The utility of re-excising mildly and moderately dysplastic nevi: A retrospective analysis

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Background: The management of dysplastic nevi (DN) is a highly debated and controversial topic within the dermatology community. Clinicians agree that margin-positive severely DN should be removed with a surgical margin, however, there is disagreement surrounding the appropriate management of margin-positive mildly and moderately DN.

Objective: We sought to evaluate the utility of re-excising margin-positive mildly and moderately DN.

Methods: A retrospective chart review was conducted on all adult patients given the diagnosis of a biopsy-proven DN from 2010 through 2011. The primary outcomes were defined as the presence of melanocytic residuum in re-excisional specimens and a clinically significant change in diagnosis.

Results: A total of 1809 mildly and moderately DN were diagnosed from 2010 through 2011. In all, 765 (42.3%) of these lesions were found to have positive surgical margins during biopsy, and 495 (64.7) of the 765 lesions were subsequently re-excised. Melanocytic residuum was present in 18.2% of re-excisional specimens. Re-excision resulted in a clinically significant alteration of the diagnosis in only 1 case (0.2%).

Limitations: Limitations include retrospective design and inability to assess for malignant transformation given limited follow-up.

Conclusions: Re-excising mildly and moderately DN results in a low histopathological yield and rarely results in a clinically significant change in diagnosis. As such, clinical monitoring of margin-positive lesions may be warranted. (J Am Acad Dermatol 2014;71:1071-6.)

Key words: dermatopathology; dysplastic nevus; melanoma; nevus; pigmented lesions; surgical management.

The concept of the dysplastic nevus (DN) was first described in 1978 by both Clark et al[1] and Lynch et al[2] in 2 separate publications describing a phenotypic syndrome in melanoma-prone families. The term "dysplastic nevus" itself was introduced 2 years later[3] and these publications classified the DN as a premalignant lesion.[1-3] In recent years, this very notion has become controversial in the dermatology and dermatopathology communities,[4-6] and ambiguity continues to exist surrounding the possible progression of these lesions to melanoma. The concept that the DN may represent a premalignant lesion is further propagated by the fact that many pathologists grade the atypia found in DN from mildly to severely dysplastic based on histopathological criteria. As a result of the continued debate within the scientific community surrounding the biological behavior of DN, there are

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no uniformly accepted guidelines to aid clinicians with the management of these lesions.

Currently the majority of clinicians agree that all severely DN should be re-excised with appropriate surgical margins[7]; however, data suggest that there is disagreement among dermatologists managing mildly or moderately DN, and the decision to re-excise is highly influenced by the involvement of surgical margins during initial biopsy.[7,8] According to a recent survey, 9% of respondents agreed that they would re-excise a moderately DN with clear margins versus 81% of individuals who would re-excise moderately DN with positive margins.[7]

In clinical practice, the pathology of a re-excised margin-positive mildly and moderately DN often shows dermal scar rather than residual atypical nevus.[9-12] DN are among the most common conditions treated in the dermatology clinic. As such, the treatment of these challenging lesions is both time-intensive and costly. In the current health care climate, there is ever-growing focus on improving the quality of health care while minimizing unnecessary costs. In this study, we sought to investigate the utility of re-excising mildly and moderately DN based on the prevalence of melanocytic residuum in incompletely excised lesions.

CAPSULE SUMMARY

- The management of mildly and moderately dysplastic nevi varies among physicians.
- Re-excising margin-positive mildly and moderately dysplastic nevi yielded melanocytic residuum in only 18% of cases, with a clinically significant change in diagnosis in only 1 of 495 patients.
- Given these results, clinical monitoring of margin-positive mildly and moderately dysplastic nevi, rather than re-excision, may be considered.

METHODS

This study was approved by the Partners Institutional Review Board. A retrospective chart review was conducted using the Research Patient Data Registry on all adult patients seen at Massachusetts General Hospital Dermatology Associates from January 1, 2010, through December 31, 2011, using the search terms "nevus," "blue nevus," "neoplasm of uncertain behavior," "pigmented nevus of skin," and "biopsy." All biopsy-proven DN were included for review. Any biopsy that was performed for "sampling" purposes rather than clinical clearance was excluded. Patient demographics, size of lesion, location of lesion, method of biopsy, type of nevus, degree of cytologic atypia, involvement of surgical margins, and method of re-excision were all recorded. Positive surgical margins were defined as residual atypical melanocytes present at inked margins. Degree of dysplasia was graded using the University of Pennsylvania criteria[13] during routine clinical care.

The primary outcomes were defined as the presence of residual melanocytes in re-excisional specimens and a clinically significant change in diagnosis (defined as an upgrade in degree of atypia from mildly or moderately dysplastic to severely dysplastic or melanoma). Two lesions received a clinically significant upgrade in diagnosis during re-excision. These 2 lesions were re-reviewed by a dermatopathologist (M. P. H.) who was blinded to the original biopsy and re-excision diagnoses. Eighteen additional lesions in the melanocytic residuum group were randomly selected using a computerized randomization tool and also re-reviewed by the blinded dermatopathologist (M. P. H.) as controls. The χ^2 test was applied to compare proportions, and the t test was applied to compare means. Statistical significance was defined as P less than .05.

RESULTS

From 2010 through 2011, 2084 DN were biopsied at Massachusetts General Hospital. Of these, 1809 (86.8%) were diagnosed as mildly and moderately DN, and 765 (42.3%) of the mildly and moderately DN were classified as having atypical melanocytes extending to the margin. Older patients, patients with a history of melanoma, lesions on the lower extremity, junctional nevi, and mildly DN were found in larger proportions in the negative margin group whereas larger lesions, lesions on the head and neck, compound nevi, moderately DN, and nevi exhibiting features of congenital onset were more commonly observed in the margin-positive group (Table I) ($P < .05$). Nine percent of margin-negative lesions were initially removed via fusiform excision versus 2.2% of margin-positive lesions ($P < .001$); however, there was no statistically significant difference in lesion clearance when examining punch biopsy specimen versus shave removal ($P > .05$).

A total of 495 (64.7%) of the 765 margin-positive lesions were subsequently re-excised. In all, 405 (81.8%) of re-excisional pathology specimens showed dermal scar whereas 90 (18.2%) of specimens contained residual atypical nevus (Table II). Lesions that were diagnosed as compound nevi during initial