

Abstracts' Service

Reconstruction of the Pulmonary Artery for Lung Cancer: Long-term Results

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Objective. Reconstruction of the pulmonary artery in association with lung resection is technically feasible with low morbidity and mortality. To assess long-term outcome, we report our 20-year experience.

Methods. Between 1989 and 2008, we performed pulmonary artery reconstruction in 105 patients with non-small cell lung cancer (tangential resections not included). Twenty-seven patients received induction therapy. We performed 47 pulmonary artery sleeve resections, 55 reconstructions by pericardial patch (with 3 left pneumonectomies under cardiopulmonary bypass), and 3 by pericardial conduit. In 65 patients, a bronchial sleeve resection was associated; in 6 cases superior vena caval reconstruction was also required. Fifteen patients had stage IB disease, 37 stage II, 31 IIIA, and 22 IIIB. Sixty-one patients had epidermoid carcinoma, and 38 adenocarcinoma. Mean follow-up was 46±40 months.

Results. The procedure-related complications were 1 pulmonary artery thrombosis requiring completion pneumonectomy and 1 massive hemoptysis leading to death (operative mortality, 0.95%); 28 patients had other complications, with the most frequent prolonged air leakage. Overall 5-year survival was 44%. Five- and 10-year survivals for stages I and II versus stage III were, respectively, 60% versus 28% and 25% versus 12%. Five-year survivals were 52.6% for N0 and N1 nodal involvement versus 20% for N2; 10-year survivals were 28% versus 3%. Multivariate analysis yielded induction therapy, N2 status, adenocarcinoma, and isolated pulmonary artery reconstruction as negative prognostic factors.

Conclusions. Pulmonary artery reconstruction is safe, with excellent long-term survival. Our results support this technique as an effective option for patients with lung cancer.

Aggressive Surgical Treatment of Multidrug-resistant Tuberculosis

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Objective. Because extensively drug-resistant tuberculosis has emerged, adequate control of drug-resistant tuberculosis has become increasingly important. We report on our experience using liberal adjuvant resectional surgery as part of aggressive treatment for multidrug-resistant tuberculosis.

Methods. We retrospectively reviewed the records of 56 consecutive patients who underwent pulmonary resection for multidrug-resistant tuberculosis between January 2000 and June 2007. There were 42 males and 14 females (mean age, 46 years; range, 22-64 years). Isolates were resistant to a mean of 5.6 drugs (range, 2-10 drugs). Multidrug regimens employing 3 to 7 drugs (mean, 4.6 drugs) were initiated in all patients. Indications for surgery were a high risk of relapse for 37 patients, persistent positive sputum for 18, and 1 with associated empyema.

Results. The 56 patients underwent 61 pulmonary

resections (3 completion pneumonectomies, 19 pneumonectomies, 33 lobectomies, and 6 segmentectomies). Bronchial stumps were reinforced with muscle flaps in 54 resections. Operative mortality and morbidity rates were 0% and 16%, respectively. All patients attained postoperative sputum-negative status. Relapse occurred in 5 patients; 3 were converted by a second resection, and 1 responded to augmentation of chemotherapy. Late death occurred for 2 patients without evidence of relapse. Among 54 survivors, 53 (98%) were considered cured.

Conclusions. Surgical treatment that complements medical treatment has proved safe and efficacious for patients with multidrug-resistant tuberculosis. In an era with extensively drug-resistant tuberculosis, an aggressive treatment approach to multidrug-resistant tuberculosis continues to be justified until a panacea for this refractory disease is available.

Pulmonary Aspergilloma: Analysis of Prognosis in Relation to Symptoms and Treatment

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Background. This study was conducted to assess the risk of surgical treatment and to evaluate surgical resection in patients with pulmonary aspergilloma.

Methods. We reviewed 240 patients with pulmonary aspergilloma who were diagnosed between 1990 and 2006. Of these, 135 patients underwent surgical procedure (group A) and 105 patients were managed with conservative treatment (group B).

Results. Forty complications (29.6%) and 6 operative mortalities (4.4%) developed in group A. During the follow-up period, there were 5 recurrences (3.9%) after surgical procedure. The overall 10-year survival rates of group A and group B were 84.8% and 56.7% ($p < 0.001$). In multivariate analysis, age, sex, and

surgical treatment were favorable prognostic factors. Symptoms of hemoptysis and blood-tinged sputum were not significant prognostic factor even in univariate analysis.

Conclusions. Our results indicate that (1) early morbidity and mortality rates of surgical treatment for pulmonary aspergilloma are acceptable, and (2) surgical treatment is helpful not only to reduce symptoms but also to prolong the survival of patients with pulmonary aspergilloma. Although more studies are needed, our data support the conclusion that surgical resection should be considered for all patients with pulmonary aspergilloma who have acceptable pulmonary reserve.

Impact of Tumor Length on Long-Term Survival of pT1 Esophageal Adenocarcinoma

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Introduction. The impact of esophageal tumor length on pT1 esophageal adenocarcinoma has not been well evaluated.

Methods. Case histories of all patients ($n=133$) undergoing esophageal resection from 1979 to 2007 with pT1 adenocarcinoma of the esophagus were reviewed. Univariate and multivariate analyses of esophageal tumor length and other standard prognostic factors were performed.

Results. Patients with early-stage pT1 esophageal adenocarcinoma with tumors less than 3 cm demonstrate decreased long-term survival (3 years: $>3\text{cm}=46\%$ vs 93% ; $p < 0.001$) and higher risk of lymph node involvement (lymph node positive: $>3\text{cm}=47\%$ vs 10% ; $p < 0.001$). Multivariable analysis shows that esophageal tumor length ($>3\text{ cm}$) is an independent risk factor for survival in patients with pT1 early-

stage esophageal cancer (hazard ratio: 4.8, 95% confidence intervals: 1.4-16.5; $p < 0.001$) even when controlled for submucosal involvement, lymph node involvement, and lymphatic/vascular invasion status. In combination with submucosal involvement, esophageal tumor length ($>3\text{ cm}$) identifies a high-risk population of pT1 esophageal adenocarcinoma (3 years: group 1 [0 risk factors] = 100%, group 2 [1 risk factor] = 87%, and group 3 [2 risk factors] = 33%; $p < 0.001$).

Conclusions. This study demonstrates that esophageal tumor length ($>3\text{ cm}$) is a risk factor for long-term survival and lymph node involvement in early-stage pT1 esophageal adenocarcinoma. Esophageal tumor length ($>3\text{ cm}$) in combination with submucosal involvement may help to identify a high-risk group of patients with pT1 esophageal adenocarcinoma.

Is There a Subset of Patients with Preoperatively Diagnosed N2 Non-Small Cell Lung Cancer Who Might Benefit from Surgical Resection?

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Objective. The role of surgery in the treatment of preoperatively diagnosed N2 non-small cell lung cancer remains controversial. This study sought significant prognostic factors to select candidates for surgery and assess prognosis.

Methods. The study population included 277 patients who underwent primary resection (192) or induction chemotherapy followed by surgery (85) for preoperatively diagnosed, potentially resectable N2 non-small cell lung cancer. N2 descriptors were prospectively recorded. Kaplan-Meier curves were used to evaluate survival, and statistical significance of differences between curves was assessed by log-rank test. Cox regression was used for multivariate analyses.

Results. Preoperative significant prognostic factors were number of mediastinal node levels involved ($p < .001$),

symptom severity ($p = .013$), clinical T ($p = .041$), and induction chemotherapy ($p = .001$). Three groups with different prognoses were based on individual prognostic score. The group that did best had a median survival of 29.6 months. Postoperative predictors of survival were pathologic T ($p = .003$), tumor residue ($p = .034$), and number of mediastinal nodes involved ($p < .001$). Of 3 groups with different prognoses, the most favorable had a median survival as long as 42 months.

Conclusions. This study provides a practical tool that uses significant prognostic factors to predict which patient with preoperatively diagnosed N2 non-small lung cancer have better prognoses. Because patients with the favorable prognostic factors showed good long-term survival and excellent local disease control, surgery should still play an important role in the multimodality treatment of these patients.

Variants of DENNB1B Associated with Asthma in Children

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Background. Asthma is a complex disease that has genetic and environmental causes. The genetic factors associated with susceptibility to asthma remain largely unknown.

Methods. We carried out a genomewide association study involving children with asthma. The sample included 793 North American children of European ancestry with persistent asthma who required daily inhaled glucocorticoid therapy and 1988 matched controls (the discovery set). We also tested for genomewide association in an independent cohort of

917 persons of European ancestry who had asthma and 1546 matched controls (the replication set). Finally, we tested for an association between 20 single-nucleotide polymorphisms (SNPs) at chromosome 1q31 and asthma in 1667 North American children of African ancestry who had asthma and 2045 ancestrally matched controls.

Results. In our meta-analysis of all samples from persons of European ancestry, we observed an association, with genomewide significance, between asthma and SNPs at the previously reported locus on

17q21 and an additional eight SNPs at a novel locus on 1q31. The SNP most strongly associated with asthma was rs2786098 ($P=8.55 \times 10^{-9}$). We observed replication of the association of asthma with SNP rs2786098 in the independent series of persons of European ancestry (combined $P=9.3 \times 10^{-11}$). The alternative allele of each of the eight SNPs on chromosome 1q31 was strongly associated with asthma in the children of African ancestry ($P=1.6 \times 10^{-13}$ for the

comparison across all samples). The 1q31 locus contains *DENND1B*, a gene that is expressed by natural killer cells and dendritic cells and that encodes a protein that interacts with the tumor necrosis factor a receptor.

Conclusions. We have identified a locus containing *DENND1B* on chromosome 1q31.3 that is associated with susceptibility to asthma.

ERRATUM

In the article entitled "Oxidative Stress and Obstructive Sleep Apnoea Syndrome" by T.D. Singh, K. Patial, V.K. Vijayan and K. Ravi (*Indian Journal of Chest Diseases and Allied Sciences*, 2009, 51: 217-224), an error occurred in the "Abstract" (page 214, line 7) and "Material and Methods" (Page 218, right-hand col., second para, line 6). The dosage of vitamin C should be read as 100mg BD instead of 100 IU BD. Authors regret the error .