DERMOSCOPY AND SKIN IMAGING

REFLECTANCE CONFOCAL MICROSCOPY: A NEW ALGORITHM TO DIFFERENTIATE CHALLENGING MELANOCYTIC SKIN LESIONS

Raquel De Paula Ramos Castro [(1)] - Juliana Casagrande Tavoloni Braga [(1)] - Mariana Petaccia De Macedo [(2)] - Clóvis Antonio Lopes Pinto [(2)] - José Humberto Tavares Guerreiro Fregnani [(3)] - Gisele Gargantini Rezze [(4)]

Ac Camargo Cancer Center, Department Of Cutaneous Oncology, São Paulo, Brazil [(1)] - Ac Camargo Cancer Center, Department Of Pathology, São Paulo, Brazil [(2)] - Ac Camargo Cancer Center, Department Of Oncology, São Paulo, Brazil [(3)] - Dermaimage Medical Associates, Department Of Cutaneous Oncology, São Paulo, Brazil [(4)]

Introduction: Some melanocytic lesions don't present enough clinical and dermoscopic features to allow ruling out a possible melanoma diagnosis.

Objective: Creating an algorithm to differentiate these doubtful melanocytic lesions.

Materials and Methods: 110 lesions were submitted to reflectance confocal microscopy (RCM) and subsequently surgical excision for histopathological diagnosis, which was considered the gold standard for final diagnosis. For statistical purpose, the lesions were grouped according to the final histopathological diagnosis (common melanocytic nevus, atypical melanocytic nevus or melanoma). Simple and multiple logistic regressions were used for statistical analysis.

Results: Three RCM features were able to statistically significant differentiate benign nevi from melanomas: "nucleated roundish cells at DEJ" (p = 0.048), "hotspot at DEJ" (p = 0.032) and "sheet of cells" (p = 0.04). These features were used to elaborate an algorithm that indicates the probability of a doubtful melanocytic lesion being a melanoma: 5.5% if all are absent, 31.5% to 37.5% if one is present, 79.5% to 83.9% if two are present and 97.5% if all three are present. Also, different scores were statistically determined for the presence of each feature: 92 for "roundish nucleated cells at DEJ", 100 for "peripheral hotspot at DEJ" and 88 for "sheet of cells". A score-based algorithm with a cut-off of 158 points, related to 70% probability of melanoma diagnosis, was established. This algorithm was later tested independently by 3 blinded experienced dermatologists in 30 other doubtful melanocytic lesions for validation, and related by ROC curve to 100% sensitivity, 83.3% specificity, 60% PPV, 100% NPV and 86.67% accuracy for detecting a melanoma

Conclusions: This research shows that an algorithm based on the presence of significant

RCM features can be useful for identifying melanomas among clinical and dermoscopic doubtful melanocytic lesions.