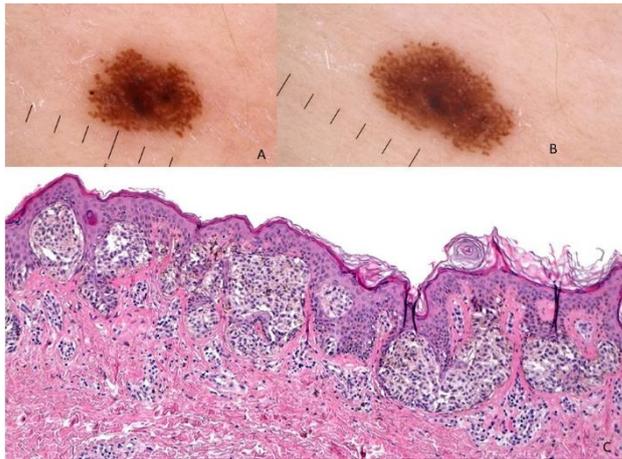


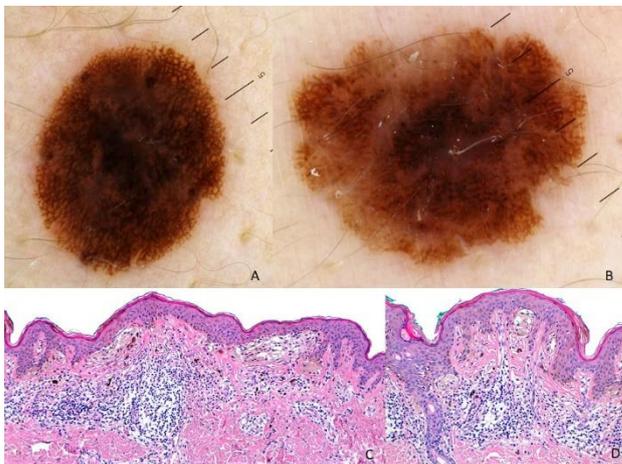
# Clinicopathologic and dermoscopic features of 20 cases of Spark's Nevus, a dermoscopic simulator of melanoma.

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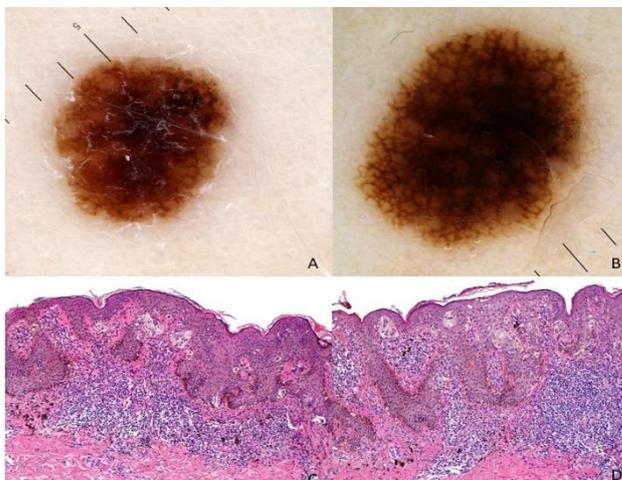
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Case #9. **A)** Dermoscopy at baseline: Globular pattern with central hyperpigmentation. **B)** Dermoscopy at follow-up visit (12-month): Enlarged lesions showing a globular pattern with asymmetry on 1 axis, central slightly hyperpigmented structureless area and few pseudopods at the periphery. **C)** Histology showed a junctional melanocytic proliferation organized in irregular, cohesive nests composed by epithelioid melanocytes and with elongation of rete ridges. In the dermis few melanophages are present. This lesion was BRAF V600E mutated.



Case #11. **A)** Dermoscopy at baseline: Reticular pattern with central slightly hyperpigmented structureless area and atypical network. **B)** Dermoscopy at follow-up visit (15-month): Enlarged lesions showing a multicomponent pattern with asymmetry on 2 axes, atypical network, irregular dots, central slightly hypo- and hyperpigmented structureless area. **C-D)** Histology showed a junctional melanocytic proliferation organized in irregular, cohesive nests composed by epithelioid melanocytes, elongation of rete ridges and concentric fibroplasia.



Spark nevus is a particular type of melanocytic nevus, with histology that shows features of both Spitz's and Clark's nevus. Detailed dermoscopic features in a series of Spark nevi have not been described yet. We performed a monocentric retrospective observational study on 20 lesions of Spark nevus excised to 19 patients (M:F=10:9; mean age: 37,6 years;), reviewed by five experts in dermoscopy and two dermatopathologists. The histological review confirmed that Spark nevi were mostly symmetric (80%), well circumscribed (100%), mainly compound (65%) melanocytic lesions with either epithelioid (55%) or spitzoid (45%) cell morphology and bridging of the nests (100%). Spark nevi were more frequently found on the trunk (85%) in patients with a history of sunburns in childhood (84%), skin phototype III (79%) and with high nevus count (>100 nevi, 7 patients (36%)). Upon dermoscopy we observed different general pattern: multicomponent (40%), reticular-globular-homogeneous (15%), globular homogeneous (15%), reticular (15%), reticular-globular (5%), homogeneous (5%) and globular (5%). Spark nevi showed frequently dermoscopic asymmetry (63%), brown color (90%) with areas of central hyperpigmentation (41%) and peripheral hypopigmentation (28%), atypical pigment network (48%), irregular globules (42%), irregular dots (31%), irregular blotches (16%), blue whitish-vel (13%), peripheral island (25%), irregular hyperpigmented areas (12%), regression (33%). BRAF mutation was present in seven of the 10 analyzed cases (70%); all these cases presented a history of evolution. In conclusion, Spark nevi occur on the trunk of young adults with high nevus count and history of sunburns; dermoscopic features are protean, oft atypical and suspicious of melanoma.

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### What does this study add?

- Spark's nevi are under-diagnosed or not even always reported in histological diagnosis by most dermatopathologists but are quite frequent in routine histopathological work and are probably reported under other synonyms.
- Dermatologist and dermatopathologists should become aware how to recognize and manage Spark's nevi, a clinical and dermoscopic simulator of melanoma.

Case #3. **A)** Dermoscopy at baseline: Reticular-homogeneous pattern with central slightly hyperpigmented structureless area and irregular dots. **B)** Dermoscopy at follow-up visit (12-month): Enlarged lesions showing a reticular-homogeneous pattern with asymmetry on 1 axis, central slightly hyperpigmented structureless area and irregular dots. **C-D)** Histology showed a junctional melanocytic proliferation organized in irregular, cohesive nests composed by epithelioid melanocytes, elongation of rete ridges with basal hyperpigmentation and concentric fibroplasia. In the dermis few melanophages and a dense superficial lymphohistiocytic infiltrate are present. This lesion was BRAF V600E mutated.