REFERENCES


The most significant recent change in the pathological classification of lung cancer occurred with the 2011 classification of lung adenocarcinoma sponsored by the International Association of the Study of Lung Cancer (IASLC), the American Thoracic Society (ATS), and the European Respiration Society (ERS). This classification outlines many paradigm shifts that affect clinical practice and patient management and opens new avenues for research [1]. This new classification was a multidisciplinary effort at emphasizing the correlations in tumour pathology among clinical, radiological and molecular characteristics.

With this classification, a new concept of adenocarcinoma in situ (AIS) was added to the group of pre-invasive lesions along with atypical adenomatous hyperplasia, both presenting at HRCT (high resolution CT-scan) as circumscribed by ground glass opacities (GGO). AIS is defined as a localized, small (≤3 cm) adenocarcinoma consisting of pure lepidic growth characterized by neoplastic pneumocytes growing along pre-existing alveolar...
walls and lacking stromal, vascular and pleural invasion. This new concept of AIS (former pure bronchioloalveolar carcinoma [BAC]) correlates with 100% disease-free survival if completely resected. A new concept of minimally invasive adenocarcinoma (MIA) is created for small solitary adenocarcinoma (≤3 cm) with a predominant lepidic pattern and ≤5 mm invasion. By CT, this typically presents as a ground glass nodule with a solid component measuring 5 mm or less. Measurement of the invasive component of MIA includes the size of the invasive subtypes other than the lepidic pattern including tumour cells infiltrating myofibroblastic stroma. MIA is restricted to tumours showing neither lymph node blood vessel or pleural invasion nor necrosis. Moreover, MIA defines a population of patients with near 100% 5-year survival. Because the previous taxonomy of bronchioloalveolar carcinoma included a wide variety of different clinico-pathological entities, it was discarded. The current article [2] can be regarded as a validation of the concept that the pure lepidic pattern is biologically and clinically in situ.

Correlation of the pathology with CT-findings is helpful in the evaluation of AIS, MIA and lepidic predominant adenocarcinomas since it can be difficult to appreciate tumour size by gross evaluation of a lepidic predominant tumour. It may be easier to identify the size of the lesion on HRCT, particularly in lepidic predominant tumours to distinguish the part solid nodule on a background of a mostly Ground Glass Opacity (GGO). In this article by Murakawa et al., 241 patients with stage I (T1–2N0M0) lung adenocarcinoma (3–5 cm) who were surgically resected were included and histologically reviewed according to the new classification, of which 68 cases with AIS and MIA exhibited 100% recurrence-free survival. Importantly, even in T2 cases, a multivariate analysis revealed that the maximum tumour diameter (solid part measured in mediastinal window), was a better predictor of survival than the diameter measured in the lung window (including solid part and ground glass opacity). The authors show the predictive performance of TDR (tumour shadow disappearance rate) for recurrence, of which the 2-diameter and area size of the solid part of the mediastinal tumour were the only predictive factors of prognosis, even in the GGO-predominant groups. They conclude from the multivariate analysis that the T factor measured by size of the solid component may be a more accurate prognostic parameter and a better assessment of the T size of the staging system, which includes the total tumour size including both the solid (invasive) and ground glass (lepidic) components of the tumour. This confirms previous hypotheses [3–5]. Briefly, GGO-component exclusion from the T size revealed an improved prognostic performance for recurrence-risk assessment and pathological vessel invasion.

All together, in addition to the confirmed prognostic power of the predominant pattern (5–6), the Murakawa study provides a validation of the proposed implications of the IASLC/ATS/ERS classification for TNM classification of adenocarcinomas with a lepidic pattern: (1) AIS may be regarded as Tis (adenocarcinoma) in addition to Tis (squamous); (2) consideration of MIA as Tmi; and (3) use of the size of the solid or invasive tumour component both by CT or pathological assessment, respectively, for determining the T factor of size rather than total tumour size including the ground glass or lepidic component.

References


