Pneumonectomy for Locally Advanced Lung Cancer after Neoadjuvant Concurrent Chemo-radiation Therapy

Division of Thoracic Surgery
National Hospital Organization
Yamaguchi Ube Medical Center, Japan
Disclosure

none
Purpose

✓ To evaluate pneumonectomy for locally advanced non-small-cell lung cancer (NSCLC) after neoadjuvant concurrent chemotherapy and radiotherapy
Materials and Methods

✓ 16 consecutive patients with locally advanced NSCLC treated by pneumonectomy after neoadjuvant concurrent chemo-radiation therapy from Jan. 2007 to present

✓ Prognosis data updated in March 2015

✓ One institutional retrospective study
Pneumonectomy after neoadjuvant concurrent chemo-radiation therapy

- CDDP 40 mg/m² + TXT 40 mg/m² (Day 1, 8, 29, 36)
- Radiation 46 Gy (2 Gy x 23)
  - tumor, hilum, and mediastinum
- Surgery 4 to 6 weeks after the end of radiotherapy
- No adjuvant treatment for R0 resection
Results

Mean age at pneumonectomy: 59 (41 - 70)

Sex: female 3, male 13

Side: right 3, left 13

Intrapericardial pneumonectomy: 7
Pathological diagnosis

adenocarcinoma  7

squamous cell carcinoma  6

adenosquamous cell carcinoma  1

large cell neuroendocrine carcinoma  1

atypical carcinoid (preoperative diagnosis: squamous)  1
c-Stage before chemo-radiation

IIIB: 6, IIIA: 8, IIA: 1, IB: 1

T4: 9, T3: 3, T2: 3, T1: 1

N2: 9, N1: 5, N0: 2

c-N2: 9 patients

- radiological (CT, PET) N2: 5 patients
- pathological (EBUS, c-MED) N2: 4 patients
Abnormal blood tumor marker

CEA 337, 105, 33 ng/ml [normal range < 5.0]

CYFRA 20, 11 ng/ml [normal range < 2.0]

SCC 10, 8.5 ng/ml [normal range < 1.5]

All abnormal blood tumor markers: down to normal
Grade 3 toxicity of neoadjuvant chemo-radiation

- Neutropenia 10 (63%)
- Anorexia 3
- Diarrhea 1
- Liver damage 1

Grade 4 toxicity: none
Bronchial stump buttress

the first right patient (2008) by the omentum

calent 15 patients by the intercostal muscle flap

Median operation time: 4 h 35 m (2 h 35 m – 7 h 30 m)

Median bleeding amount: 175 g (60 g – 560 g)
R0 resection: all 16 patients

Serious operative complication: none

p-Stage after pneumonectomy

CR (complete response)  6 (38%)

IIIB    1
IIIA    2
IIA     3
IB      1
IA      3
Prognosis

✓ All 16 patients are alive without oxygen therapy.

✓ Median follow up after pneumonectomy

3 years 9 months (1 y 4 m – 8 y 2 m)

✓ PS 0: 15 patients, PS 1: 1 patient

✓ c-Stage of five 5-year-survivors: IIIB 4, IIIA 1

✓ 14 patients have NO recurrent or metastatic cancer.
Two patients have developed metastatic lesions.

- Contralateral lung metastasis was resected in 1 patient.
  
  Sep. 2009: lt pneumonectomy
  
  Jul. 2013: contralateral lung metastasis resection
  
  March 2015: alive without cancer
  
- The other patient is alive with metastatic lesions.
  
  Sep. 2012: lt pneumonectomy
  
  Sep. 2014: liver, abdominal LN, retro-peritoneum
  
  March 2015: alive
Conclusions

✓ 16 patients who underwent pneumonectomy for locally advanced NSCLC after neoadjuvant concurrent chemo-radiation therapy are all alive.

✓ This treatment strategy seems to be feasible and effective.
Thank you for your attention!

K. Okabe
Chief, Division of Thoracic Surgery
National Hospital Organization
Yamaguchi Ube Medical Center, Japan