MEDICAL LYPHADENECTOMY IMPROVES SURVIVAL. EVIDENCE FROM A SYSTEMATIC REVIEW OF SURGERY FOR NSCLC

Wright, Gavin M.¹ Manser, Renee² Byrnes, Graham³ Hart, David² Campbell, Donald⁴

¹ Peter MacCallum Cancer Centre, Melbourne, VIC, Australia ² St Vincent’s Hospital, Melbourne, VIC, Australia ³ Centre for Genetic Epidemiology, University of Melbourne, Melbourne, VIC, Australia ⁴ Monash Institute of Health Services Research, Melbourne, VIC, Australia

Objectives: To compare the effectiveness of different surgical approaches in improving disease-specific mortality in patients with stages I to IIIA non-small cell lung cancer (NSCLC).

Methods: A systematic review of randomised controlled trials of surgery for non-small cell lung cancer was undertaken. Studies were identified from electronic databases, bibliographies, hand searching of a journal and discussion with experts.

Results: In pooled analysis of 848 patients in three trials (figure 1), 4-year survival was superior in patients undergoing resection with stage I to IIIA NSCLC who had complete mediastinal lymph node dissection compared with lymph node sampling; the hazard ratio estimated at 0.78 (95% CI: 0.65-0.93). 30-day mortality was no different between the arms (p=0.84).

A single study compared 5-year survival in 100 patients randomised to VATS versus conventional lobectomy in patients with clinical stage IA NSCLC and showed no difference in 5-year survival (90% vs. 85%, p=0.46).

A further trial found an increased rate of local recurrence in patients with stage I NSCLC treated with limited resection compared with lobectomy (RR 2.84, p=0.007).

Conclusions: Current evidence suggests that complete mediastinal lymph node dissection is associated with improved survival compared with node sampling in patients with stage I to IIIA NSCLC undergoing resection. Limited resection (less than lobectomy) is associated with a higher rate of loco-regional recurrence and a non-significant trend to poorer survival. This has implications for the accepted standard of care for resectable NSCLC.

PULMONARY ARTERY RESECTION FOR LUNG CANCER: IS THIS PROCEDURE SAFE AND USEFUL?

Yamashita, Motohiro; Komori, Eisaku; Sawada, Shigeki; Kurita, Akira; Nomagi, Naoyuki; Segawa, Yoshikito; Shinkai, Tetsu; Takashima, Shigemitsu

Shikoku Cancer Center, Matsuyama, Japan

Background: Bronchoplasty for lung cancer has been widely accepted and became a reliable and safe procedure to preserve lung function. However, pulmonary angioplastic procedure is seldom to be done and there have been only a few reports about pulmonary vascular reconstruction. In order to identify the safety and the usefulness of the pulmonary angioplastic procedure with or without bronchoplasty, we retrospectively reviewed patients medical records in our institution.

Patients and Methods: Between January 1998 and February 2007, 16 cases of pulmonary artery reconstruction were performed. The data were collected from the patient records retrospectively and analyzed. There were three female and 13 male patients, with a mean age 68 years old (range, 44–85 years). Four cases received concurrent chemoradiotherapy prior to surgery and one case received induction chemotherapy. Bronchial anastomoses were covered with intercostal muscle flap or pericardial fat tissue in these patients with induction therapy.

Results: Nine cases were adenocarcinoma, and 7 cases were squamous cell carcinoma. Lung cancer located on left upper lobe in 9 cases, right upper lobe in 3 cases, right middle lobe in 2 cases, and right lower lobe in 2 cases, respectively. Three patients underwent bronchoplasty with pulmonary artery reconstruction. Mean operative time was 277±58 minutes and mean blood loss during operation was 497±450g. Post operative complications were seen in 7 cases (44%), including atelectasis in 3 cases, arrhythmia in 3 cases, pneumonia in 2 cases, pneumothorax in 1 case, and post operative bleeding combined with cerebral infarct.
tion and acute respiratory distress syndrome in 1 case. All patients except one post-operative infarction case were discharged on foot, and their mean hospital stay after operation was 12 days. No operative death was seen and the overall 90-day postoperative mortality rate was zero. Although the mean follow up period was 23 months, the overall 90-day postoperative mortality rate was 67%, so far.

**Conclusions:** Postoperative complication rate after pulmonary artery reconstruction was relatively high, but most of the complications were controllable. Lobectomy associated with pulmonary artery reconstruction procedure for lung cancer treatment is useful and feasible, with good intermediate term results.

---

**P3-275**

NSCLC: Surgery Posters, Wed, Sept 5 – Thur, Sept 6

**Systemic bilateral mediastinal dissection for c-N2 non small cell lung cancer**

Yokota, Toshiya; Hata, Enjo; Ikeda, Shingo
Mitsui Memorial Hospital, Chiyoda, Japan

**Background:** According to the study of regional lymphatic drainage, we considered reasonable lymphadenectomy contributes the post-operative survival of the patient with Non Small Cell Lung Cancer (NSCLC). And we had devised Systemic Bilateral Mediastinal Dissection and lung resection through a median sternotomy (ND3 operation) for patient with NSCLC.

**Material and Method:** The patients with NSCLC who are estimated to be able to conventional radical operation and aged 75 year-old or less becomes the adaptation of ND3 operation. From Jan.1988 through Dec. 2005, 264 patients of the left lung primary underwent ND3 operation and we reviewed 61 cases with c-N2 left primary NSCLC(excluding the patients with M1 disease).

**Results:** Overall 5-year survival rate in the 264 patients of left lung primary was 56.3%. Operative mortality in 264 patients was 4.0%, and in 112 patients who underwent ND3 operation from Jan.2000 through Dec.2005 was 1.8%.

In these c-N2(n=61) patients, over all five-year survival was 48.9%, and according to post-operative pathological stages were 100% in 4 pts of p-stage IA, 68.6% in 7 pts p-stagIB, 51.4% in 8 pts p-stage IIB,46.0% in 23 pts p-stageIIIA and 38.5% in 21 pts p-stageIIIB.

**Conclusion:** Our result suggested that the post-operative survival of patients with c-N2 NSCLC of the left lung primary would be remarkably improved by Systemic Bilateral Mediastinal Dissection.

---

**P3-276**

NSCLC: Surgery Posters, Wed, Sept 5 – Thur, Sept 6

**Limited resection trial for pulmonary ground-glass opacity nodules: case selection based on high resolution computed tomography**

Yoshida, Junji1 Ishii, Genichiro1 Nagai, Kanji1 Nishimura, Mitsuyo1 Ito, Hiroyuki2 Kameda, Yoichi2 Nakayama, Haruhiko3 Yamada, Kouzou3 Nishiwaki, Yutaka1
1 National Cancer Center Hospital East, Kashiwa, Japan 2 Kanagawa Cancer Center, Yokohama, Japan

**Background:** Japanese researchers have reported good correlation between radiologic and pathologic findings in early lung adenocarcinomas. For negative margin confirmation, we found a technique using lavage and cytological examination.

**Objectives:** Confirm limited resection efficacy as radical surgery in patients with high resolution CT indicated minimally invasive lung cancer. Confirm intraoperative cytology as a negative margin indicator and reliable margin non-recurrence predictor.

**Methods:** Enrollment requires patients with a tumor ≤2 cm in diameter, diagnosed or suspected as a clinical T1N0M0 carcinoma in the lung periphery based on a CT scan. They had to have a high-resolution CT scan indicating a sub-solid nodule with tumor disappearance ratio; TDR ≥0.5. (TDR = 1- DM/DL; DM: maximum tumor diameter on mediastinal settings, DL: maximum tumor diameter on lung settings).

Patients with a malignancy history within the past 5 years or those unfit for lobectomy and systematic lymph node dissection are excluded.

**Tumor disappearance ratio: TDR**

We perform a wedge or segmental resection. The used stapling cartridges are washed with 50 ml saline. Washing saline is centrifuged and sediment stained using Papanicolaou’s method and examined for cancer cells. If cytology is cancer positive, additional margin is resected, and cytologic examination repeated. If the second exam is positive, a routine lobectomy and systematic lymph node dissection will be performed.

**Treatment sequence**

- **Wedge or Segmental Resection**
  - **Cytologic Margin Evaluation**
    - Positive
    - Negative
  - **Additional Margin/CME**
    - Positive
    - Negative
  - **Lobectomy + node dissection**

Patients are followed up every 6 months by chest CT for the first 3 years, and annually thereafter for at least 5 years. The endpoint is 5 year local recurrence free survival rate.

The Kanagawa Cancer Center joined the study in November 2006.

**Results:** This prospective study started in November 2003, and 35 patients have been enrolled as of February 2007. This is 5.1% of all resected lung cancer patients during this period. There were 12 men and 23 women, aged 30-78, with an average 61 years. Tumor sizes ranged from 6 to 20 mm in the resected specimens, averaging 12 mm. There were 6 Noguchi type A tumors, 16 type B tumors, 9 type C tumors, one unclassifiable adenocarcinoma, and 3 inflammatory fibroses. All