

Evidence-based medicine is the cornerstone of progress in modern clinical medicine. In recent years, significant advancements have been made in the diagnosis and treatment of lung cancer, with novel therapeutic approaches and diagnostic strategies, exemplified by targeted therapies and immune checkpoint inhibitors, constantly emerging. While these advancements bring benefits to patients, they also pose higher demands on clinicians, requiring continuous learning and reflection.

Although high-level evidence from rigorous prospective controlled studies is valuable, the strict inclusion and exclusion criteria may not cover the diverse spectrum of patients encountered in clinical practice. Moreover, in the real world, patients exhibit individual variations, complex comorbidities, and clinicians often find it challenging to derive definitive answers solely from clinical research. Clinical experience and comprehensive judgment remain crucial. Therefore, apart from clinical research, the sharing and discussion of unique clinical cases are aspects that every clinician finds intriguing, especially the retrospective analysis and in-depth exploration of special cases, which play a significant role in enhancing clinical proficiency.

With this in mind, we have compiled challenging clinical cases in the field of lung cancer diagnosis and treatment published over the past three years. These cases encompass various scenarios, including improved targeted therapy for meningeal metastasis of lung cancer, rare mutations such as EGFR-RAD51, and the management of rare complications such as paraneoplastic cerebellar degeneration. Additionally, it includes innovative drug treatment strategies based on ctDNA monitoring, and the handling of rare complications resulting from drug treatment, such as pulmonary embolism after targeted therapy. These cases, either rarely seen in clinical practice thus challenging to conduct specific clinical studies, or represent early clinical experiences with novel treatments, providing innovative insights for clinicians and serving as cases of interest.

Of course, an excellent case report, besides the rarity of the condition itself, requires detailed and objective documentation of the clinical course, innovative experiences based on standardized diagnosis and treatment, as well as a summary and profound reflection from the treatment team. These considerations are crucial factors in our case selection, aiming to provide readers with more reliable and valuable references.

There are two ancient Chinese sayings, “*Gathered grains build towering castles, pooled waters carve mighty rivers.*” and “*Stones from another mountain can be the chisel that sculpts jade.*” which can be regarded as the original intention and expectation for compiling this book.



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