CLINICOPATHOLOGIC ASSOCIATION OF BRAF MUTATION IN PAPILLARY THYROID CANCER

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Background/Purpose: Recent studies have shown that BRAF mutation reflects poor prognosis of papillary thyroid cancer (PTC). However there are some contrary reports suggesting BRAF mutation may not predict poor prognosis of PTC in Japan and Korea because of the relatively high incidence of that mutation in these countries. Therefore, we investigated the relationship between BRAF mutation and clinicopathologic factors to elucidate clinical value of BRAF mutation as a predictor of poor prognosis among PTC patients.
Methods: From March 2010 to September 2012, we performed analysis of the BRAF mutation (assessing V600E point mutation of BRAF gene, exon 15, on chromosome 7q34 by real-time PCR kit) from 502 PTC patients who underwent thyroidectomy. We analyzed the relation between the mutation and known clinicopathologic risk factors of PTC.
Results: BRAF mutations were found in 352 of 502 patients (70.5%). On univariate analysis, BRAF mutations were more frequently detected in patients with lymph node metastasis (77.7% vs 66.7%). Classic PTC showed higher BRAF positivity than variant PTC (71.3% vs 30.3%). We could also confirm this association in multivariate analysis. BRAF mutation was not associated with age, sex, tumor size and extrathyroidal extension.
Discussion & Conclusion: The prevalence of BRAF mutation in PTC is as high as 70.5%. This study found that BRAF mutation is associated with classic PTC and lymph node metastasis.