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Update on dermoscopy of Spitz/Reed naevi and management guidelines by the International Dermoscopy Society

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What's already known on this topic?

Spitzoid lesions represent a challenging and controversial group of tumours, in terms of clinical recognition, biologic behavior and management strategies. Dermoscopy improves the clinical recognition of Spitz naevi, but a morphologic overlap between Spitz naevi and spitzoid melanoma does exist. Histopathologically, some tumours cannot be safely diagnosed neither as Spitz naevi nor as melanomas. These controversies result in a significant inconsistency of management of spitzoid tumours among clinicans.

What does this study add?

Three dermoscopic patterns may be considered as suggestive of a Spitz naevus: starburst pattern, regularly distributed dotted vessels and globular pattern with reticular depigmentation. Dermoscopically asymmetric lesions with spitzoid features (both flat/raised and nodular) should be excised to rule out melanoma. Dermoscopically symmetric spitzoid nodules should also be excised or closely monitored, irrespectively of the age, to rule out atypical Spitz tumours. Dermoscopically symmetric flat spitzoid lesions should be managed according to the age of the patient.

Abstract

Spitzoid lesions represent a challenging and controversial group of tumours, in terms of clinical recognition, biologic behavior and management strategies. Although Spitz naevi are considered benign tumours, their clinical and dermoscopic morphologic overlap with spitzoid melanoma renders the management of spitzoid lesions particularly difficult. The controversy deepens because of the existence of tumours that cannot be safely histopathologically diagnosed as naevi or melanomas (atypical Spitz tumours). The dual objective of the present study was to provide an updated classification on dermoscopy of Spitz naevi, and management recommendations of spitzoid looking lesions based on a consensus among experts in the field. After a detailed search of the literature for eligible studies, a data synthesis was performed from 15 studies on dermoscopy of Spitz naevi. Dermoscopically, Spitz naevi are typified by 3 main patterns: starburst pattern (50.6%), a pattern of regularly distributed dotted vessels (19.3%) and globular pattern with reticular depigmentation (17.0%). A consensus-based algorithm for the management of spitzoid lesions is proposed. According to it, dermoscopically asymmetric lesions with spitzoid features (both flat/raised and nodular) should be excised to rule out melanoma. Dermoscopically symmetric spitzoid

nodules should also be excised or closely monitored, irrespectively of the age, to rule out atypical Spitz tumours. Dermoscopically symmetric flat spitzoid lesions should be managed according to the age of the patient. Finally, the histopathologic diagnosis of atypical Spitz tumour should warrant wide excision but not a sentinel lymph node biopsy.

Introduction

Since its first description by Sophie Spitz, the morphologic and biologic spectrum of Spitz naevus has been extensively investigated. [1,2] Although initially described as "juvenile melanoma", the benign nature of Spitz naevus was very soon understood. For several decades, this tumour was considered to be completely benign and cases of metastatic disease were assumed to represent incorrectly diagnosed melanomas mimicking a Spitz naevus.[3] However, in the late 90s, cases of spitzoid lesions without malignant histopathologic criteria but with the potential of nodal metastasis were described.[4] This observation initiated a new era of controversies on the true biology of spitzoid neoplasms, characterized by the introduction of several terms (spitz naevus with atypia and metastasis, metastasizing Spitz tumour, atypical Spitz tumour, atypical Spitz naevus, melanocytic tumour of unknown malignant potential, melanocytoma) attempting to classify spitzoid tumours with intermediate histopathologic features between Spitz naevus and spitzoid melanoma. [5-8] The controversies on terminology, classification and management strategies of these tumours continue up to date.

The introduction of dermoscopy significantly improved the clinical recognition of Spitz naevi, since they were shown to exhibit a peculiar and characteristic pattern of dermoscopic structures.[9] Pigmented variants were first investigated and shown to display the so-called "starburst" pattern, consisting of a central area of homogenous black-blue pigmentation and symmetrically distributed peripheral streaks or pseudopods. [9-11] Several additional patterns

were later found to be associated with pigmented Spitz naevus, including globular, homogeneous, reticular and multicomponent pattern.[12]

Another criterion initially reported to characterize melanoma but later shown to be rather predictive of Spitz naevus was the so-called negative pigment network or reticular depigmentation, consisting of white intermingled lines surrounding pigmented globules.[13]

Studies on the dermoscopic morphology of non-pigmented Spitz naevi were conducted later and suggested that these tumours more frequently display dotted vessels in a regular distribution. [14,15] The aforementioned negative pigment network was found to be present also in non-pigmented Spitz naevi, with the only difference being that the white lines surround vessels instead of pigmented globules. [13,16]

Several infrequent dermoscopic patterns have been also reported in Spitz naevi and suggested to correspond to peculiar histopathologic variants such as angiomatoid or desmoplastic Spitz naevus.[17]

Although dermoscopy provided further insights into the morphology of Spitz naevus, management of spitzoid lesions remains controversial. The main source of controversy is the fact that spitzoid melanoma might perfectly mimic a Spitz naevus, displaying one of the aforementioned dermoscopic patterns.[18] This has been highlighted by studies reporting a high variability in clinicians' beliefs and behavior.[19] Two clinically relevant questions remain to be addressed: How to manage a spitzoid-looking lesion and how to manage a tumour histopathologically diagnosed as "atypical spitzoid naevus or tumour".

Our study had 3 aims: First, to provide an updated dermoscopic classification of Spitz naevi based on a detailed search and review of the literature. Second, to provide recommendations on the management of spitzoid lesions according to their clinical and dermoscopic morphology. Third, we also aimed to provide recommendations on the management of histpathologically ambiguous spitzoid tumours.

Materials and methods

Search Strategy

To identify eligible studies, the main search was conducted in the electronic databases MEDLINE, EMBASE, and Cochrane Central Register of Controlled Trials (CENTRAL), using any one of the terms "dermoscopy (MeSH)", "dermatoscopy (MeSH)", "epiluminescence microscopy (MeSH)", "videodermoscopy (MeSH)" and anyone of the terms "Spitz nevus" (MeSH), "Spitzoid melanoma" (MeSH), "atypical Spitz" (MeSH), "spitz*", "atypical melanoma" (Mesh), "Nevus, Spindle Cell and Epithelioid" (Mesh), "atypical epithelioid melanocytic proliferation", "melanocytic neoplasm", "pigmented epithelioid melanocytoma" "melanocytic tumour of uncertain malignant potential", without language restriction. The manual search was concluded by the perusal of the reference sections of all relevant trials or reviews and contact with experts on the subject in an effort to identify relevant unpublished data. Studies describing patients with "Spitzoid melanoma" were thoroughly reviewed to avoid missing cases of spitz naevi.

The main search and the screening of titles and abstracts were completed independently by two reviewers (AK and AL) with expertise in conducting systematic reviews (Figure 1). Studies of patients with Spitz naevi that met the following 2 criteria were included in the analysis: (1) the diagnosis of Spitz nevus were histopathologically confirmed (2) adequate information on the dermoscopic criteria were provided either in the text or in tables. Case reports or case series aiming to describe uncommon or peculiar dermoscopic findings of Spitz naevi were excluded.

The primary outcome was the dermoscopic criteria of the lesions in the included studies. Other variables recorded were patients' age and sex.

In this manuscript, the metaphoric dermoscopic terminology was used. The equivalent of the "metaphoric" dermoscopic terms in descriptive terminology, as well as their definition, is provided in Table 1.

A web-based consensus was performed among the authors and other experts in the field. Available literature data were insufficient to provide evidence-based recommendations. Effectively and although all available evidence was taken into consideration, the recommendations provided in this manuscript should rather be considered as expert-consensus guidelines.

Results

As shown in Table 2, 15 eligible studies were finally included in the data synthesis. The 15 eligible studies included 6 multicenter case-control studies, 3 single-center case-control studies, 1 multicenter case series study and 5 single-center case series studies. [10,11,13,14,16,18,20-28]

Overall, 896 patients with Spitz naevi were included in our analysis. Mean age was 27.7 years and the male-to-female ratio was 1:1.65. However, it has to be mentioned that the largest case-control study included patients older than 12 years of age.

Table 3 shows the results of the dermoscopic analysis. The starburst pattern was the most frequently observed dermoscopic pattern of Spitz naevi (453/896 cases, 50.6%), followed by the pattern of dotted vessels (173/896, 19.3%) and the globular pattern (152/896, 17%). Finally, a multicomponent/atypical pattern characterized 81 of 896 Spitz naevi (9.0%). No significant correlation was found between age or sex and the dermoscopic naevus pattern.

Discussion

Our results confirm that Spitz naevi display characteristic dermoscopic patterns that facilitate their recognition. Based on the findings of our review of the literature, we propose an updated dermoscopic classification of Spitz naevi.

From a morphologic point of view, a "spitzoid" pattern by definition presupposes a symmetric arrangement of colours and structures. In contrast, the same dermoscopic structures, when non-symmetrically distributed, represent melanoma-specific criteria. For instance, asymmetrically distributed peripheral streaks, pseudopods or globules are considered features suggestive of melanoma and are often combined to each other forming the so-called "multicomponent pattern".[29] Although the latter pattern is generally suggestive of melanoma, our results highlight it can be also seen in a proportion of Spitz naevi. However, a Spitz naevus exhibiting asymmetrically distributed features is impossible to be differentiated from melanoma and, accordingly, we strongly suggest clinicians to excise such lesions irrespectively of the age or clinical morphology.

Dermoscopic patterns of pigmented Spitz (Reed) naevus

As shown by our results, the vast majority of pigmented Spitz naevi are dermoscopically typified either by a starburst or by a globular pattern, the latter usually associated with reticular depigmentation (Figs 1 and 2). It has to be mentioned that a globular pattern not associated with reticular depigmentation cannot be considered as specific for Spitz naevus, since it is well known that the majority of naevi, especially in children, display a pattern of globules.[30]

In fact, the starburst pattern has been suggested to typify Reed naevus, while the globular pattern is associated with pigmented Spitz naevi.[31] Whether Reed and pigmented Spitz naevi represent different tumours has not been fully elucidated up to date. However, their

morphologic and epidemiologic characteristics rather support the theory that they represent distinct entities within the same spectrum.

Spitz naevi with a different dermoscopic aspect do exist (homogeneous, reticular, multicomponent). The homogeneous and reticular patterns have been suggested to represent later evolution phases of the starburst pattern. In any case, the latter patterns cannot be considered as specific for spitzoid tumours, since they can be found much more frequently in other naevus types, while the multicomponent pattern, as discussed above, should be considered as suggestive of melanoma. Therefore, two dermoscopic patterns can be considered highly suggestive of pigmented Spitz naevus: the starburst pattern (Reed naevus) and the globular pattern with reticular depigmentation (pigmented Spitz naevus).

Dermoscopic patterns of non-pigmented Spitz naevus

Regularly distributed dotted vessels represent the dermoscopic hallmark of non-pigmented Spitz naevus. Reticular depigmentation, namely white crossing lines surrounding the vessels, represents a frequent additional feature. Although under-reported in the literature, clinicians should expect that, in raised and nodular Spitz naevi, the vessels might not project and small dots but as larger red globules, coiled vessels or even hairpin or corkscrew vessels (Figs 3 and 4). However, their distribution should always be symmetric all over the lesion. If the vascular structures are asymmetrically distributed, as discussed above, the dermoscopic pattern should not be considered any more as spitzoid but, instead, as suggestive of melanoma.

Dermoscopic patterns of atypical Spitz tumour

A recent study investigated the dermoscopic findings in a series of 55 atypical Spitz tumours (AST) as compared to 110 Spitz naevi.[26] According to the results, the vast majority of AST are dermoscopically typified by a multicomponent pattern and would, thus, be clinically interpreted as suspicious for melanoma. However, approximately 17% of AST were nodules displaying a typical non-pigmented Spitzoid pattern, namely regularly distributed dotted vessels with or without reticular depigmentation (Fig. 5). The latter result highlights a clinically relevant morphologic overlap between Spitz naevi and AST, which is further discussed below.

Dermoscopic patterns of spitzoid melanoma

The dermoscopic morphology of spitzoid melanoma usually follows the basic rule of asymmetry: it is typically characterized by an asymmetric distribution of spitzoid features (streaks, globules, vascular structures), often combined among them to form the so-called multicomponent pattern. However, less frequently, melanoma might perfectly mimic a pigmented or non-pigmented Spitz naevus (Fig. 6). This was demonstrated by a recent study evaluating 384 dermoscopically symmetric spitzoid-looking lesions in patients older than 12 years of age.[18] Approximately 13% of these tumours were proven to be melanomas, with the probability of melanoma increasing significantly with age. For example, a perfectly symmetric spitzoid-looking lesion developing in an individual after the age of 50 years is associated with a 50% probability of being melanoma, whereas this probability decreases to 6.8% for patients younger than 30 years. Nodular spitzoid lesions are associated with a higher possibility of melanoma (32.1%), but also the risk of flat lesions remains considerable (11.8%). In the light of the latter significant morphologic overlap between Spitz naevus and

melanoma, the management of spitzoid tumours should be adjusted accordingly, as discussed below.

Management of spitzoid-looking lesions

Taking into account the aforementioned morphologic overlap among Spitz naevus, AST and spitzoid melanoma, we recommend 2 possible strategies for management of spitzoid-looking lesions. These recommendations are based on the notion that the dual goal of our clinical practice is to minimize the risk of missing melanoma and avoid, as much as possible, unnecessary excisions of benign moles.[32]

The safest strategy would be to excise any lesion with spitzoid features (symmetrically or asymmetrically distributed) irrespectively of the age of the patient. Obviously, this strategy is associated with no risk of missing melanoma, but will also result in a relatively high number of excisions of benign moles. Given that the majority of Spitz naevi develop in children and, therefore, their excision would not be so easy and might require general anaesthesia, a more flexible risk associated age-dependent strategy is rather recommended (Fig. 7). The proposed algorithm is presented in Fig 7 and includes the following 3 sequential steps:

1. Assessment of the overall dermoscopic symmetry: Lesions displaying spitzoid features (peripheral streaks/pseudopods, dotted vessels, reticular depigmentation) asymmetrically distributed should be excised to rule out melanoma. All the aforementioned features, when not symmetrically distributed, should be considered as criteria suggestive of melanoma.
2. Dermoscopically symmetric spitzoid-looking lesions developing after the age of 12 years should also be managed with caution since, as mentioned above, these lesion have a considerable probability to be a melanoma.[18] The recommended management is excision.

An acceptable alternative option is close digital monitoring until stabilization. In case that monitoring is selected, the recommended plan is:

a. Nodular lesions: follow-up visits with dermoscopic documentation every 15 days. Detection of growth between 2 sequential visits should warrant excision. If the naevus is not growing after 2 visits, the interval of follow-up visits might be prolonged to 4 and later 8 weeks. The follow up might be discontinued when there is documented evidence of no growth for at least 6 months. If the naevus undergoes involution, follow up should continue until stabilization (documented evidence of no change for at least 6 months) or complete disappearance.

b. Flat/raised lesions: follow-up visits with dermoscopic documentation every 2-3 months.

   Lesions displaying a starburst pattern are expected to grow, reach stabilization and, very probably, enter an involution phase. Ideally, the naevus will grow symmetrically to all directions and gradually acquire a homogeneous aspect of blue-black colour (Fig. 8). Subsequently, the darkly pigmented area will be gradually restricted to the center of the lesion, while the peripheral part of the naevus will exhibit regular network. At this stage, the naevus might look like the so-called black naevus found in dark skin type individuals. Finally, an involution process is very likely to begin and more than 50% of naevi will disappear completely.[25] Unfortunately, several “starburst” naevi do not follow the aforementioned ideal symmetric morphologic evolution (Fig. 9). In such cases, excision is highly recommended. Monitoring should continue until stabilization, defined as documented evidence of no growth for at least 6 months. If the naevus undergoes involution, follow up should continue until stabilization (documented evidence of no change for at least 6 months) or complete disappearance.

Lesions displaying a globular pattern or a pattern of dotted vessels should be monitored until stabilization, defined as documented evidence of no growth for at least 6 months. Detection of asymmetric growth should warrant excision. If the naevus undergoes involution, follow up should continue until stabilization or complete disappearance.

3. Below the age of 12, the recommended management of dermoscopically symmetric spitzoid-looking lesions is as following:
    a. Nodular lesions: The recommended management is excision, mainly because the possibility of AST cannot be excluded on the basis of dermoscopic morphology. An acceptable alternative option is close digital monitoring until stabilization. In case that monitoring is selected, the recommended plan is identical as in 2a.
    b. Flat/raised lesions: The recommended management is follow up until stabilization. Monitoring is highly recommended for lesions displaying a starburst pattern (Reed naevi). The morphologic evolution of Spitz naevi displaying a pattern of globules or dotted vessels is less elucidated and monitoring them might induce anxiety in clinicians and the parents of the patient. Effectively, clinicians should take into account the overall clinical context (anatomic site, family environment, etc) and select either to monitor or excise the tumour. In any case, they should keep in mind that the possibility of melanoma in a flat/raised dermoscopically symmetric spitzoid-looking lesion below the age of 12 is extremely low. In case that monitoring is selected, the recommended plan is identical as in 2b.

Interestingly, a survey among pediatric dermatologists highlighted that clinicians were more prone to follow-up nodular non-pigmented spitzoid lesions as compared to pigmented ones, which were more frequently excised.[19] However, recent data on the morphology of AST showed that it might be clinically and dermoscopically indistinguishable from a non-

pigmented Spitz naevus, namely, a nodule with dotted vessels with or without reticular depigmentation.[26] In contrast, flat/raised pigmented lesions dermoscopically characterized by a starburst or a globular pattern were almost always naevi. Effectively, we recommend a lower threshold for excision of non-pigmented nodules, while flat/raised lesions might enter follow up in children aged below 12 years.

Management of histopathologically ambiguous spitzoid tumours

The spectrum of spitzoid lesions ranges between Spitz naevus, which represents a benign tumour with no difference in prognosis comparing to other types of naevi, and spitzoid melanoma. Subsequently, in the hypothetical scenario that all Spitz naevi and all spitzoid melanomas could be accurately diagnosed as such, the optimal management of naevi would require no action, whereas spitzoid melanoma should be managed as any other melanoma type.

The controversy exists because between these 2 edges, there are tumours that histpathologically cannot be safely diagnosed neither as naevi nor as melanomas. This is because their histopathologic alterations extend beyond the expected atypia of Spitz naevi, but without fulfilling the criteria of melanoma. Among several terms that histopathologists have used to classify these tumours, the term "atypical Spitz tumour" (AST) has been more globally adopted.[33] The fact that AST represents an intermediate entity in terms of histopathologic morphology does not necessarily equal to an intermediate biologic course. Sentinel lymph node biopsy (SLNB) has been suggested as a possible solution to this diagnostic problem, based on the assumption that the detection of melanocytic cells in the sentinel lymph node would predict an aggressive biologic behavior.[34] However, recent meta-analytic data including all published cases worldwide demonstrated that AST is associated with a highly favorable prognosis, even in case of SLNB positivity.[35] Accordingly, evidence

suggests that the optimal management of AST is wide surgical excision, while SLNB should be considered inappropriate. Although data suggesting the optimal margins for wide local excision are lacking, the most frequently used margins are 1 cm, which is also our suggestion. Clinical follow-up with superficial node palpation is recommended at least once per year for 3 years. Work-out with ultrasounds is required in case of palpable nodes or doubt.

Limitations

The studies included in the data synthesis were heterogenous concerning their aims, design, dermoscopic criteria used in the evaluation and reporting of results. To minimize this problem, authors of several studies were contacted to provide information on the raw data of their studies.

In addition, readers should take into account that clinicians often choose not to excise Spitz naevi, but, instead, monitor them until stabilization. In the present study, Spitz naevi lacking a histopathologic diagnosis were excluded. Accordingly, the percentages of naevi displaying one of the "symmetric" patterns (starburst, globular or dotted vessels) might be underestimated in this study, whereas the percentage of Spitz naevi with atypical/multicomponent dermoscopic pattern might be lower than the one reported herein. Futhermore, although only cases with a definite histopathologic diagnosis were included in this study, it has to be mentioned that the accurate histopathologic characterization of a spitzoid lesion might be highly challenging. This means that we cannot exclude the possibility that some of the tumours included in the studies enrolled in our review had been histopathologically incorrectly classified.

Finally, as explained above, available evidence was insufficient to allow us to provide evidence-based guidelines. Therefore, readers should consider the provided guidelines as expert consensus-based recommendations.

Conclusion

Spitzoid lesions represent a fascinating and challenging group of tumours, dermoscopically typified by 3 main patterns: starburst pattern, a pattern of regularly distributed dotted vessels and globular pattern with reticular depigmentation. Dermoscopically asymmetric lesions with spitzoid features should be excised to rule out melanoma. The management of dermoscopically symmetric spitzoid lesions requires updated knowledge and integration of clinical and dermoscopic information.

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Tables

Table 1. Metaphoric and descriptive dermoscopic terms used in the manuscript and their definition

Metaphoric term used in the manuscript	Equivalent in descriptive terminology	Definition
starburst pattern	pattern of circumferential radial lines/pseudopods, with central structureless area	pigmented streaks or pseudopods in a radial arrangement at the periphery of the lesion, combined with a central area of homogeneous black-blue pigmentation
globular pattern	pattern of clods	numerous, variously sized, round to oval structures with various shades of brown and gray-black
homogenous pattern	structureless pattern	diffuse, brown, gray-blue to gray-black pigmentation in the absence of other distinctive local features
reticular pattern	pattern of reticular lines	pigment network covering most parts of the lesion
multicomponent pattern	combined patterns	a pattern composed of more than one of the patterns described above
streaks	peripheral radial lines	finger-like projections seen at the edge of a lesion
pseudopods	pseudopods	finger-like projections with a bulbous ending seen at the edge of a lesion
reticular depigmentation	hypo pigmented reticular lines	a network of hypopigmented/white lines surrounding either globules of vascular structures
dotted vessels	dotted vessels	red dots
glomerular vessels	coiled vessels	tortuous capillaries (variation of dotted vessels)
hairpin vessels	looped vessels	vascular loops sometimes twisted and bending
linear irregular vessels	linear irregular vessels	linear and irregularly shaped and sized vascular structures

Table 2. Studies included in the data synthesis

Study	No of cases	pigmented	non-pigmented
Argenziano et al. 1999	36	36	0
Pellacani et al. 2000	26	17	9
Rubegni et al. 2001	43	43	0
Argenziano et al. 2001	57	57	0
Argenziano et al. 2004	18	0	18
Ferrara et al. 2005	69	58	11
Nino et al. 2009	8	8	0
Pellacani et al. 2009	40	40	0
Argenziano et al. 2011	64	25	39
Botella-Estrada et al. 2012	9	0	9
Pizzichetta et al. 2013	40	N/A	N/A
Zalaudek et al. 2013	26	0	26
Lallas et al. 2015	333	286	47
Moscarella et al. 2015	110	78	22
Guida et al. 2016	17	15	2
total	896	713	183

Table 3. Dermoscopic criteria of Spitz naevi from 15 studies included in the data synthesis

Dermoscopic pattern	frequency (n=896)
Global pattern	
starburst	453 (50.6%)
globular	152 (17.0%)
multicomponent/atypical	81 (9.0%)
homogenous	15 (1.7%)
reticular	22 (2.5%)
dotted vessels*	173 (19.3%)
Additional features	
reticular depigmentation	158 (17.6%)
superficial black network	21 (2.3%)
blue-white veil	14 (1.6%)

* Several authors mention that in elevated nodular non-pigmented Spitz naevi, the vessels are not precisely dotted but may project as red globules, coiled or tortuous vessels

Figure legends

Figure 1. The starburst pattern of pigmented Spitz (Reed) naevi. The pattern consists of a hyperpigmented center and symmetrically distributed peripheral pseudopods (a,b) or streaks (c) or combination of pseudopods and streaks (d).

Figure 2. Pigmented Spitz naevi typified by a globular pattern combined with reticular depigmentation (inverse network).

Figure 3. The typical dermoscopic pattern of non-pigmented Spitz naevi consists of regularly distributed dotted vessels, usually associated with an inverse white network (a). In elevated or nodular naevi, the vessels might project as coiled (b), hairpin (c) or linear irregular (d). The

pattern should be interpreted as spitzoid only if the vessels are distributed regularly and are surrounded by whitish halos or lines (inverse network).

Figure 4. The 4 patterns that can be considered as suggestive of a Spitz naevus: starburst (a), globular with reticular depigmentation (b) dotted vessels with inverse network corresponding to a flat lesion and globular/coiled vessels with inverse network corresponding to a nodule.

Figure 5. The majority of atypical Spitz tumours dermoscopically exhibit an atypical/multicomponent pattern suggestive of melanoma (a). However, approximately 20% of them might dermoscopically mimic a non-pigmented Spitz naevus, showing dotted/glomerular vessels and white inverse network (b).

Figure 6. Dermoscopy of spitzoid melanoma typically reveals an atypical/multicomponent pattern with evident presence of melanoma-specific criteria (a,b). However, rarely, melanoma might perfectly mimic a pigmented (c) or non-pigmented (d) Spitz naevus.

Figure 7. A proposed algorithm for management of spitzoid-looking lesions.

Figure 8. Monitoring of a flat pigmented Spitz naevus typified by a starburst pattern (a). The naevus grows symmetrically to all directions (b) and finally reaches stabilization, which is dermoscopically recognized by the loss of peripheral pseudopods.

Figure 9. Monitoring of a flat pigmented Spitz naevus typified by a starburst pattern (a). This naevus grew asymmetrically acquiring an atypical pattern (b). When finally stabilized it acquired a pattern consisting of central hyperpigmentation and peripheral network. However,

the interpretation of the morphologic evolution in the intermediate stage was highly equivocal. Lesions evolving like this should rather be excised.