



Published in final edited form as:

J Thorac Imaging. 2017 September ; 32(5): 275. doi:10.1097/RTI.0000000000000290.

Paradigm Shift in Lung Cancer Therapy: Imaging and Clinical Implications

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Recently, major changes in the approach to the evaluation and treatment options for patients with lung cancer offer the opportunity to improve patient outcomes. Advances in chemotherapy with targeted agents, the potential benefit of immunotherapy, improved delivery of radiation dose and new surgical techniques are contributing to the personalization of cancer care. Personalized cancer care, based on the identification of genetic abnormalities and use of biomarkers such as gene mutations in EGFR (epidermal growth factor receptor) and ALK (anaplastic lymphoma kinase), can determine therapeutic options in patients with advanced lung cancer such as targeted and immunotherapy. Radiation therapy has evolved to using focused beam techniques such as 3-dimensional conformal radiation therapy, intensity-modulated radiotherapy, stereotactic body radiotherapy and proton therapy to allow the precise delivery of high radiation dose and improve local control of malignancy. Similar to the paradigm shift in the therapeutic approach in thoracic medical and radiation oncology, advances in surgical techniques such as robot-assisted thoroscopic resection allow more precise resection and decreased morbidity. Because awareness of the expected post-treatment appearance and potential complications to therapy in patients with lung cancer is essential to determine appropriate management, this symposium on the imaging and clinical implications of lung cancer therapy offers an in-depth review of the imaging of targeted therapy (1), immunotherapy (2), radiation therapy (3) and surgical complications (4). We would like to thank Dr. Phillip M. Boiselle for giving us the opportunity to serve as guest editors of this issue and to commend the contributing authors for their hard work in providing a thorough analysis of these challenging and timely topics.

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