

# 78-year-old female patient with *BRAF* V600E lung cancer metastasized to the thyroid

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## THE SITUATION

- Patient with tumor in thyroid gland was diagnosed with thyroid papillary carcinoma after thyroidectomy. Osteoblastic metastasis and pulmonary lesions were also detected.

## THE CHALLENGE

- Based on the unusual clinical presentation (most thyroid tumors are of primary origin), in-depth molecular diagnosis was useful to differentiate between advanced thyroid carcinoma, lung carcinoma, and cancer of other primary origin.

## THE SOLUTION

- Using MassARRAY<sup>®</sup> Dx technology from Agena Bioscience and the Myriapod<sup>®</sup> Lung Status from Diatech Pharmacogenetics, it was determined that the patient suffered from metastatic involvement of *BRAF*-mutated lung adenocarcinoma to the thyroid gland with bony metastases. These types of tumors are extremely rare (only one case previously reported). Results were confirmed by immunohistochemistry.
- A tailored treatment including *BRAF* inhibitor dabrafenib led to partial response (RECIST criteria) with significant reduction of the interstitial involvement and partial resolution of the atelectasis after four months.

## FURTHER BACKGROUND INFORMATION

- This is one of the first reported cases of lung adenocarcinoma with *BRAF* V600E mutation that metastasized to the thyroid gland. The opportunity of a tailored treatment with *BRAF* inhibitor was only possible by in-depth molecular diagnosis.

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