Reviewer's report

Title: Characterization of Digital Medical Images Utilizing Support Vector Machines

Version: 3 Date: 27 November 2003

Reviewer: Stefania Seidenari

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3 major points were not sufficiently addressed by the Authors.

Point 4. The definition "Vertical / Radial Growth phase", referred to the whole or a part of the lesion, is not acceptable. These definitions are worldwide employed for histologic definition, and not for clinical aspects. These terms have to be changed (i.e. "Vertical phase" into "whole lesion" and "Radial phase" into "dark area inside").

Point 5. The results obtained by image analysis of the "Radial Growth Phase" in melanomas (a manually selected region inside a lesion) have to be compared only with an analogous "manually selected region" with the same characteristics inside a nevus, and not with the whole lesion parameters (these are two different things). If dysplastic nevi do not present the dark area, this analysis have to be removed from this paper and eventually introduced in a different paper in which data from selected areas inside two different populations (melanomas and nevi) are compared.

Point 7. The "greatest diameter" runs well only because the population is selected (if congenital nevi are included, its value decreases) and does not give major information in respect of the clinical evaluation of the lesion (image analysis is introduced to have more information than clinical evaluation). Removing this parameter I think that the diagnostic performance will decrease, but the value of the paper will increase giving to the reader the sensation of the efficacy of the system for melanoma discrimination.

Minor concern: in the introduction the "clinical" ABCD rule (A=asymmetry, B=border, C= colors and D= diameter) is described, but its reference (14) is referred to the ABCD rule for "dermoscopy" (A=shape and/or pigment distribution asymmetry; B=number of segments with abrupt border cut-offs; C=number of colors; D= DIFFERENTIAL DERMATOSCOPIC STRUCTURES, such as pigment network, globules etc.). The text has to be changed or the correct reference has to be introduced.

I believe that in the present state the article is misleading for the readers. I warmly suggest to introduce the above listed modifications.