Conclusion: It is important to note that such lesions are benign entities, easily recognizable by their histological appearance with an extremely rare localisation in the lung for which the surgical excision is the curative gesture.

E-PS-22-004

Anaplastic lymphoma kinase (ALK) expression in lung adenocarcinoma - clinicopathologic and morphologic features

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Background & Objectives: The aim of this study is to explore the status of ALK in lung adenocarcinomas and to evaluate the relationship between ALK expression and clinicopathological and morphological features of the primary tumour.
Methods: In total, 86 cytological and biopsy specimens were tested for ALK status using automated immunostainer with Ventana anti-ALK (D5F3) antibody. The expression of ALK was correlated with patient's age, sex and histological features of the primary tumour.
Results: ALK positive expression was detected in 15 (17,4%) cases, in significantly younger age group than ALK negative patients ($p<0.05$). Mucinous type of lung adenocarcinomas were predominantly ALK positive (43,7%), followed by papillary type (25%), acinic type (13%) and solid type (3%). There was strong correlation between the ALK expression in surgical biopsy and cytological specimens ($p<0.05$).
Conclusion: These results represent that immunohistochemical expression of ALK gene rearrangement is valid detection technique revealing distinctive clinicopathological and morphological features of the tumour especially in scant biopsies and cytological specimens.

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Genetic analysis of multiple synchronous lung cancer in a single lobe showing three different histological types

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Background & Objectives: We experienced a case of multiple synchronous lung cancer in a single lobe showing three different histological types. The results of genetic analysis of the tumours showed interesting findings to suggest a developmental mechanism of collision cancer.
Methods: Case presentation: A 73-year-old Japanese woman with a history of smoking for 20 years (50 cigarettes daily). She had undergone a partial colectomy due to colon cancer 7years before. The follow up CT revealed tumour shadows in S6 and S10 of the right lower lobe of lung. Partial lung resection of right S6 and S10 was performed on the suspicion of colon cancer metastasis. The resected tumours were histopathologically, immunohistochemically and genetically examined.
Results: S6; A 10mm sized solid adenocarcinoma was seen. The tumour cells were immunohistochemically positive for TTF1. P53 mutation Ex6 S215G was detected, S10: Two distinct adjacent tumours were seen. One was 20mm sized large cell neuroendocrine carcinoma which was immunohistochemically positive for TTF1, synaptophysin and CD56. P53 mutation Ex7 P250L was detected. Another was 12mm sized lepidic adenocarcinoma, immunohistochemically positive for TTF1. P53 mutation Ex7 P250L was detected. The two tumours were connected each other in a small area.
Conclusion: The two tumours in S10 are morphologically consistent with collision cancer but the genetic analysis of p53 mutation suggests that they are derived from a common multipotential cell. The tumour in S6 has different p53 mutation from S10 tumours and is proved to be not a metastasis but a primary cancer.

E-PS-22-006

Correlation predominant type of adenocarcinoma of the lung with characteristics of primary tumour

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Background & Objectives: In 2015, the World Health Organization (WHO) adopted a new classification of adenocarcinoma of the lungs (AD), which almost completely accepted the recommendations of the International Association for the Study of Lung Cancer, American Thoracic Society, and European Respiratory Society (IASLC/ATS/ERS) 2011. The prognostic importance of the new classification of AD is still not clear. We analysed the correlation of predominant histologic subtypes of AD with the characteristics of the primary tumour (size, infiltration of pleura and surrounding structures).
Methods: 148 operatived patients with invasive AD were analysed. We defined the predominant type using the IASLC / ATC / ERS criteria (solid, acinar, papillary, micropapillary and lepidic). We compared the correlation of prevalent types with tumour characteristics.
Results: The most prevalent types of AD were solid (35.1%), acinar (31.1%) and papillary (16.9%). The smallest average tumour size was found in papillary (39.6 mm), solid (49.9 mm), acinar (47.8 mm), while the highest was in the lepidic (52,4 mm) and micropapillary (55.8 mm). The most prevalent type with pleural infiltration was solid (6.8%), acinar (6.1%) micropapillary (6.1%), with statistically significant association (Fisher's non-parametric test, $p = 0.011$). Infiltration of surrounding structures was found in acinar (2%) and solid (2%).
Conclusion: In this paper, we point the importance of an accurate assessment of the subtype of AD highlighting certain aspects of its clinical relevance and potential impact on future new research in this direction.

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A case report of exon 20 resistant insertion

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Background & Objectives: Most patients whose tumours harbor exon19 deletions or L858R mutations have substantial clinical and radiographic responses to EGFR TKIs. In contrast to the classic activating EGFR mutations, insertions in exon 20 are not often associated with clinical benefit and radiographic responses with EGFR TKIs, they have been linked to insentivity and resistance to reversible and irreversible EGFR TKIs. These include the exon 20 insertion mutants D770(ins G)N 771T, D770ins(SVQ), D770_N771(inS NPG) that account for about 4% of all EGFR mutations.
Methods: We report a case of 36 year-old-male, occasional smoker for 5 years, presented with a two month history of bone pain. Chest radiograph revealed a large opacity overlying the right upper lobe. Magnetic resonance imaging (MRI) showed lung, bone and liver metastases. A bronchial biopsie was performed for pathological diagnosis, which revealed an acinair adenocarcinoma with intensively positive TTF-1 and CK7 in differentiated glandular structure. For genetic testing, the extraction of DNA was performed with invitrogen DNA FFPE Tissue Kit from