Polyclonality of BRAF mutations in acquired melanocytic nevi

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The polyclonality of BRAF mutations in melanocytic nevi suggests that mutation of BRAF may not be an initial event in melanocyte transformation, according to a new brief communication published online September 14 in the *Journal of the National Cancer Institute*.

To test the polyclonality of BRAF mutations, Minoru Takata, M.D., of the department of dermatology at the Shinshu University School of Medicine in Matsumoto, Japan, and colleagues separated approximately 50 single cells from each of 13 melanocytic nevi by using immunomagnetic beads or by laser-capture microdissection. They were then subjected to single-cell polymerase chain reaction and sequencing to determine BRAF mutations. In another experiment, BRAF and a neighboring single-nucleotide polymorphism were simultaneously amplified from nevi of four patients who were heterozygous for the polymorphism.

Although BRAF mutations were always found among nevus cells, cells that contained only wild-type BRAF predominated in nine of 13 nevi. When BRAF was sequenced from both alleles of four patients heterozygous for an adjacent polymorphism, both alleles harbored BRAF mutations.

"[P]olyclonality of BRAF mutations in the lesions of acquired melanocytic nevi suggests an alternative to the view that BRAF mutation is an initial event in melanocytic neoplasia," the authors write.