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# Dermoscopy of Pigmented Lesions of the Mucosa and the Mucocutaneous Junction

## Results of a Multicenter Study by the International Dermoscopy Society (IDS)

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**Objective:** To better characterize the dermoscopic patterns of mucosal lesions in relation to the histopathologic characteristics.

**Design:** Retrospective and observational study.

**Setting:** Fourteen referral pigmented lesion clinics in 10 countries.

**Patients:** A total of 140 pigmented mucosal lesions (126 benign lesions, 11 melanomas, 2 Bowen disease lesions, and 1 metastasis) from 92 females (66%) and 48 males (34%) were collected from October 2007 through November 2008.

**Main Outcome Measures:** Scoring the dermoscopic patterns (dots, globules, or clods, circles, lines, or structureless) and colors (brown, black, blue, gray, red, purple, and white) and correlation with the histopathologic characteristics.

**Results:** Based on univariate analysis and 2 diagnostic models, the presence of structureless zones inside the le-

sions with blue, gray, or white color (the first model) had a 100% sensitivity for melanoma and 92.9% sensitivity for any malignant lesion, and 82.2% and 83.3% specificity for benign lesions in the group with melanoma lesions and the group with malignant lesions, respectively. Based on the colors (blue, gray, or white) only (the second model), the sensitivity for the group with melanoma was 100% and for the group with any malignant lesion was 92.9%, and the specificity was 64.3% and 65.1%, respectively. Patients with malignant lesions were significantly older than patients with benign lesions (mean [SD] ages, 60.1 [22.8] years vs 43.2 [17.3] years, respectively).

**Conclusion:** The combination of blue, gray, or white color with structureless zones are the strongest indicators when differentiating between benign and malignant mucosal lesions in dermoscopy.

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**D**ERMOSCOPY IS WIDELY USED for the diagnosis of pigmented and nonpigmented lesions of the skin, nail apparatus, and hairy and volar skin, but it is yet not well established for pigmented mucosal lesions.<sup>1-3</sup> A major reason for this might be that mucosal lesions are rare in the clinical setting and have not been well characterized by dermoscopy. In addition, it is unknown if dermoscopy improves the diagnostic accuracy of pigmented mucosal lesions in comparison with examination with the unaided eye. Only case reports and small case series have been published so far.<sup>4-12</sup> The largest studies were by Lin et al,<sup>13</sup> which included 40 mucosal lesions, and by Ronger-Savle et al,<sup>14</sup> which included 68 lesions on

the vulva only. To obtain a larger number of cases, the International Dermoscopy Society (IDS) launched a multicenter retrospective, observational study to better characterize the dermoscopic features of benign and malignant pigmented mucosal lesions.<sup>15</sup>

## METHODS

### PATIENT SELECTION AND DESIGN

In this retrospective, observational study, patients' data and dermoscopic images of histopathologically diagnosed mucosal tumors were included from 14 pigmented lesion clinics in 10 countries (Argentina, Austria, Belgium, Germany, Italy, Romania, Spain, Switzerland, Turkey, and the United States).

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