximately half of the MNs in our study. Classical comma vessels were seen in 33.5% of MNs. In the study by Conforti et al., comma vessels were observed in 66.7% of dermal nevi (11). Similarly, Suwattee et al. found comma vessels as the most common vascular feature (50%) of clinically nonpigmented dermal nevi (14). As distinct from our study, hairpin vessels and dotted vessels were also observed in both studies (11, 14.). The comma vessel pattern was seen in 32.5% of MNs in the study by Greco et al. They also observed a polymorphous pattern, often (50%) manifested as a combination of comma and arborizing vessels. Linear and comma vessels combination was the other polymorphous pattern that was seen in 13% of MNs (12). In another study evaluating 52 amelanotic/hypomelanotic benign melanocytic lesions in which 17 of them were dermal nevi, dotted vessels were detected in 32.7%, comma vessels in 23.1%, arborizing vessels in 1.9% and hairpin vessels in 1.9%. There were no linear irregular vessels observed in any of those amelanotic/hypomelanotic benign melanocytic lesions (15). Linear vessels (4.7%) were the other vascular pattern seen in the present study. The frequency of linear irregular vessels was reported to be 1.1% in the dermal/congenital nevi in another study (16). As distinct from these findings, in a retrospective morphological study evaluating the vascular structures in a total of 141 dermal nevi (including both MN and UN), linear vessel pattern was the most common vascular structure (50.3%) (17).

In a previous report examining non-pigmented BCCs, arborizing vessels (83.7%) have been determined as the most common dermoscopic feature, followed by ulceration (48.9%), non-arborizing vessels (12%), short telangiectasias (14.1%) and small erosions (7.6%) (18). This vascular pattern is reported to be a specific finding of nodular and scleroderma-like BCCs (sensitivity of 96.1% and specificity of 90.9%) (10, 19). Menzies et al. reported that arborizing vessels were observed in 52% of pigmented BCCs (9). Although arborizing vessels were suggested to be a clue to diagnose the non-pigmented variant of BCC, they have also been recently observed in eccrine spiradenoma, neurothekeoma, hydradenoma, intraepidermal poroma and apocrine hydrocystomas (18, 20-24). Furthermore, it was reported that those vessels may be occasionally seen in irritated dermal nevi but there is no detailed data in the literature (9). In a previous report, Rubegni et al. defined the vessels in MNs as linear irregular vessels. These authors may have been indicating the 'vessels in tristar pattern' in their report while they didn't use this term (25). Greco et al. also have been noticed that the arborizing vessels in MNs always have the same dermoscopic characteristic, y-shaped branching and usually symmetrical. They named these vessels as 'y-vessel' (12). However, our study period was completed earlier (between May 2011 and January 2013) than the study by Greco et al. (between September 2003 and August 2018). Tristar vessels, which were called firstly in our study and seen in 11.2% of MN, showed regular 'tristar like ramifications' in the distal part of the vessel unlike the vessels in BCCs which branched irregularly into finest terminal capillaries. In a study evaluating the clinical and epidemiological aspects of subtypes of melanocytic nevi (flat nevi, MN and UN) in 400 patients (5-88 years of age), MNs were represented 5.84% of all nevi and predominantly found in head and neck region (26). In a subsequent study, Piliouras et al. recorded total nevus count and morphological nevus types with respect to age, sex and anatomical location in total of 59 patients (60-89 years of age) with 203 nevi. Of those, 23 were MNs that increased in 6th and 7th decade, and were mostly located on the head, neck and trunk (27). Based on this, if we think that the rate of MNs is higher than nodular BCCs on the head and neck, it is possible to see these tristar vessels more frequently in daily clinical practice. Table 3 presents a comparison of the dermoscopic vascular features obtained in the present study and the other reports (11,12,14,16,17). 'Tristar vessel' in the table is determined as a new dermoscopic feature in our study distinct from those of prior studies which used 'arborizing vessel' term.

As previously described, Cameron et al. have classified vessels into three main morphological groups on dermoscopy as dots, clods and lines (linear vessels). Linear vessels are further subdivided into six subcategories including linear straight, linear looped, linear curved, linear serpentine, linear helical and linear coiled (5). Subsequently, Zalaudek et al.

have identified six main morphologies among a broad spectrum of different vascular patterns. These are comma like, dotted, linear irregular, hairpin, glomerular and arborizing vessels. They have also differentiated three specific global features; crown vessels, strawberry pattern and milky red areas/globules (8). In addition, 'spermatozoa like' vessels in early stage of mycosis fungoides, 'chalice-form' and 'cherry-blossom' vessels in eccrine poromas, and 'flower pattern' in molluscum contagiosum have been reported in recent years (28,30). As far as we know, 'tristar vessels' have not been previously described in dermatology literature.

Similar with nodular BCC, it is also possible that amelanotic/hypomelanotic melanomas can mimic the other nodular, benign or malignant variants of both melanocytic and non-melanocytic lesions (15). In a study of patients' perceptions on presenting symptoms and signs of nodular melanoma, it was found that nodular melanomas were tended to be more symmetric, unicoloured and amelanotic (31). In 2003, Kelly et al. suggested 'EFG rule' for distinguishing features of nodular melanoma clinically. According to this rule; lesions that are elevated (E), firm (F) and persistantly growing (G) for more than a month should be considered suspicious for nodular melanoma and require an urgent response (32). When the MNs in our study were evaluated according to the EFG rule, none of the patients indicated a sign of growing for more than a month.

The major limitation of the present study is the lack of histopathological confirmation of MNs due to the ethic and cosmetic reasons. Further studies with a larger sample size including other papulonodular lesions (e.g., nodular BCC, nodular melanoma and adnexial tumors) with histopathological confirmations are needed to compare these dermoscopic vascular findings and to identify the sensitivity of tristar vessel pattern.

CONCLUSION

As a result, globular pattern was the most common dermoscopic pattern in MNs. The most common vascular pattern was elongated comma vessels. Elongated comma vessels have been previously defined in literature but there is no detailed data about their frequencies in MNs. 'Tristar vessels', seen in 11.2% of MNs and showed regular 'tristar like ramifications' in the distal part of the vessels, are firstly identified in the present study. We suggest that the "tristar vessels" seem to be a characteristic dermoscopic feature that can help to differentiate a MN from other dome-shaped, smooth, skin-colored to brown papulonodular lesions on the head and neck. It is also important that the dermoscopic evaluation should be integrated with the patient's clinical informations such as the patient age, lesion duration and any described morphological changes for the true diagnosis.

Acknowledgement: None.

Author contribution: All of the authors in the study contributed all the details for the manuscript including approval of the final version of the manuscript, critical literature review, analysis and interpretation, effective participation in research orientation, manuscript critical review, preparation and writing of the manuscript, statistical analysis, study conception and planning.

Conflict of interests: The authors have no conflicts of interest to declare. All co-authors have seen and agree with the contents of the manuscript and there is no financial interest to report.

Ethical approval: The study was approved by the Dokuz Eylul University Non-Interventional Research Ethics Committee (Date: 21.04.2011, No: 2011/13-01), and we obtained informed patient consent prior to inclusion

Funding: None.

Peer-review: Externally peer-reviewed.

REFERENCES

1. Ackerman A, Magana Garcia M. Naming acquired melanocytic nevi: Unna's, Miescher's Spitz's, Clark's. Am J Dermatopathol 1990;12(2):193-209.
2. Yus ES, del Cerro M, Simon RS, Herrera M, Rueda M. Unna's and Miescher's nevi: two different types of intradermal nevus: hypothesis concerning their histogenesis. Am J Dermatopathol 2007;29(2):141-151.
3. Wang SQ, Rabinovitz HH, Kopf AW. Miescher nevus. In: Soyer HP, Argenziano G, Hoffman-Wellenhof R, Johr R, editors. Color Atlas of Melanocytic Lesions of the Skin. Berlin Heidelberg New York: Springer Press; 2007.p.139-141.
4. Zalaudek I, Cota C, Ferrara G, et al. Flat pigmented macules on sun-damaged skin of the head /neck: junctional nevus, atypical lentiginous nevus, or melanoma in situ? Clin Dermatol 2014;32(1):88-93.
5. Cameron A, Kittler H, Riedl E, Rosendahl C. Dermatoscopy of unpigmented lesions of the skin: a new classification of vessel morphology based on pattern analysis. Dermatol Pract Consept 2008,14:4.

6. Puig S, Malvehy J. Unna nevus. In: Soyer HP, Argenziano G, Hoffman-Wellenhof R, Johr R, editors. Color Atlas of Melanocytic Lesions of the Skin. Berlin Heidelberg New York: Springer Press; 2007.p.181-184.
7. Martín JM, Bella-Navarro R, Jordáa E. Vascular patterns in dermoscopy. Actas Dermosifiliogr 2012;103(5):357-375.
8. Zalaudek I, Kreusch J, Giacomel J, Ferrara G, Catricala C, Argenziano G. How to diagnose nonpigmented skin tumors: a review of vascular structures seen with dermoscopy part I. melanocytic skin tumors. J Am Acad Dermatol 2010;63(3):361-374.
9. Menzies SW, Westerhoff K, Rabinovitz H, Kopf AW, McCarthy WH, Katz B. Surface microscopy of pigmented basal cell carsinoma. Arch Dermatol 2000;136(8):1012-1016.
10. Kreusch J. Vascular patterns in skin tumors. Clin Dermatol 2002;20(3):248–54.
11. Conforti C, Giuffrida R, Agozzino M, et al. Basal cell carcinoma and dermal nevi of the face: comparison of localization and dermatoscopic features. Int J Dermatol 2021;60(8):996-1002.
12. Greco V, Cappello M, Megna M, et al. Dermoscopic patterns of intradermal naevi. Australas J Dermatol 2020;61(4):337-341.
13. Rao BK, Wang SQ, Murphy FP. Typical dermoscopic patterns of benign melanocytic nevi. Dermatol Clin 2001;19(2):269-284.
14. Suwattee P, Schram SE, Warshaw EM. Digital polarized light dermoscopy of clinically nonpigmented dermal nevi. Dermatol Surg 2007;33(9):1120-1125.
15. Pizzichetta MA, Talamini R, Stanganelli I, et al. Amelanotic/hypomelanotic melanoma: clinical and dermoscopic features. Br J Dermatol 2004;150:1117-1124.
16. Argenziano G, Zalaudek I, Corona R, et al. Vascular structures in skin tumors. Arch Dermatol 2004;140:1485-1489.
17. Caccavale S, Lupoli A, Alfano R, Longo C, Argenziano G. Vascular structures in dermal nevi: a reappraisal. Int J Dermatol 2017;56(3):68-70.
18. Takenouchi T. Key points in dermoscopic diagnosis of basal cell carcinoma and seborrheic keratosis in Japanese. J Dermatol 2011;38(1):59-65.
19. Zalaudek I, Kreusch J, Giacomel J, Ferrara G, Catricala C, Argenziano G. How to diagnose nonpigmented skin tumors: a review of vascular structures seen with dermoscopy part II. nonmelanocytic skin tumors. J Am Acad Dermatol 2010;63(3):377-386.
20. Altamura D, Menzies SW, Argenziano G, et al. Dermatoscopy of basal cell carcinoma: morphologic variability of global and local features and accuracy of diagnosis. J Am Acad Dermatol 2010;62(1):67-75.
21. Collgros H, Guitera P. A pearly papule with arborizing vessels. J Am Acad Dermatol 2015;72:25-26.
22. Aydingoz IE, Mansur AT, Dikicioglu-Cetin E. Arborizing vessels under dermoscopy: a case of cellular neurothekeoma instead of basal cell carcinoma. Dermatol Online J 2013;19(3):5.
23. Sgambato A, Zalaudek I, Ferrara G, et al. Adnexal tumors: clinical and dermoscopic mimickers of basal cell carsinoma. Arch Dermatol 2008;144(3):426.
24. Zaballos P, Bañuls J, Medina C, Salsench E, Serrano P, Guionnet N. Dermoscopy of apocrine hidrocystomas: a morphological study. J Eur Acad Dermatol Venereol 2014;28(3):378-381.
25. Rubegni P. Mandato F. Biagioli M. Fimiani M. About vascular patterns. Australas J Dermatol 2009;50(3):223-225.
26. Witt C, Krengel S. Clinical and epidemiological aspects of subtypes of melanocytic nevi (flat nevi, miescher nevi, unna nevi). Dermatol online 2010;16(1):1.
27. Piliouras P, Gilmore S, Wurm EM, Soyer HP, Zalaudek I. New insights in naevogenesis: number, distribution and dermoscopic patterns of naevi in the elderly. Australas J Dermatol 2011;52:254-258.
28. Lallas A, Apalla Z, Lefaki I, et al. Dermoscopy of early stage mycosis fungoides. J Eur Acad Dermatol Venereol 2013;27 (5):617-621.
29. Espinosa AE, Ortega BC, Venegas VQ, Ramirez RG. Dermoscopy of non-pigmented eccrine poromas: study of Mexican cases. Dermatol Pract Concept 2013;3(1):25-28.
30. Ianhez M, Cestari S, Enokihara MY, Seize MB. Dermoscopic patterns of molluscum contagiosum: a study of 211 lesions confirmed by histopathology. An Bras Dermatol 2011;86(1):74-79.
31. Chamberlain AJ, Fritschi L, Kelly JW. Nodular melanoma: patients' perceptions of presenting

features and implications for earlier detection. J Am Acad Dermatol 2003;48:694–701.
32. Kelly JW, Chamberlain AJ., Staples MP, McAvoy B. Nodular melanoma-no longer as simple as ABC. Australian Family Physician 2003;32(9):706-709.