

Cabozantinib-related pneumothorax in rapidly responding patients with renal cell carcinoma



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A 71-year-old man with renal cell carcinoma with symptomatic bilateral lung metastases and multiple subpleural lesions started second-line cabozantinib (60 mg orally daily) after disease progression on pazopanib. After 3 months of therapy, in May, 2018, the patient presented at the emergency department and complained of a worsening of his dyspnoea, leading us to suppose that disease progression had occurred. However, a CT scan revealed an impressive volumetric reduction of the lung nodules but the onset of an apical grade 3 left pneumothorax (figure). The patient was admitted to hospital at the University Hospital of Verona (Verona, Italy) and was treated with thorax drainage with complete pneumothorax resolution and no further sequelae. Given this excellent response, cabozantinib treatment was continued. So far, the patient remains on cabozantinib treatment, with a treatment duration of 5 months. A second case of pneumothorax was observed in a 69-year-old woman with metastatic renal cell carcinoma 1 month after beginning second-line cabozantinib at a dose of 60 mg daily. The patient had one subpleural lung lesion 5 cm in size. In May, 2018, the patient presented at the emergency department with a sudden worsening of dyspnoea, which led to a diagnosis of grade 3 pneumothorax, admission to the Oncological Department of the University Hospital of Verona, and treatment with drainage of the pneumothorax, which was ipsilateral to

the pulmonary metastasis. Treatment with cabozantinib was continued, with a partial response recorded at subsequent disease evaluations. Cabozantinib therapy is still ongoing in this patient 6 months since the start of treatment.

Tumour necrosis—as a result of a rapid, dramatic response to cabozantinib—of subpleural lung metastases might explain the pathogenesis of the pneumothorax in both these cases. Cabozantinib is the only approved tyrosine kinase inhibitor that has been shown to increase overall survival, progression-free survival, and overall responses compared with everolimus in previously treated patients with metastatic renal cell carcinoma. Only two grade 3 and one grade 4 pneumothorax were reported with cabozantinib in the pivotal METEOR phase 3 trial. Pneumothorax, potentially related to the outstanding clinical activity of cabozantinib, is therefore an adverse event that must be considered in patients with peripheral lung or pleural metastases and unexpected onset of dyspnoea.

Contributors

CC and CM did the literature search and provided the figures. RI collected the data. RI, CC, and GT interpreted the data and wrote the report. Written informed consent to publication was obtained.

Declaration of interests

We declare no competing interests.

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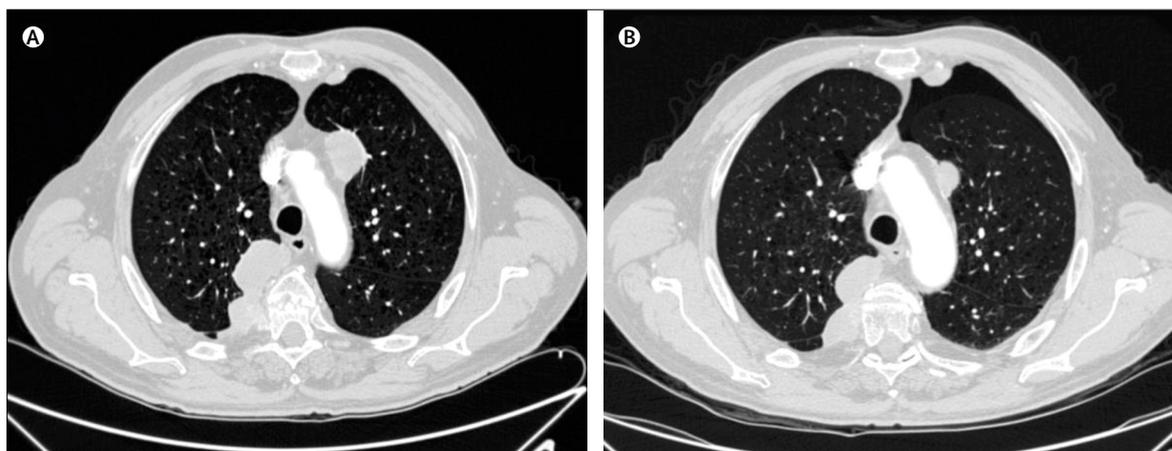


Figure: Thoracic CT scan before (A) and after (B) the development of pneumothorax