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Synchronous primary lung cancers: a multidisciplinary approach in diagnosis

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ABSTRACT

Background. For patients with two or more primary cancers a correct diagnosis is critically important because prognosis and treatment vary considerably between multiple primary cancers and metastatic disease.

Case report. Two bilateral synchronous primary lung malignancies of different histological types were diagnosed and immunohistochemically confirmed in a 60-year-old woman. In biopsy specimens of the right lung pure squamous cell carcinoma was detected (stage IIIa). The tumor expressed AE1/AE3, cytokeratin 5 and 34βE12. In biopsy specimens of the left lung small cell carcinoma was detected (stage IIIa). The small cells expressed synaptophysin, chromogranin A and CD56. DNA was extracted from paraffin-embedded tissue of both tumors. Exons 5-9 of the *TP53* gene were examined for genetic mutations by polymerase chain reaction and DNA sequencing analysis. Direct sequencing of DNA isolated from the small cell carcinoma revealed a TGC to TTC mutation at codon 404 of *TP53* exon 5. In DNA isolated from the squamous cell carcinoma no *TP53* mutation was found. The tumors' different response to chemotherapy also suggested that they belonged to different histological types. The patient lived 24 months after the diagnosis, which is more typical for stage III than for stage IV lung carcinoma.

Conclusion. Discrimination of synchronous primary lung cancers from intrapulmonary metastases based only on clinical findings can be very difficult. Multidisciplinary diagnostic evaluation is therefore very helpful in cases like this, because a correct diagnosis will determine the best treatment for the patient and consequently a better prognosis.

Key words: synchronous primary lung cancers, *TP53*, multidisciplinary diagnostic assessment.

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