Preface

Focusing on early detection and diagnosis—a way to eradicate deadly lung cancer

Is lung cancer an incurable disease? Yes, and no.

In the past, more than 80% of lung cancer patients were in late stage upon diagnosis. At this point, radical treatment is no longer available hence patients seldom survive long. However, as CT scans become more common, a rapidly grown population with early stage disease are being diagnosed. By radical resection, more than 60% of these patients can be completely cured, this number will be even higher in non-invasive diseases, 95%. We are now so confident that lung cancer is curable if it can be detected and diagnosed at early stage.

CT scan has become the standard to screen early-stage lung cancer, but it is far from perfect. With a slice thickness of 2 mm or less, CT scan is currently the most sensitive tool to detect tiny lesions in the lung including lung cancer. Meanwhile, it yields a lot of false positives, which cause excessive medical care and unnecessary psychological burden. Image features are studied and a lot of experience has been learned to determine the nature and the malignancy degree. In recent years, the introduction of radiomics and deep learning techniques can further improve the discrimination ability. In this focused issue, we invited well-known experts to discuss the screening process and management strategy, as well as some experience on CT/PET-CT and new techniques in image diagnosis.

Besides imaging-based techniques, liquid biopsy provides promising diagnostic ability in combination with CT as differential diagnostic tools, or when being used alone as screening or postoperative surveillance tools. Attributed to the recent development of detection techniques, various tumor-associated substances that represent the presence or severity of the disease, are detectable in body fluids such as blood or bronchoalveolar lavage. As medical practitioner of lung cancer, we are encouraged to acknowledge the advantages and limitations of the above techniques, then apply them in the appropriate scenario. Herein, our authors comprehensively reviewed the current progress of liquid biopsy and presented several novel researches.

In addition, the advances in minimally invasive surgical procedures and more precise anesthesia enabled the diagnostic resection with trivial harms to patients. Thus, we also invited expert authors to discuss the role of enhanced-recovery surgery in the biopsy and management of early stage lung cancer.

Technology has evolved at a breathless pace, making lung cancer detection much earlier and more precise than before. I am fully convinced that the goal of eradicating deadly lung cancer is already on the horizon.

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