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Diagnostic challenges in lung neuroendocrine tumors

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Neuroendocrine tumors (NET) of the lung constitute approximately 15% of all lung tumors, with small cell lung cancer (SCLC) accounting for 15% of invasive cancers. Many of those tumors have radiological and clinical presentation which is different from other pulmonary malignancies. In most cases, diagnosis could be established by core needle biopsy and, not uncommonly, SCLC is detected by endoscopic bronchial ultrasound fine needle aspiration (EBUS-FNA). Spectrum of lung NETs includes typical carcinoid (TC), atypical carcinoid (AC), SCLC and large cell neuroendocrine carcinoma (LCNEC). Morphological criteria, separating low grade from high grade NETs, include cellular atypia, mitotic rate, and presence or absence of necrosis. The question, which has been yet unanswered and which is addressed in the presentation, is whether the above NETs represent continuum from low to high grade tumors or they are biologically different. One of the major diagnostic challenges in pulmonary NETs is their grading on core needle biopsies (CNB). It has been shown that morphological features of NET, when diagnosed by CNB, could be significantly different from the ones on same tumor upon subsequent surgical resection. This could be partially due to marked crush and processing artifact which markedly affect evaluation of mitotic rate. Measurement of proliferative rate by immunohistochemical stain for Ki67 has been approved for grading of NET in the gastrointestinal tract, but is not universally accepted in pulmonary NET. However, it can be very helpful in evaluation of CNB with marked cautery and crush artifact. In addition, CNBs may not be representative of the entire lesion and can lead to diagnostic pitfalls which will be discussed in the presentation.

Biography

Mark Podberezin has completed his Medical School Degree (MD) and subsequent Clinical Hematology/Oncology training and PhD in Russia. Later, he did his Residency in Anatomic and Clinical Pathology at University of Illinois at Chicago and Hematopathology Fellowship at Texas Methodist Hospital in Houston. He is an Anatomic Pathologist (with special interest in Lung Pathology) and Hematopathologist at Royal University Hospital, University of Saskatchewan, Canada. He published 14 papers and presented at national, as well as international meetings.

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