• BALC patient post-surgical survival period was greater than the “Mixed” group one.

Discussion: The characterization of the BALC as a separate entity with particular characteristics appears to have practical and objective effects in the determination of this disease’s prognosis. This population sample analysis seems to verify the importance of this new classification. Future analysis with larger samples and for longer follow-up periods may further support these data.

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Effects of vascular endothelial growth factors (VEGFs) on biological behavior of intrathoracic lung cancer cells

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Background: The expression of vascular endothelial growth factors (VEGFs) in tumors including lung cancer is considered to be associated with tumor development via angiogenesis and lymphangiogenesis. Pleural dissemination and lymph node metastasis of lung cancer are major poor prognostic factors. We investigate how VEGF-A, VEGF-C, and VEGF-D expressed in the intrathoracic infiltrating lung cancer cells are involved in dissemination and metastasis.

Methods: We established large cell lung cancer cell lines in which stably VEGF-A-, VEGF-C-, VEGF-D-, or VEGF-C and VEGF-D were stably expressed (TKB5/empty, TKB5/VEGF-A, TKB5/VEGF-C, TKB5/VEGF-D, TKB5/VEGF-C/D, respectively). These transfectants were orthotopically inoculated into the right thoracic cavity (i.t.) of nude mice, and then we evaluated subsequent development of pleural effusion, pleural dissemination, and lymph node metastasis.

Results: There were no significant differences in cell growth rate among the control lines (empty vector-transfected TKB5) and VEGF-transfectants in vitro. However, each i.t. model demonstrated significantly different biological properties. TKB5/empty showed no apparent pleural effusion, dissemination, or lymph node metastasis. In contrast, TKB5/VEGF-A, TKB5/VEGF-C, TKB5/VEGF-D, and TKB5/VEGF-C/D promoted bloody pleural effusion and dissemination (4/4, 4/7, 4/4, and 5/10, respectively). TKB5/VEGF-D and TKB5/VEGF-C/D showed aggressive mediastinal invasion around the thoracic aorta and thoracic duct. Furthermore, TKB5/VEGF-C/D generated mediastinal lymph node metastasis (2/10). These findings suggested that VEGF-D could facilitate mediastinal spread of lung cancer cells. Immunohistochemical study revealed that the expression of both VEGF-A and VEGF-D in the disseminated tumor promoted intense blood vessel formation rather than lymph vessel formation. In contrast, TKB5/VEGF-C/D showed mild increase of lymph vessel density and significantly low blood vessel density in the disseminated tumor.

Conclusions: The biological behavior of lung cancer cells within the thoracic cavity appears to be regulated by expression patterns of VEGFs. The regulation of the expression of VEGFs in intrathoracic lung cancer cells might be a useful therapeutic approach to inhibit tumor development and improve patient prognosis.

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The cytopathologic diagnoses of fine needle aspirations from endoscopic ultrasound of the mediastinum: Reproducibility of the diagnoses and representativeness of aspirates from lymph nodes

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Background: Endoscopic ultrasound guided fine needle aspiration biopsy through the oesophagus (EUS-FNA) or the bronchial tree (Endobronchial ultrasound guided transbronchial needle aspiration (EBUS-TBNA)) may be used to obtain specimens from mediastinal structures. However, no studies have studied the reproducibility of the pathological assessment of the aspirated material.

Methods: 102 slides from EUS-FNA or EBUS-TBNA were assessed two times by four pathologists who classified each slide to one of five diagnostic categories, and judged if the aspirate came from a lymph node. Between the two rounds, the criteria to be used in the assessment of the slides were reviewed in a limited education session. The four observers had at least 15 years of pathology experience, but their experience in EUS-FNA and/or EBUS-TBNA varied from almost none to more than 20 years. The Kappa statistic was applied for the analysis of reproducibility.

Results: The reproducibility of the diagnoses in the first round was good to excellent (Kappa 0.52-0.89). The teaching session led to a significant improvement of the reproducibility between the least and the most experienced observers (Kappa ranges of 0.52-0.55 in the first round improved to 0.65-0.71 in the second round).

Conclusion: The reproducibility of the diagnosis on EBUS-TBNA and EUS-FNA is excellent among pathologists experienced with this type of samples. Pathologists who are generally experienced but have little experience with EBUS-TBNA and EUS-FNA show a steep learning curve. From a pathologic point of view, EBUS-TBNA and EUS-FNA are feasible, but only experienced pathologists should do the assessments.

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Synchronous multisystemic (pulmonary and gastrointestinal) extranodal marginal zone lymphoma of malt type and two lung carcinomas with different histologic and immunophenotypic features

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A case with two different primary lung tumors which had different morphologic and immunophenotypic features and associated multisystemic MALT type extranodal (lung, stomach, duodenum) marginal zone lymphoma is reported.