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# Clinical and dermoscopic features of atypical Spitz tumors: A multicenter, retrospective, case-control study

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**Background:** Few studies have described the clinical and dermoscopic features of atypical Spitz tumors.

**Objective:** We sought to describe the clinical and dermoscopic features of a series of atypical Spitz tumors as compared with those of conventional Spitz nevi.

**Methods:** This was a multicenter, retrospective, case-control study, analyzing the clinical and dermoscopic characteristics of 55 atypical Spitz tumors and 110 Spitz nevi that were excised and diagnosed histopathologically.

**Results:** The majority of atypical Spitz tumors presented clinically as a plaque or nodule, dermoscopically typified by a multicomponent or nonspecific pattern. A proportion of lesions (16.4%) exhibited the typical nonpigmented Spitzoid pattern of dotted vessels and white lines under dermoscopy. Nodularity, ulceration, linear vessels, polymorphic vessels, white lines, and blue-white veil were associated with atypical Spitz tumors by univariate analysis, but only nodularity and white lines remained significant after multivariate analysis. In contrast, a pigmented typical Spitzoid pattern was a potent predictor of Spitz nevi, associated with 6.5-fold increased probability.

**Limitations:** Differentiation from Spitzoid melanoma and other nonmelanocytic lesions was not investigated.

**Conclusion:** Atypical Spitz tumors are polymorphic melanocytic proliferations with a nodular clinical appearance. Dermoscopically they demonstrate a multicomponent and nonspecific pattern. A typical nonpigmented Spitzoid pattern on dermoscopy (with dotted vessels and white lines) does not exclude atypical Spitz tumors. (J Am Acad Dermatol 2015;73:777-84.)

**Key words:** atypical Spitz tumor; dermoscopy; histopathology; melanoma; skin cancer; Spitz nevus.

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Atypical Spitz tumors are defined as melanocytic proliferations with intermediate histopathologic features between Spitz nevi and Spitzoid melanoma, carrying uncertain malignant potential.<sup>1-9</sup> The exact clinicopathologic definition of atypical Spitz tumors is a matter of ongoing debate among dermatopathologists. Some opinion leaders assert that only 2 diagnostic categories can be ascribed to Spitzoid lesions, namely, Spitz nevi and Spitzoid melanoma.<sup>5</sup> Others suggest that Spitzoid lesions are on a morphobiologic spectrum ranging from benign to clear-cut malignant lesions, with atypical Spitz tumors placed in the middle of this spectrum.<sup>6</sup> Since the first description, by Smith and coworkers<sup>2</sup> in 1989, several studies have investigated the histopathologic features of atypical Spitz tumors. There remains a lack of consensus, with diagnostic agreement among dermatopathologists consistently lower than for non-Spitzoid melanocytic neoplasms.<sup>4</sup> Atypical Spitz tumor is a diagnostic definition increasingly used by pathologists, presenting the clinician with difficult patient treatment decisions.<sup>10-12</sup>

Despite numerous histopathologic studies, few have described the clinical and dermoscopic features of atypical Spitz tumors.<sup>8,10,12,13</sup>

We compared clinical and dermoscopic images of a series of atypical Spitz tumors with those of a control group of conventional Spitz nevi to identify diagnostic features that might be used in distinguishing these 2 entities.

## METHODS

We conducted a multicenter, case-control study analyzing clinical and dermoscopic characteristics of 55 atypical Spitz tumors and 110 Spitz nevi that were excised and diagnosed histopathologically. Clinical and dermoscopic images of atypical Spitz tumors were collected from the databases of 7 pigmented lesions clinics in Italy (Reggio Emilia, Naples, Modena, Turin, Milan) and Spain (Barcelona, Tarragona). The inclusion criterion was the availability of a clinical and dermoscopic image of a histopathologically diagnosed atypical Spitz tumor. A control group of 110 consecutively selected Spitz nevi was obtained from the database of the Skin Cancer Unit, Arcispedale Santa Maria Nuova-Istituto Di Ricovero e Cura a

Carattere Scientifico (ASMN-IRCCS), Reggio Emilia. The study period was 2003 to 2014. All lesions were examined by dermatopathologists specialized in the diagnosis of melanocytic skin tumors. Clinical images were acquired using a high-resolution digital camera. Dermoscopic images were captured using polarized or nonpolarized dermoscopes (DermLite Foto, 3Gen LLC, Dana Point, CA).

Clinical information included the age and sex of each patient, and location of the tumor. For the atypical Spitz tumors group, additional information included sentinel lymph node biopsy status, performance of wide excision (with at least 1-cm clear margins) after initial biopsy, years of follow-up, and outcome.

Clinical and dermoscopic images were evaluated in agreement by 2 observers (E. M. and G. A.) blinded with respect to the histopathologic diagnosis. When no

agreement was achieved, a third evaluator (A. L.) was involved. Clinical evaluation included the assessment of palpability (macule, papule, plaque, nodule). The presence of ulceration and pigmentation were evaluated on dermoscopic images. Ulceration was scored as present or absent. Each lesion was defined as amelanotic (absence of pigmentation), hypomelanotic (pigmentation involving <50% of the lesion), or pigmented (pigmentation involving >50% of the lesion).<sup>14</sup>

Concerning dermoscopic characteristics, each lesion was assigned to a global pattern according to the following definitions: (1) multicomponent pattern: combination of at least 2 different predominant features within a given lesion; (2) typical pigmented Spitzoid pattern: a pigmented lesion with regular starburst appearance (composed of streaks or large globules symmetrically distributed at the periphery); (3) typical nonpigmented Spitzoid pattern: a hypopigmented/amelanotic lesion with dotted vessels and/or reticular depigmentation<sup>15</sup>; (4) globular pattern: brown globules involving most of the lesion; (5) reticular pattern: pigment network occupying most of the lesion; (6) homogeneous pattern: homogeneous pigmentation involving most of the lesion; and (7) nonspecific pattern: global pattern not ascribable to any of the above categories.

The presence of local dermoscopic features was also assessed, according to the definitions

## CAPSULE SUMMARY

- Few studies describe the clinical and dermoscopic features of atypical Spitz tumors.
- We found that atypical Spitz tumors typically appear as nodules with a multicomponent or nonspecific pattern on dermoscopy. However, atypical Spitz tumors can present as amelanotic and hypomelanotic nodules with a typical Spitzoid pattern.
- These observations may help clinicians in selecting which Spitzoid tumors merit excision irrespective of patient age.

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