Results: During and after procedures we observed in 28% patients hypoxemia, in 23 % hemorrhage 250 cm³ and more, in 10% arytmias, in 5% patients we observed hypertension and in 2% patients developed after procedure respiratory failure and both patients were 24 hours on invasive ventilation. Two patients died due complications after procedure. Any complications we observed in 40% of all procedures. The procedure leads to improvement of symptoms in 80% patients. The difference in number of complications in patients with ASA III and with ASA IV was not statistically significant (p=0.009).

Conclusions: Endobronchial treatment (electrosurgary and laser brochoscopy) leads to improvement of symptoms in 80% patients. This treatment procedure in general anesthesia with jet ventilation is therapeutic procedure with acceptable rate of complications in patients with endobronchial growth of malignances and in patients with ASA classification III and IV.

PD1-3-2   Pathology and Bronchoscopy, Mon, 16:00 - 17:30

Flexible bronchoscopy in lung cancer

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Background: Bronchoscopy is usually performed under topical anesthesia with or without sedation to promote patient comfort and the ideal conditions for the physician to perform the examination. The objective of the study was to establish which anesthetic procedure used during flexible bronchoscopy for lung cancer diagnostic has the lowest index of complications.

Methods: This prospective randomized study analyzed 80 patients that underwent flexible bronchoscopy for lung cancer diagnostic. Patients were randomly assigned to four groups of 20 patients each according to the anesthetic combination used: 200 mg topical lidocaine (LID group); 200 mg topical lidocaine and 2 mg/kg propofol (PPF group); 200 mg topical lidocaine and 20 mcg/kg alfentanil (ALF group); or 200 mg topical lidocaine and 0.05 mg/kg midazolam (MID group). Scores were assigned to patients according to the different variables observed during the bronchoscopic procedure; the lower the score, the lower the complication index.

Results: Results of the composite score (mean and standard deviation) for the evaluation of the variables observed during flexible bronchoscopy were 4.6„b3.9 for the PPF group, 7.9„b6.6 for the ALF group, 10.0„b4.5 for the LID group, and 11.3„b5.8 for the MID group (p=0.001).

Conclusions: Results showed that the combination of propofol and topical lidocaine was a superior anesthetic method for flexible bronchoscopy than lidocaine alone or in association with midazolam or alfentanil.

Clinical Implications: The choice of an effective and low morbidity anesthetic method is basic for the success of a diagnostic flexible bronchoscopy. This study it demonstrated the superiority of the association of propofol and topic lidocaine in the anesthesia for flexible bronchoscopy in lung cancer patients.

PD1-3-3   Pathology and Bronchoscopy, Mon, 16:00 - 17:30

Estrogen receptor overexpression in non-small cell lung cancer is associated with better survival in males.

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Background: Adenocarcinoma of the lung is more frequent in females than in males and the association with smoking is less pronounced than for the other histological subtypes of lung cancer. Thus other factors than smoking may be involved in the carcinogenesis of lung cancer. Estrogen induction of cellproliferation has been found in for example breast adenocarcinoma and since estrogen receptors (ER) have been demonstrated in lung tumours, a similar role of estrogens in the development of lung cancer has been suggested.

Whereas ERalfa plays a key role in adenocarcinomas of the breast, several studies indicate a more predominant role of ERbeta in lung cancer. We examined the expression of ERalfa, ERbeta, and Progesterone in a well defined Danish cohort of patients with NSCLC with more than 15 years of follow up, and related the results to gender and survival.

Methods: Paraffin embedded, histological material was collected from 104 patients (71 men and 33 women), operated in the period 1989-1992 for NSCLC (56 squamous cell carcinomas, 40 adenocarcinomas and 8 large cell carcinomas). Sixtythree patients were in stage I, 14 patients in stage II, 24 patients in stage IIIA, and 3 patients in stage IIIB.

ERalfa (clone 1D5, DAKO), ERbeta (clone PPG5/10, DAKO) and Progesterone (clone PgR 636, DAKO) were immunohistochemically analyzed. Staining frequency and intensity was scored semiquantitatively. A tumour was defined as positive when more than 10% of the tumour cells were positive with at least a weak nuclear staining. Kaplan-Meier survival curves were generated to evaluate the significance of ERalfa, ERbeta and Progesterone expression for the prognosis.

Results: ERbeta positivity was demonstrated in 69% (72 of 104) of the tumours. There was no statistically significant correlation between ERbeta positivity and age, sex, stage, or histology. After adjusting for sex, age, stage at diagnosis and histology there was no difference in survival between subjects with ERbeta-positive and ERbeta-negative tumours. Analysis was repeated after stratifying by sex. Women with ERbeta-negative tumours had a non-significant (p=0.26) decrease in mortality compared with women with ERbeta positive tumours. In contrast, men with ERbeta positive tumours had a reduced mortality (p=0.03) compared to men with ERbeta negative tumours (see Figure).
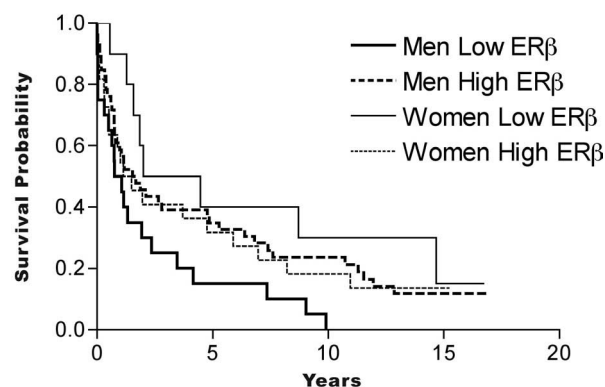
Using multivariate regression analysis the interaction between gender and positive ERbeta staining was the only significant prognostic factor. There was no correlation between the ERalfa immunohistochemical reaction and any of the clinical variables, including survival. None of the 104 patients had tumours positive for Progesterone.

Conclusion: The presence of ERbeta in a tumour seems to be a positive prognostic factor for men with non-small cell lung cancer. The findings are in agreement with recent findings (1) and suggests the area of estrogen and lung cancer to be investigated further.

1.   Schwartz AG, Prysak GM, Murphy V, Lonardo F, Pass H, Schwartz J et al. Nuclear estrogen receptor beta in lung cancer: expression and survival differences by sex. Clin. Cancer Res. 2005;11:7280-7.

PD1-3-4   Pathology and Bronchoscopy, Mon, 16:00 - 17:30

High-throughput tissue microarray analysis for the prognostic significance of cell cycle regulation and proliferation, apoptosis and angiogenesis in non-small cell lung cancer

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Background: Recent molecular studies have provided increased understanding of the biology of non-small cell lung cancer (NSCLC) and have identified molecular abnormalities responsible for the modulation of tumor growth and the prognosis. Nevertheless, the essential genetic features, along with factors for prognosis, have yet to be fully understood.

This study was undertaken to investigate such immunophenotypes with regard to cell cycle regulation and proliferation, apoptosis, and angiogenesis, and their significance to patient outcome.

Design: Two hundred and nineteen NSCLC samples were assembled on tissue microarrays, and examined immunohistochemically using antibodies against p16, p21, p27, cyclin B1, cyclin E, Ki-67, caspase-3, survivin, bcl-2, VEGF and endostatin. Clinical information was obtained through the computerized retrospective database from the tumor registry.

Results: One hundred and sixty-eight patients (76.7%) were male and the mean age was 65.8 years (SD 9.9; median 67; age range 19-89). Despite previously described prognostic relevance of some of the 11 investigated molecules, many were found not to be directly associated with recurrence or survival. However, p16 and bcl-2 had an impact on 5-year survival. There was a trend for p16 immunoreactivity to be related with a good prognosis (57% vs. 42% in 5-year survival) (p=0.071). Bcl-2 expression in tumor tissue strongly correlated with a better outcome (65% vs. 45% in 5-year survival rate) (p=0.029), and the hazard ratio of death for bcl-2 positive patients was 0.42 times of that for bcl-2 negative patients (p=0.047). A multivariate analysis with Cox proportional hazards model confirmed that the lymph node status (p=0.043) and stage (p=0.003) were other independent prognostic factors.

Conclusion: The present study demonstrates that NSCLCs have heterogeneous expression of cell cycle regulatory proteins, apoptotic factors and angiogenic factors. The expressions of p16 and bcl-2 correlate with better survival, suggesting that both proteins provide prognostic information independent of TNM stage in NSCLCs.

PD1-3-5   Pathology and Bronchoscopy, Mon, 16:00 - 17:30

Evaluation of resected tumors that were not diagnosed histologically but were suspected of lung cancer preoperatively

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Background: Lung cancer is the most common cause of cancer death around the world. Diagnosis is critical to decide treatment. However, due to technical difficulties, it is often difficult to obtain histological diagnosis with a clinical workup including bronchofiber and CT-guided needle biopsy. In such cases, patients undergo resection without a histological diagnosis. In some patients, postoperative histological examination demonstrates benign diseases. In this study, we identified patients without preoperative histological diagnosis who underwent resection and evaluated their histology. We also discuss the influence of CT screening on this issue.

Methods: A retrospective study was performed by reviewing medical records between 1997 and 2005. There are 1039 patients who underwent surgical resection under a diagnosis of lung cancer or suspected lung cancer. In 523 patients, histological diagnosis of lung cancer was obtained with a routine workup preoperatively. In 516 patients, the histological diagnosis was not confirmed preoperatively. We reviewed the reasons for the lack of histological diagnosis and classified patients into three groups, 1)bronchofiber and/or CT-guided needle biopsy were performed but histological diagnosis could not be established; 2)Tumor was small and bronchofiber and/or CT-guided needle biopsy was not performed; and 3)CT imaging indicated highly suspected lung cancer and bronchofiber and/or CT-guided needle biopsy was skipped. We also reviewed postoperative histology.

Results: Of the 1039 patients who underwent surgical resection under a diagnosis of lung cancer or suspected lung cancer between 1997 and 2005, preoperative histological diagnosis was not obtained in 516 patients (46.2%). In our area, CT screening was initiated in 1998. The proportion of undiagnosed cases was approximately 30 % before 1998 and increased to approximately 55 % after 1999. The increase seemed to be related to the initiation of CT screening. In 108 patients, bronchofiber and /or CT-guided needle biopsy was performed but histological diagnosis could not be obtained. In 270 patients, the tumor was considered too small for bronchofiber or CT-guided needle biopsy and these modalities were not performed. In 138 patients, CT imaging highly suspected lung cancer and resection was performed without histological confirmation. Postoperative histological examination demonstrated primary lung cancer in 422 patients (81.8%), metastatic lung cancer in 25 (4.8%) and benign disease in 69 (13.4%).

Comment: We reviewed 516 patients who underwent resection without histological diagnosis. After the initiation of CT screening, the proportion of cases that were not diagnosed preoperatively increased to approximately 55 %. Histological examination demonstrated benign diseases in 69(13.4%). Recently small lung tumor has been detected more frequently, especially since the initiation of CT screening. Some patients undergo resection without histological confirmation. Surgical indications for undiagnosed cases should be considered carefully.