

FALSE POSITIVE FNA DUE TO HIGHLY SENSITIVE BRAF ASSAY

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Background/Purpose: False positive BRAF analysis on FNA have been rarely reported in the literature but may become more common with the advent of assays that can detect the BRAF V600 mutation even if it is present in only 2% of otherwise wild-type thyroid cells. We present a case of an indeterminate BRAF positive FNA that showed no evidence of cancer on final surgical pathology

Methods: Case report Literature Review

Results: 87 year old lady with indeterminate 3 cm nodule but BRAF positive cytology underwent thyroid lobectomy. Final pathology revealed a benign adenomatoid nodule. An area rich in tumor cells from the nodule was identified, labeled and microdissected for molecular testing which demonstrated only wild type BRAF at the analytical limit of the assay.

Discussion & Conclusion: Increasingly sensitive BRAF assays using dual-priming oligonucleotide-based multiplex PCR analysis can detect BRAF V600E if it is present in only 2% of cells within a population of wild-type cells. This increases the risk of false positive studies, particularly in cases of indeterminate FNA. Clinicians must caution patients in these circumstances that BRAF genetic testing may not have a 100% positive predictive value.