OBJECTIVES

Differentiated thyroid cancer has usually good prognosis and long-term survival. Distant metastasis ratio is 5-15%. Metastases to cerebrum, breast, liver, kidney, muscle, and skin are relatively rare. The study of molecular mechanisms of PTC has demonstrated that BRAFV600E gene mutation is a significant event in the process of this disease (1).

CASE REPORT

55 year-old male patient who had multinodular goiter showed malignant cytology in his fine-needle-biopsy. Total thyroidectomy, neck dissection were performed. Pathology was consistent with PTC, diameter was 4.5 cm with vascular and perineural invasion, 11/13 lymph nodes had PTC infiltration. Bilateral cervical, mediastinal lymph node, bilateral multiple areas in lung, C4-C5 vertebrae had increased FDG uptake in PET/CT after surgery. Second-look neck dissection was performed. 33/46 lymph nodes had PTC infiltration. 200mCurie of RAI ablation therapy was given [TSH: 82 mIU/ml (0.34-5.6), thyroglobulin: 38817ng/ml (1.15-35), anti-thyroglobulin: 107IU/ml (0-115)]. On whole body scanning (WBS), radioactivity was detected neck, mediastinum and both chest sides. Because of high thyroglobulin levels, RAI ablation treatment with the dose of 250mCi was planned after one year of first ablation. On WBS, radioactivity was detected in region of mediastinal, axillary, hemithorax and liver. Patient didn't come to follow up about one year, then he was admitted to emergency department with headache and vomiting. 37x47mm mass with solid-cystic components in right side of cerebellum was detected in cranial-MRI (Figure 1a-1b). Patient was referred to neurosurgery clinic. There were multiple lymph nodes with pathological dimension in both axillary and mediastinal areas and multiple metastatic foci existed in bilateral lower lung and in liver and 8x5cm in left, 3.5 x2.5cm in right adrenal glands were consistent with metastases in CT (Figure 2). Cerebellar mass was excised. PTC infiltration was reported and BRAF V600E mutation was analyzed in cerebellar metastatic mass.

CONCLUSIONS

Conclusion: BRAFV600E mutations in PTC are associated with extrathyroidal spread, lymph node metastasis, tumor recurrence and mortality.

References