Case Report

A Very Elderly Lung Cancer Patient: Case Report of a Long Disease Free Survival

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Despite the fact that non-small-cell lung cancer (NSCLC) is very common in the older population, these patients are frequently underrepresented in clinical and surgical trials and thus it is difficult to reach evidence-based recommendations for this special population. We present a case of a surgical treatment of asymptomatic lung cancer in a very elderly patient. The patient had no recurrence for 4 years after a complete resection.

Keywords: lung cancer in the octogenarians, elderly lung cancer

Introduction

Non-small-cell lung cancer (NSCLC) accounts for 85% of all cases of lung cancer, which is increasingly a disease of older patients.1) Approximately, 220,000 new cases of lung cancer occurred in 2009 in the USA, with approximately 159,000 deaths due to this devastating disease. More than two-thirds of NSCLC cases are diagnosed in persons of age 65 years or older and one in three patients is aged 75 years or older.2) The proportion of the elderly among NSCLC patients is expected to increase progressively due to the aging of the population in many countries.

Age itself is not a negative predictive factor and NSCLC treatment should not be omitted solely on the basis of chronological age. Recent reports indicate that age is not a contraindication to pulmonary resection for octogenarians with NSCLC.3–5)

Elderly patients should not be denied surgery solely due to the age because properly selected ≥ 80 year olds with lung cancer can be resected safely with acceptable long-term survival. The benefits and the risks of surgical treatment in this subpopulation should be assessed.

Here, we present a case of an old man to enrich the series of octogenarians undergoing thoracic surgery for lung cancer.

Clinical Summary

A 91-year-old male was referred to our hospital with a solitary pulmonary nodule in the right upper lobe lung, which was incidentally identified with X-ray chest during a recovery evaluation for accidental head injury (minimal subdural hemorrhage in the left frontal resolved spontaneously without complications).

The computed tomography (CT) images confirmed an approximately 3.5-cm rounded mass of solid tissue (T2a...
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according to the 7th edition of TNM-staging of lung cancer) with slightly enlarged lymph nodes (about 1 cm in short axis) in the ipsilateral lower paratracheal mediastinum and subaortic in the aorto-pulmonary window (station node number 4R and 5 according to the American Thoracic Society mapping scheme) (Fig. 1).

From a radiological point of view the disease was confined to local-regional sites (cT2a N0, stage 1b according to the 7th edition of TNM-staging of lung cancer).

In July 2008, he was referred to our department for surgical evaluation. He was asymptomatic and his physical examination was unremarkable.

Patient was generally in good health with no significant past medical history; particularly with no history of lung disease. Previously he had appendectomy, tonsillectomy and typhus and he was a heavy smoker until 2001. He also denied diabetes, hypertension, dyslipidemia or heart disease. Right internal carotid artery (ICA) stenosis of 40% (not significant). He had an active life with a normal stress test. The blood values were within limits and blood gas analysis also showed normal ranges.

The pre-surgical tests (transthoracic echocardiogram, exercise electrocardiogram, cardiac stress testing, carotid Doppler ultrasound, spirometry) showed no real risk factors such as to preclude surgery lobectomy of the right superior pulmonary associated at the hilar-mediastinal lymphadenectomy. In particular, preoperative pulmonary function test (PFT) showed forced expiratory volume (FEV1) 1,65L (80%) forced vital capacity (FVC) 2,18L (74%).

He underwent a bronchofiberscopy with bronchial aspirate and lavage, which were negative for malignancy. A preoperative positron emission tomography (PET)/CT scan was not performed due to the fact that neither a positive nor a negative PET/CT scan result would rule out a surgical intervention. Brain magnetic resonance imaging (MRI), abdominal ultrasonography, bone scintigraphy did not reveal malignancy.

The patient then underwent curative right upper lobectomy with anterolateral thoracotomy incision as a final treatment and well tolerated the procedure without any remarkable post-operative course. A pathological examination of the right lung lobe revealed a 4-cm poorly differentiated subpleural non-small cell lung adenocarcinoma, with focused necrosis and without significant angioinvasiveness. Lymph nodal metastases were recorded in 1/1 peribronchial node and in 4/5 ipsilateral mediastinal nodes (pT2aN2). The resection margins were free of tumor cells. Postoperative course was uneventful and the patient was discharged on day 5 after operation. And no adjuvant treatment was performed after the surgery.

During a follow-up period of 4 years, CT scans, abdominal ultrasonography were performed without recurrence. Currently, the patient is alive and disease-free without any further treatment. 58 months after surgery and PFT recently performed in follow-up showed FEV1 1,05L (57%) FVC 1,64L (61%). He has had a complete response (CR).

Fig. 1 The left side lung window computed tomography (CT) image shows a mass with irregular borders sited in the upper right lobe. The right side parenchymal window shows the mass with contrast enhancement and central spot hypodense suggestive of necrosis according to histology; there is lymph node in paratracheal without malignancy radiological features.
# Discussion

Lung cancer is one of the most common malignancies and the leading cause of cancer related death worldwide. Surgical intervention still plays a crucial role in optimal treatment, for achieving better loco-regional control and to obtain a favorable prognosis. The number of aged patients is constantly growing in Europe and in the world. The progressive aging of the population goes with an increased incidence of cancer, especially lung cancer.\(^\text{6,7}\)

Surgical treatment of aged patients presenting comorbidity with NSCLC is a serious challenge for clinicians. Generally, the aged patients are excluded from surgical treatments and are undertreated. Hesitancy to recommend surgery for the aged patients is partly based on the expectation that the rate of complications and mortality is higher in this group of patients.

Some papers report that the age is not a negative predictive factor and treatment should not be denied on the basis of chronological age alone. Furthermore, several studies support surgical resection as a feasible choice in the aged patient and that age per se is not a contraindication for various surgical procedures.\(^\text{8–11}\)

Pathological nodal status is one of the most important prognostic factors for NSCLC patients. Despite improvements of preoperative mediastinal staging by PET or CT imaging, the extent of lymph node (LN) involvement frequently remains clinically under recognized as in our case report. It is controversial whether elderly patients with confirmed N2 disease should be considered for induction chemotherapy before surgery.\(^\text{6}\)

In our case, the CT scan was not very useful because the lymph nodes were not radiologically suspicious and PET scan was not performed because, in our opinion for this specific case, neither a positive nor a negative PET/CT scan result would have ruled out surgical intervention.

In this very elderly patient, we performed a nonaggressive mediastinal lymphadenectomy according to pre-surgery imaging.

To our knowledge, there is no literature reporting a case of a patient older than 90 years undergoing pulmonary lobectomy with a median survival of approximately 4 years.

In conclusion, surgical treatment can extend survival of elderly NSCLC patients, because surgery remains the only potentially curative treatment. We believe that aggressive surgical treatment should be provided if patients can tolerate surgery, but certain subgroups of patients, including those with severe comorbidities should be treated using other modalities (chemotherapy, radiotherapy, locoregional treatments).

We report the rare case of a very elderly patient submitted to successful thoracic surgery for lung cancer. Our surgical plan has achieved a satisfactory clinical outcome with good postsurgical recovery avoiding complications related to tumor growth.

# Conclusion

An increasing number of elderly patients will present with lung carcinoma\(^\text{2}\) so physicians will be increasingly confronted by octogenarians with lung cancer.

The most important question is that octogenarians will often present with numerous comorbidities, clinicians have commonly offered less aggressive treatment to this subgroup of patients, with some recommending a nonoperative approach or a less than an anatomic resection.\(^\text{13}\)

However, advances in preoperative and postoperative care and in surgical technique have encouraged many to offer surgical resection to the elderly population.

We present a case of a surgical treatment of asymptomatic lung cancer in a very elderly patient. The patient had no recurrence for 4 years after a complete resection.

# Disclosure Statement

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The informed consent was obtained from the patient.

# References