LTC-1 Bilateral phrenic nerve paralysis after living-donor lobar lung transplantation: A case report

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Phrenic nerve paralysis is a well-known complication after cardiac surgery, but fewer cases have been reported after lung transplantation. The purpose of this report is to present a case of bilateral phrenic nerve paralysis as a complication of living-donor lobar lung transplantation (LDLLT). A 32 year-old woman underwent LDLLT for end-stage lymphangioleiomyomatosis (LAM) on August 1, 2005. First of all, the native lungs of hers were hyperinflated and there was tight pleural adhesion all around the pleural cavity maybe due to the history of pleurodesis or surgical procedure for pneumothorax. In addition, cardiopulmonary bypass and local topical hypothermia using iced saline solution and slushed ice was used. There was mild pulmonary edema on right side just after weaning from the cardiopulmonary bypass. We performed re-thoracotomy eight days after transplant because of hematoma in the chest cavity. Bilateral phrenic nerve paralysis with inability to wean her from the ventilator occurred and diagnosed by ultrasonography 30days after transplant. She finally could take off the ventilator 120 days after transplant, and she can enjoy everyday life without any respiratory support. The electromyogram and the nerve conduction study were useful to assess the recovery of neurological function. Phrenic nerve paralysis is an infrequent complication after lung transplantation, but it requires longer intensive care unit and hospital stay.

LTC-3 Possible right single lung transplantation for a bronchiectasis patient with a prior left lower lobectomy.; Is performing a completion pneumonectomy in advance for a potential transplant candidate ethically acceptable?

Department of General Thoracic Surgery (GTS) and Department of Respiriology (Res)Fukuoka University Lung Transplantation Protocol

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[Patients background]

The patient is a 46-year-old female with left side predominant bronchiectasis. A lobectomy for the destroyed left lower lobe had been performed at 34 years of age. Her respiratory function thereafter deteriorated with the progression of bronchiectasis in both her right and left upper lobe lungs. She has also suffered multiple resistant *pseudomonas aeruginosa* infections.

[Respiratory function and Performance status]

VC = 0.82L (26%), FEV1.0 = 0.57L (22%), Blood gas (Nasal O2 / 1L); pH = 7.378, PaO2 = 61.7 torr, PaCO2 = 47.0 torr, Performance / H-J III

[Possible treatment options]

Her respiratory function, performance status, as well as her expected prognosis indicate that she will be a possible lung transplant candidate in the near future. Because of the infectious nature of the disease, a bilateral lung transplantation or a right single lung transplant with "No left lung" situation should thus be considered. A bilateral lung transplantation from a cadaveric donor would be an extremely difficult and high risk procedures because of the very limited time for surgery in this type of transplant setting. The completion a left pneumonectomy in advance in order to prepare for a future right single lung transplantation might therefore be valuable surgical treatment for this patient, however, such surgery should be carefully considered based on a risk balance regarding this "High risk" procedure and the fact that a completion pneumonectomy is not an absolutely necessary procedure at this time. As a result, the question arises as to whether or not such a surgical procedure is ethically acceptable or not. This question should be explored in future related studies.

LTC-2 Title: Recurrent Lymphangioleiomyomatosis after Lung Transplantation

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Lymphangioleiomyomatosis (LAM) is characterized by the proliferation of abnormal smooth muscle cells and cystic degeneration of the lung, affecting almost exclusively child-bearing young women. Lung transplantation has been performed as a therapeutic approach for end-stage LAM, but there are several reports of LAM recurrence after lung transplantation. In all reported cases, the diagnosis was made at the time of autopsy, but this is a very rare case diagnosed early, that is, when the patient was alive and her allograft had not deteriorated badly. A 24-year-old woman presented with pneumothorax and infiltrates in the left lung one year after bilateral living-related lobar lung transplantation for lymphangioleiomyomatosis. These symptoms and radiologic findings occurred repeatedly and then improved quickly. Nine months later, chest CT revealed a tiny emphysematous change of the subpleural region in the left lung. It was exacerbated on the follow-up CT, and was diagnosed as LAM recurrence by transbronchial lung biopsy. We started the administration of sirolimus instead of azathioprine, which has continued for about a half year without apparent side effects. Recent studies indicate that LAM cells can migrate or metastasize to form new lesions in multiple organs, and our case illustrated this metastatic and migrant behavior of LAM cells. Since LAM is a systemic disease, we should observe LAM patients carefully after lung transplantation, considering the possibility of recurrence, especially in patients with remaining LAM lesions after lung transplantation.

LTC-4 Management of chylous ascites with lymphangioleiomyomatosis by peritoneovenous shunt, relating to lung transplantation

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Lymphangioleiomyomatosis (LAM) is characterized by the nonneoplastic proliferation of atypical smooth muscle cells within the lung parenchyma and elsewhere, leading to progressive loss of lung function, and eventually death. Lung transplantation is indicated for the end stage LAM, which is a major indication for lung transplantation in Japan. LAM causes some complications including pneumothorax, chylous pleural effusion and chylous ascites. Although chylous ascites is not usually critical, there is no radical treatment and it makes some problems in management of patients both waiting for and having undergone lung transplantation. We report the experiences of chylous ascites with LAM by a peritoneovenous shunt, relating to lung transplantation. Case 1: A 34 years old woman, registered to the waiting list, was admitted to Tohoku University Hospital for the treatment of left pneumothorax. She received left pleural drainage and chemical pleurodesis. She complained of abdominal distension. Abdominal CT demonstrated an accumulation of ascites. Denver peritoneovenous shunt was inserted to decrease the accumulation of ascites, and the symptom was reduced. Chylous ascites was well controlled by the shunt but she eventually died of rapid progress of lung disease 8 months after the administration. Case 2: A 24 years old woman complained of chylous pleural effusion and was diagnosed LAM. She received chemical pleurodesis to control repeated pneumothorax and chyrous pleural effusion. When she was 37 years old, Denver shunt was inserted to control an accumulation of chyrous ascites. She underwent right lung transplantation when she was 39 years old. After the transplantation, a recurrence of right chyrorthorax appeared and pleurodesis was done. The chylous ascites was well controlled with the shunt before and after lung transplantation. However, she unexpectedly died of pulmonary thromboembolism 27 months after transplantation, which may be a complication associated with Denver shunt.