

IMAGING IN THORACIC CANCER

Bilateral spontaneous pneumothorax and massive pneumomediastinum under Pazopanib therapy

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A 43-year-old white male was referred to the Emergency Department with acute onset of severe dyspnea, cyanosis, and dry cough. He previously underwent a left-foot amputation in 2011 for synovial-sarcoma. In 2012, the patient experienced a relapse with bilateral lung metastases (Fig 1) and, two months before admission, he started Pazopanib (Votrient, Glaxo Group Ltd, Brentford, UK) treatment. On day 72, a chest X-ray (Fig 2) revealed a large right spontaneous pneumothorax (PNX) simultaneously associated to a left one. Thus, a 24 Fr chest tube was placed on each side providing immediate improvement of his clinical condition (Fig 3). No signs of air leakage were discovered during hospitalization; therefore, the patient was discharged on the sixth post-operative day without consequence. Four days after discharge, he experienced a sudden swelling of the chest wall and moderate dyspnea. A chest computed tomography scan revealed a massive pneumomediastinum associated to large subcutaneous emphysema of the chest wall soft tissues (Fig 4). After the second admission, a multidisciplinary meeting was performed and Pazopanib administration was ceased. His hospital course was unremarkable and seven days later he was discharged after regression of symptoms and complete radiological resolution.

Simultaneous bilateral spontaneous PNX represents 0.9–4.0% of all spontaneous PNX;¹ moreover, PNX secondary to lung metastases is not commonly reported in literature. Although angiogenesis-inhibitor therapy (AIT) is known to

cause tumor cavitation and “therapeutic erosion” of lung metastases,² PNX incidence was rarely reported in AIT clinical trials.^{3,4} Bilateral spontaneous PNX (Fig 2) is an extremely rare and life-threatening condition that clinicians should

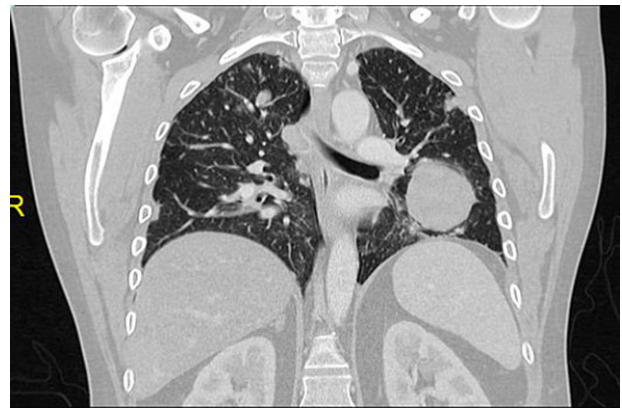


Figure 1 Computed tomography (CT) scan performed one month before commencing Pazopanib therapy. The exam disclosed bilateral lung metastases from synovial-sarcoma.

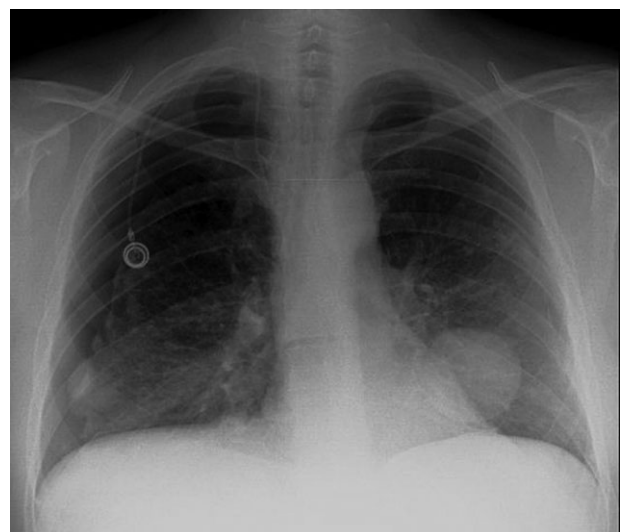


Figure 2 Chest X-ray revealed a spontaneous bilateral pneumothorax, greater on the right side.

Keywords

Angiogenesis-inhibitor; lung metastasis; Pazopanib; pneumomediastinum; pneumothorax.

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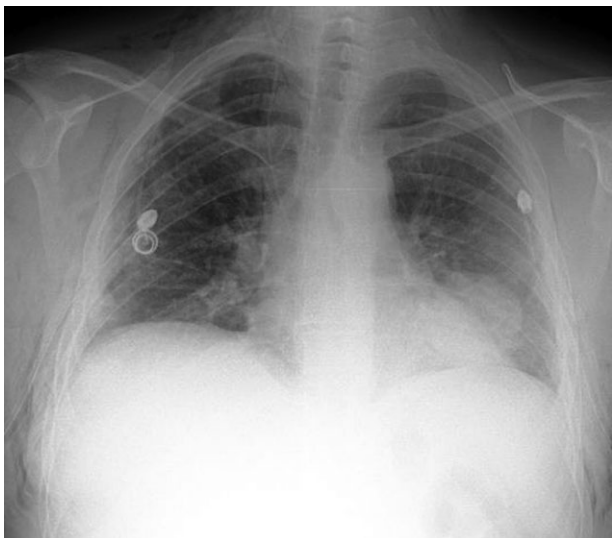


Figure 3 Chest X-ray (performed after double chest tube insertion) disclosed the resolution of bilateral pneumothorax with no signs of pneumomediastinum.



Figure 4 Chest computed tomography (CT) scan revealed a massive pneumomediastinum associated to a large subcutaneous emphysema of the chest wall soft tissues.

immediately treat (by chest tube insertion and respiratory care, Fig 3) during follow-up of metastatic patients under Pazopanib. Contrary to reports by other scholars,⁴ an association with pneumomediastinum (Fig 4) caused by an erosion of lung metastases closer to the mediastinum is even rarer; when this condition occurs, a multidisciplinary evaluation (with oncologist, pneumologist, and thoracic surgeon) is required in order to undertake a conservative treatment (and the ceasing of drug administration).

In conclusion, although it rarely occurs, the onset of an air leak (PNX or pneumomediastinum) during Pazopanib treatment is a life-threatening condition related to lung metastases erosion. Thus, a close clinico-radiological examination is mandatory in pulmonary metastatic patients under AIT.

Disclosure

No authors report any conflict of interest.

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