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Imaging Mass Spectrometry –A helpful diagnostic method for atypical Spitzoid neoplasms

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Abstract

Previously, using Imaging Mass spectrometry (IMS) we found proteomic differences between Spitz nevi (SN) and Spitzoid malignant melanomas (SMM), melanomas that resemble histologically SN. We investigated whether IMS can be helpful diagnostically in difficult Atypical Spitzoid Neoplasms (ASN), cases in which a diagnosis of benign SN or malignant SMM cannot be made with certainty. 26 cases of ASN from the Yale Spitzoid Neoplasm Repository and 7 other institutions from the US and throughout the world were retrospectively analyzed by IMS. A diagnosis of either SN or SMM was rendered by IMS, which was then correlated with the histopathologic diagnosis and clinical outcome. In 20/26 (77%) cases of ASN the diagnosis provided by IMS was SN. In all 20 cases the clinical outcome demonstrated no recurrence, metastases, or death (mean follow-up: 6.5 years). The remaining 6/26 (23%) cases were diagnosed byIMS as SMM. In 5 cases there was either a sentinel lymph node or other lymph nodes metastases. In one ASN case, in which SMM was favored by both histopathology and IMS, one SLN was negative; the patient remained alive with no evidence of disease (ANED) at 3.5-years. All 6 patients diagnosed as SMM by IMS were ANED (mean follow-up: 4.3 years). Based on clinical outcome and lymph node metastasis data, the sensitivity of IMS for the diagnosis of SMM was 100% and the specificity was 95%. IMS is a new and promising ancillary method in the diagnosis of difficult ASN.

Biography

Rossitza Lazova, MD has completed a residency in Anatomic and Clinical Pathology and a fellowship in Dermatopathology with Dr. A. Bernard Ackerman. She is an Associate Professor of Dermatology and Pathology and Director of the Dermatopathology Fellowship at Yale University. Dr. Lazova has published more than 60 papers in reputed journals and is an author of a textbook titled Atlas of Practical Mohs Histopathology. She has established the Yale Spitzoid Neoplasm Repository and is an internationally recognized expert in the field of Spitzoid melanocytic neoplasms. She has pioneered the use of Mass Spectrometry in the diagnosis of difficult melanocytic lesions.