cell lung cancers (NSCLCs). The present study, a prospective trial built on our experience with PLC in patients undergoing resection for NSCLCs and followed for long-term outcome, was undertaken to analyze survival and pattern of recurrence with particular reference to PLC findings with early stage diseases.

**Methods:** From January 1991 to December 2003, PLC was performed before any manipulation or resection of the lung for 915 consecutive patients who had no macroscopic pleural effusion, dissemination or diffuse adhesions and who subsequently underwent curative resection for NSCLCs. Results of PLC with reference to clinical and pathological characteristics (gender, age, tumor location, histology, postoperative stage, T category, N category and p status), adjuvant therapy, 5-year survival and recurrence patterns were analyzed. Cancer recurrence was divided into three categories according to the sites of initial recurrence: loco-regional, pleural and distant. Pleural recurrence was defined as any recurrent disease within the hemithoracic pleura.

**Results:** There were 367 women and 548 men, with a mean age of 62.8 years (range, 16 to 86 years). The findings of cytologic examination were not influenced by age (P=0.80). Among the total, 43 (4.7%) had positive PLC findings: 26 (4.7%) males and 17 (4.6%) females. Positive results were obtained much more frequently in patients with adenosquamous carcinoma (13%) or adenocarcinomas (5.6%) and were lacking with squamous cell carcinomas and large cell carcinomas. The overall 5-year survival rate was 41% in patients with positive PLC findings and 74% in patients with negative results, the difference being statistically significant (P=0.001). The 5-year survival rates of patients with stage I disease with negative and positive cytologic findings were 85% and 56% respectively, again with statistical significance (P=0.001). In the positive PLC group, distant metastases (69%) and pleural recurrence (28%; P=0.0001) were observed, even for patients with stage I diseases (P=0.001). As adjuvant therapies in the positive group, six patients had hypotonic cisplatin and 18 had distilled water infusion into the pleural space after lung resection. The 5-year survival rates for the two positive PLC groups with and without adjuvant therapy were 38% and 45% respectively, the difference being statistically not significant (P=0.16). Although only three patients suffered from pleural recurrence, these therapies did not improve long-term outcome.

**Conclusions:** Although the numbers of patients with positive PLC results were limited, as in many other studies on this topic, our results confirm that PLC is a distinct prognostic factor for early-stage NSCLCs. Thus, we suggest that cytologic examination of intra-operative PLC should be performed routinely even for patients with stage I NSCLCs before beginning lung resection. Moreover, curative resection followed by any adjuvant systemic therapies could be necessary for improvement of outcome for PLC positive patients.
bilitation (group 1) or standard care (group 2). Postoperative follow up and rehabilitation in group 1 included clinical evaluation, chest X-ray, CT of thorax, bronchoscopy, and EBUS (Endobronchial Ultrasound) each year the following 5 years. Furthermore, the patients in group 1 consulted a nurse and a physiotherapist, 6 weeks and 6 months after surgery. Patients in group 2 were only offered chest X-ray one year after surgery and a clinical examination by their community doctors, if they experienced any symptoms.

Quality of life in both groups was assessed after 6 weeks, 6 months, 12 months and 2 years by a standardized QOL-questionnaire (EORTC QLQ-C30). The 15 different scales in the QOL-questionnaire evaluate both functional status and symptoms.

Results: We found a significant improvement of role functioning in favour of intensive follow-up and rehabilitation (p<0.01) There was also a significant reduction of pain (p<0.01), fatigue (p<0.01), and loss of appetite (p<0.02) in this group.

Overall there was a tendency toward fewer symptoms and better functional status in group 1 with intensive clinical follow-up and rehabilitation compared to group 2.

Conclusion: The preliminary results of this randomized trial indicate that intensive follow-up and rehabilitation programmes for patients operated for non-small cell lung cancer increases functional status and reduces postoperative symptoms.

C9-04
The Relationship between surgical diagnosis and pathological diagnosis of lymph node metastasis
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Background: Accurate intraoperative diagnosis of lymph node metastasis for patients with non-small cell lung cancer may facilitate decision of the extent of lymph node dissection at the time of surgery. The aim of this retrospective study was to define the accuracy of intraoperative diagnosis of lymph node metastasis.

Methods: During the 14-year period between 1993 and 2006, 420 patients who underwent complete resection and mediastinal lymph node dissection for non-small cell lung cancer were reviewed in this study. Intraoperative diagnosis was made by individual surgeons using lymph node manipulation and/or frozen pathological examination.

Results: Of 420 patients, 274 were men and 146 were women. Postoperative histological diagnosis was as follows: adenocarcinoma, 259; squamous cell carcinoma, 123; large cell carcinoma, 26; the other histological type, 11. Surgical diagnosis of lymph node metastasis was as follows: sn0, 289; sn1, 50; sn2, 69; sn3, 12. Pathological diagnosis of lymph node metastasis was as follows: pN0, 255; pN1, 56; pN2, 96; pN3, 13. The relationship between surgical (intraoperative) diagnosis and final pathological diagnosis is shown in table. Of 289 patients who were recognized to have no lymph node me-

C9-05
Clinicopathologic features and oncologic behaviors of the T1-sized lung cancer
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Background: We evaluated the radiologic, pathologic and biologic aspects of lung cancers 3cm or smaller in diameter to predict their oncologic behaviors.

Materials and Methods: We retrospectively reviewed CT, PET and pathology reports of 135 lung cancers smaller than 3cm among 302 surgically resected lung cancers from June 2003 to May 2006. The ground-glass opacity(GGO) component of the tumor on HRCT, standardized uptake value(SUV) on FDG-PET, serum CEA, histopathologic features and a panel of immunohistochemical stains including Glut-1, Ki-67, p16, p27 were evaluated.

Results: On HRCT, 32(23.7%) patients had GGO component; 14 were pure GGO and 18 were mixed GGO. Forty seven(34.8%) patients had lymph node metastasis; N1 in 28 cases, N2 in 19 cases. All N2 patients showed solid lesion except one mixed GGO with solid component more than 90%. During follow up period(mean=21months), all the recurred cases(n=15) had pure solid lesion. The max SUV was a predictor of recurrence (p=0.03). The maxSUV of tumor was significantly increased in soli d lesions (4.74) comparing pure(1.78) and mixed (1.41) GGO lesions. The maxSUV is significantly lower in N0 tumors than N1 or N2 cases(p=0.04). The max SUV was also significantly lower in BAC than in squamous cell carcinoma or large cell carcinoma (2.2 vs 5.7 or 8.8, p=0.04). Tumors with high maxSUV showed Glut-1 and Ki-67 over-expression indicating increased cell proliferation. In contrast, tumors with GGO showed significantly low maxSUV, low Glut-1 and Ki-67 expression and relatively maintained p16, p27 protein expression(p<0.05). Serum CEA level is higher in solid tumors(3.18ng/ml vs 1.9 in GGO) and N2 lesions(5.07ng/ml vs 2.32 in N0 or 3.02 in N1, p=0.01), but had no correlation with recurrence.

Conclusions: Showing good correlation with histopathologic panels and recurrence, GGO components and SUV could effectively utilized for the expectation of oncologic behaviors of the tumors and individualized adjuvant therapy.