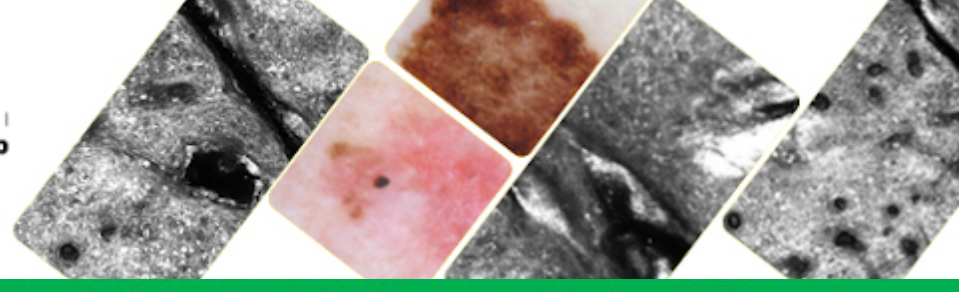
International Confocal Group



Characterizing and Distinguishing Pigmented Mucosal Lesions: New Insights from Reflectance Confocal Microscopy

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Introduction & Objectives

Classifying pigmented mucosal lesions using clinical and dermoscopic images can be challenging[1,2]. Reflectance confocal microscopy (RCM) can identify features that better categorize mucosal melanosis[3,4], but no confocal classification currently exists. Mucosal melanosis lesions are variable and can resemble mucosal melanoma[5], making differential diagnosis difficult with dermoscopy alone. The primary endpoint was to classify melanosis based on RCM features and to observe how they change over time. The secondary endpoint involved assessing the clinical, dermoscopic, and confocal differences between benign pigmented lesions and melanomas, evaluating RCM's impact on diagnostic decisions.

Methods

This retrospective observational study involved mucosal pigmented lesions from 129 patients (70% women, mean age 50.27 ± 16.83 years) evaluated from February 2018 to February 2022 at San Gallicano Hospital in Rome (IRB n°1098/18). Dermoscopy and RCM images, along with demographic and clinical characteristics, were recorded. To assess the variable nature of melanosis over time lesions with atypical presentations underwent clinical/imaging follow-ups or biopsy.

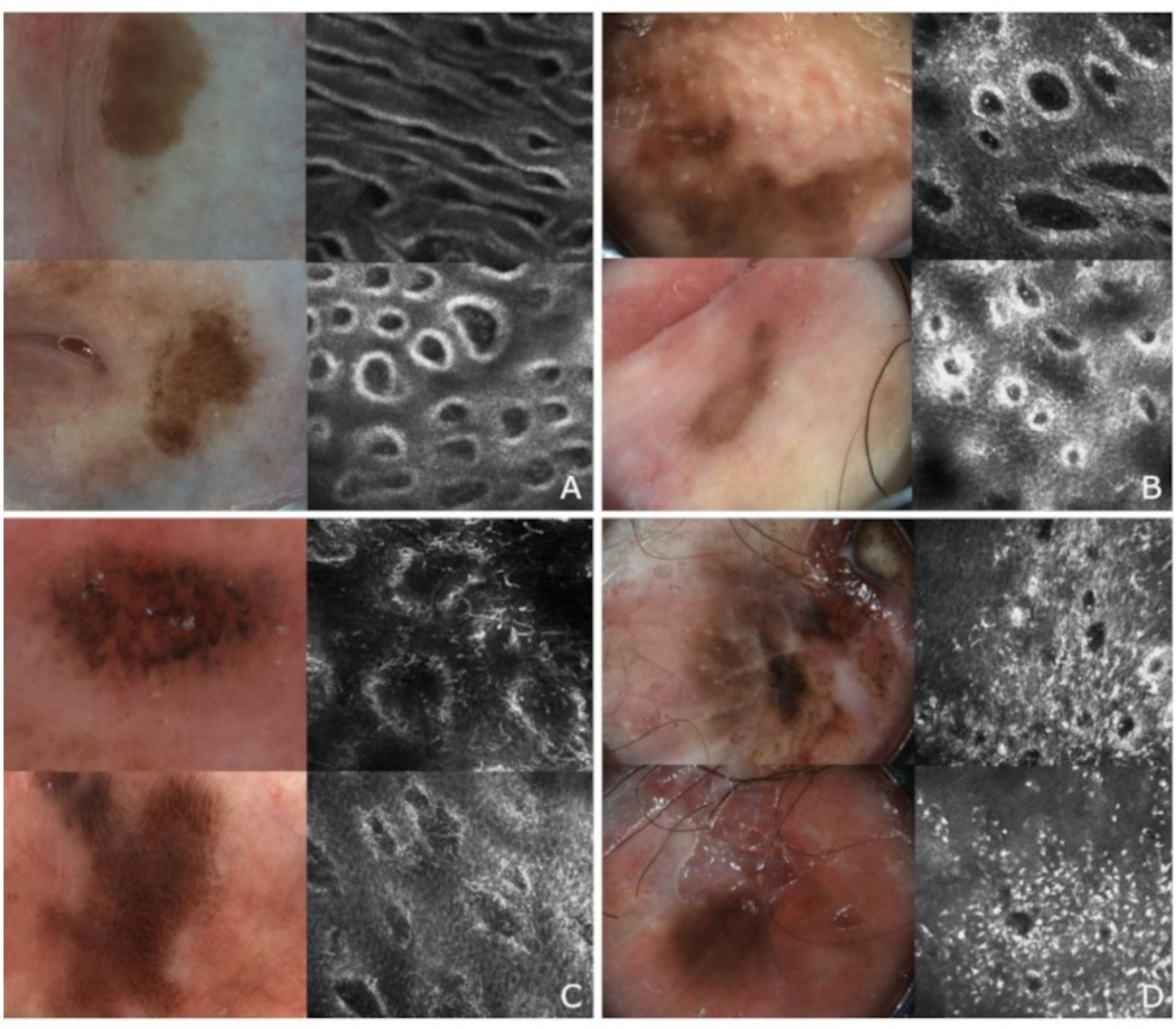
Results

This retrospective study includes 222 exams (RCM and dermoscopy) from 135 pigmented mucosal lesions from 129 patients.. Based on the results, melanoses were categorized into three types according to the presence and distribution of dendritic cells and rimmed papillae. At baseline, 78 lesions were classified as type one melanosis (no dendritic cells and rimmed papillae), 24 as type two melanosis (dendritic cells and rimmed papillae) and 19 as type three melanosis (dendritic cells with partially rimmed or without rimmed papillae). Changes in classification type during follow-up examinations are shown in Figure 1. The median number of follow-ups for types one, two, and three melanosis were 1, 1.5, and 2, respectively with a median number of days of 323, 126 and 305.

Conclusions

Type one melanosis is the most stable, while type two shows relative stability and type three melanosis is the most unstable and concerning due to its potential to mimic mucosal melanoma (Figure 1). Lesions that present brown color without a structureless pattern are benign, and no RCM assessment is suggested. Due to mutable nature of melanosis over time and its potential to mimic melanoma RCM analysis is strongly suggested to classify pigmented mucosal lesions. Further prospective and longitudinal studies are needed to validate these findings.

A representation of all the three types of melanosis and melanoma. On the upper left type 1 melanosis shows brown patches with homogeneous pigmentation visible in dermoscopy and monomorphic and rimmed papillae in RCM analysis, without dendritic cells (Fig 1A). On upper right type 2 melanosis show feature brown-to-grey patches in dermoscopy, and rimmed papillae with dendritic cells evident at the junction in the RCM images (Fig 1B). On the bottom left type 3 melanosis display brown-to-grey patches with shade of blue in dermoscopy, and RCM images showing non-rimmed or partially rimmed papillae, dominated by dendritic cells at the junction and in the spinous layer (Fig 1C). On the bottom left melanomas, two multicolored patches with a structureless mix of brown, black, and white areas indicating regression are presented, mirrored in RCM images by the destruction and invasion of the spinous layer, along with polymorphic hyperreflective dendritic cells that are non-homogeneously distributed, and non-rimmed, non-edged papillae (Fig 1D).



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