

Correspondence

Differential diagnosis of Lisch nodules under dermoscopy

Dear Editor,

Lisch nodules are elevated, melanocytic hamartomas located in the iris that appear in neurofibromatosis 1 (NF-1). They are the most common ophthalmological sign in NF-1. Two or more of these nodules, observed with slit-lamp examination, constitute a diagnostic criterion of the illness. Dermoscopy has recently proven to be a useful tool for the diagnosis of Lisch nodules.¹⁻³ Even if they can occasionally be seen with the naked eye, a magnified examination is advisable to evaluate the pigmented structures of the iris in order to distinguish them from other pigmented lesions.

We present five cases observed in our Dermatology and Ophthalmology Departments. We performed a noncontact ocular dermoscopic examination with DermLite Hybrid™ dermatoscope in five patients (three males and two females) aged 12, 18, 23, 27, and 32 years old presenting with more than six *café-au-lait* spots (Table 1). Two patients presented with neurofibromas. Dermoscopic images were recorded using an Olympus™ digital camera, although all patients were also observed with slit-lamp examination. On dermoscopy, all patients had visible anomalies of the iris. Only three patients had Lisch nodules, one of them in association with iris nevi.

Lisch nodules under dermoscopy appeared as brownish-yellowish, rounded, disperse, dome-shaped elevations rising from the surface of the iris (Fig. 1a,b). Iris crypts appeared as diamond-shaped lacunae under dermoscopy (Fig. 1c). Iris nevi under dermoscopy appeared as flat or minimally elevated, densely pigmented lesions with blurred margins (Fig. 1d). One patient presented with combined Lisch nodules and iris nevi at 6 hours (Fig. 1e). These findings were confirmed by the slit-lamp examination.

Although Lisch nodules have a highly characteristic appearance, a few iris lesions may mimic this condition. A recent published series illustrates that Lisch nodules tend to have a different color according to the underlying tissue.¹ On blue or green irises, Lisch nodules are highly contrasted presenting with a medium brown color.³ However, on brown irises, Lisch nodules are a lighter shade of brown and are more

difficult to distinguish from the background.¹ These findings match our results.

The differential diagnosis of the structures of the iris includes:⁴

- Iris crypts are a nonpathologic feature of the irises that represent localized areas of hypoplasia in the iris stroma.⁴ Under dermoscopy, they appeared as diamond-shaped lacunae.
- Iris mammillation, as smooth, conical iris protuberances regularly spaced, similar in pigmentation to the underlying tissue.
- Iris nevi, as flat or minimally elevated, densely pigmented lesions with blurred margins.
- Brushfield spots appear in Down's syndrome as white and yellow spots evenly arranged around the periphery of the iris in a ring-like formation.
- Wolfflin nodules may occur in normal light-eyed individuals, similar to Brushfield spots but smaller and more peripherally located.

In conclusion, the reported cases highlight the utility of dermoscopic examination to visualize different iris characteristics. It is important to distinguish some nonpathologic features from other conditions which potentially can represent cardinal criteria to severe diseases. Although the observation of Lisch nodules by dermoscopy can be useful for an early diagnosis of NF-1, the dermatologist must keep in mind the differential diagnosis of the various pigmented lesions of the iris in order to perform an accurate clinical judgment.

Elisabeth Gómez-Moyano^{1*}, MD, PhD 

Maria García Lorente², MD

Leandro Martínez Pilar¹, MD, PhD

¹Dermatology Department, Hospital Regional Universitario de Málaga, Málaga, Spain

²Ophthalmology Department, Hospital Regional Universitario de Málaga, Málaga, Spain

*E-mails: elisabeth.gomez.moyano@gmail.com; eligm80@hotmail.com

Table 1 Characteristics of the patients

Age	Sex	Café-au-lait spots >6	Neurofibromas	Dermoscopic features
12	Male	Yes	Yes	Lisch nodules (Fig. 1a)
18	Male	Yes	Yes	Lisch nodules (Fig. 1b)
23	Female	Yes	No	Iris crypts (Fig. 1c)
27	Female	Yes	No	Iris nevi (Fig. 1d)
32	Male	Yes	No	Lisch nodules and iris nevi (Fig. 1e)

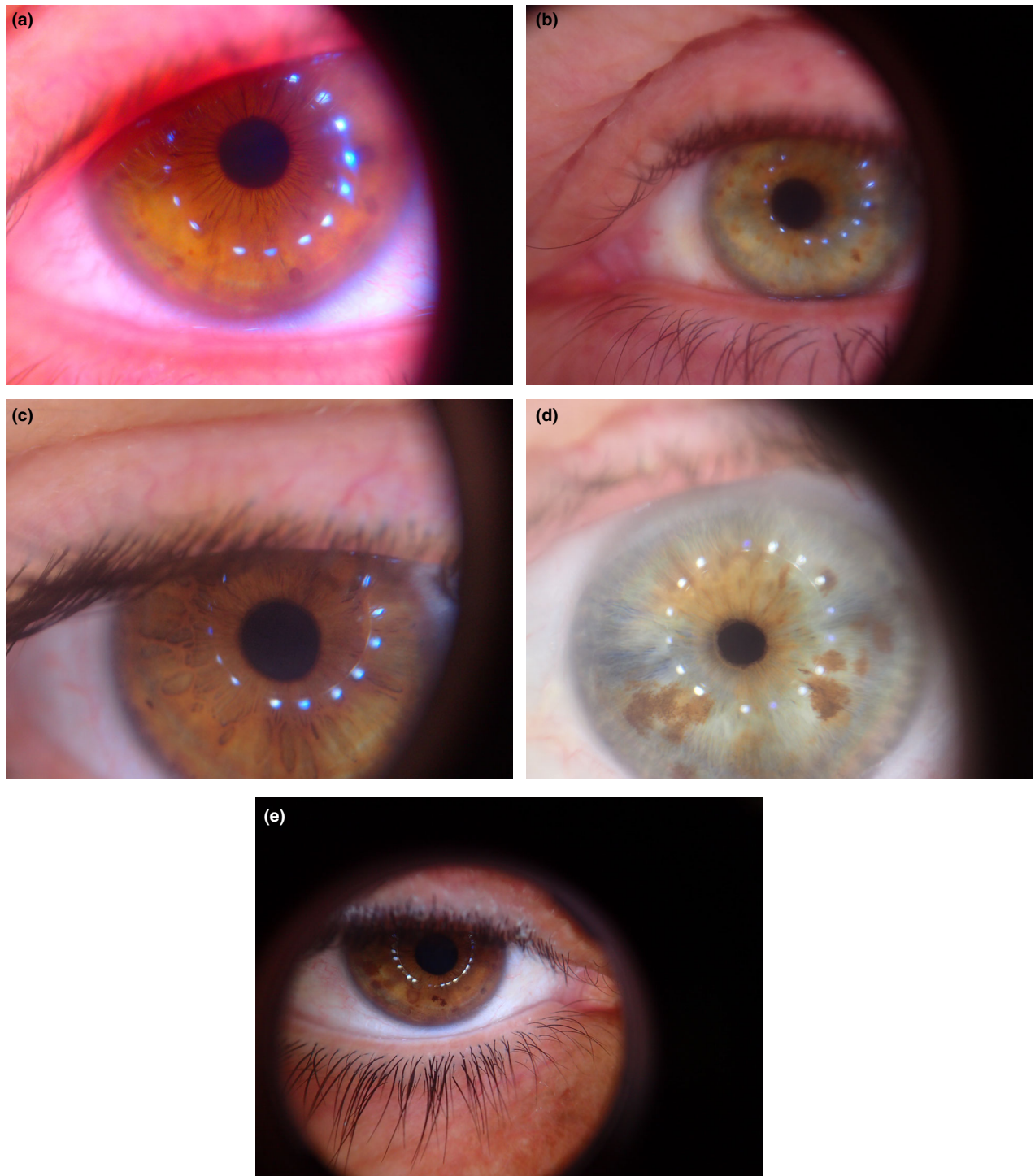


Figure 1 (a) Brown-eyed patient with Lisch nodules. Iris lesions appear as cream colored, well-defined, dome-shaped nodules, irregularly distributed on the anterior surface of the iris (Dermlite Hybrid $\times 10$ polarized light). (b) Multiple Lisch nodules in a light-colored iris. They appear as light brown elevations rising from the surface of the iris (Dermlite Hybrid $\times 10$ polarized light). (c) Multiple iris crypts shown as diamond-shaped lacunae in the anterior border of the iris (Dermlite Hybrid $\times 10$ polarized light). (d) Blue-eyed patient with iris nevi which appears as flat, pigmented lesions (Dermlite Hybrid $\times 10$ polarized light). (e) Numerous, dispersed Lisch nodules and a solitary iris nevus located at 6 hours (Dermlite Hybrid $\times 10$ polarized light)

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