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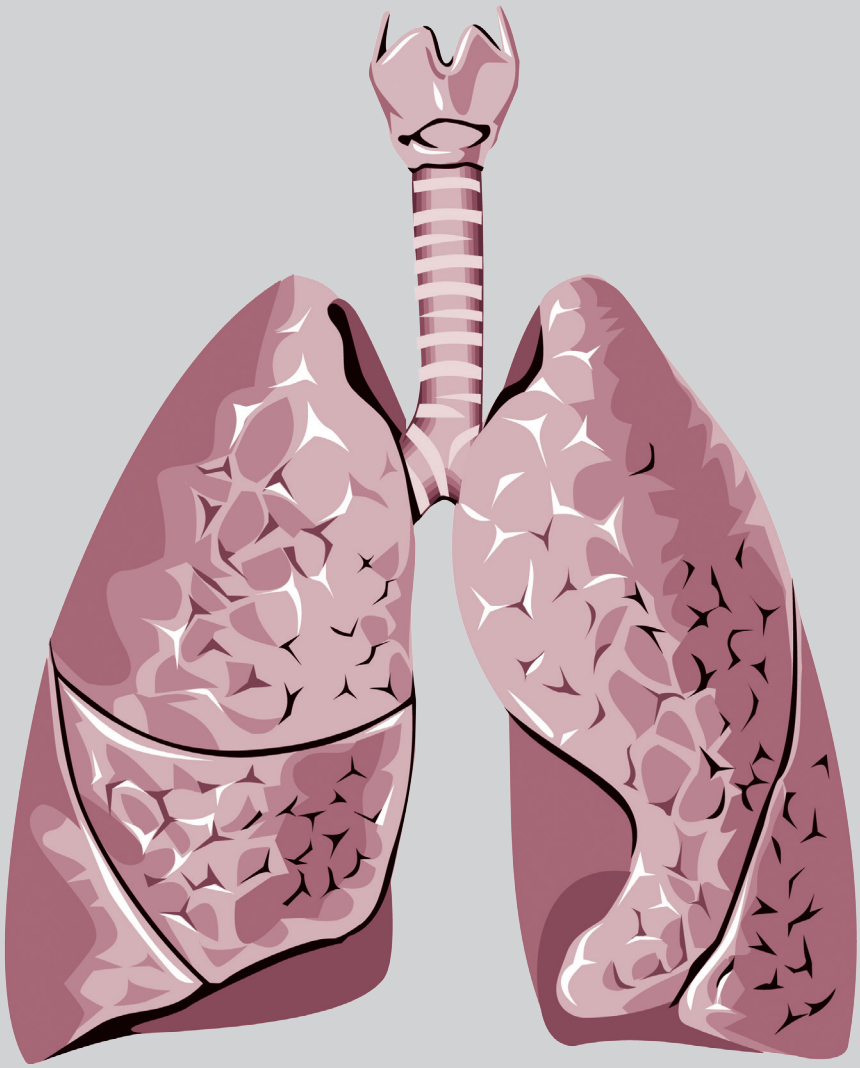

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Continuous Positive Airway Pressure Reduces Serum Levels of Alzheimer Disease-Related Proteins in Patients with Obstructive Sleep Apnea

Ching-Shan Luo[1,2], Shang-Yang Lin[3], Sheng-Ming Wu[1,4], Cheng-Yu Tsai[5], Wen-Te Liu[1,3,6], Po-Hao Feng[1,4]

Introduction: Alzheimer disease (AD) is the most common form of dementia, and patients with obstructive sleep apnea (OSA) show significantly high serum levels of AD-related proteins. Because of the high AD prevalence, the heavy burden on the medical system, and the lack of promising pharmacological options, treatments focusing on reducing AD risk must be urgently explored. Hypoxia causes the accumulation of AD-related proteins, and sleep disruption may disturb the clearance process. Continuous positive airway pressure (CPAP) is supposed to improve nocturnal oxygen saturation and sleep quality, thus reducing AD risk.

Methods: The role of short-term CPAP in reducing the serum level of AD-related proteins in patients with OSA was evaluated using immuno-magnetic reduction technology. Twenty-three OSA patients were divided into 4 groups according to whether they had received CPAP or not, and their AD risk was assessed by calculating the product of 2 AD-related proteins. The serum levels of tau and amyloid β (Aβ)42 were determined before and after 3–6 months of CPAP treatment (with a corresponding time for those patients who refused CPAP).

Results: After short-term CPAP treatment, the serum levels of tau and Aβ42 were significantly reduced in the high AD risk group.

Conclusion: Our preliminary result shows that short-term CPAP treatment efficiently reduces the serum level of AD-related proteins in OSA patients with a high AD risk. We highly recommend incorporating hematological biomarker examinations into routine tests for OSA patients, as well as the use of CPAP treatment for patients with a high AD risk. ***(Thorac Med 2023; 38: 1-9)***

Key words: Continuous positive airway pressure, Obstructive sleep apnea, Alzheimer disease, Amyloid beta protein, Tau proteins, Immuno-magnetic reduction assay

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Prediction of Pulmonary Rehabilitation in Patients with Chronic Lung Disease Using 6-minute Walk Distance

Yu-Shan Li[1], Hui-Chuan Chen[1], Jung-Yien Chien[2], Huey-Dong Wu[1], Li-Ying Wang[3,4], Ping-Lun Hsieh[3,4]

Background: Pulmonary rehabilitation (PR) is an important part of the management and health maintenance of chronic lung disease (CLD) patients. This study aimed to identify the predictor of the percent predicted of the 6-minute walk distance (6MWD) in CLD patients.

Methods: Patients suffering from CLD, including both chronic obstructive pulmonary disease (COPD) (n=102) and non-COPD (n=39), who received an outpatient 8-week structured PR program between 2017 and 2019, were included, and their performance was analyzed.

Results: A total of 141 patients were included in the study. The patients were divided into 2 groups depending on whether the increase in the 6MWD reached the minimal clinically important difference (MCID) of 30 m after PR. A total of 78 and 63 patients were classified into the responders (> 30 m) and non-responders (≤ 30 m) group, respectively. All patients showed significant improvements in the 6MWD and modified Medical Research Council dyspnea scale. Multivariable logistic regression analysis showed that younger age (p= 0.005, OR = 0.89, 95% CI: 0.83 – 0.97) and < 60% predicted of the 6MWD value were independent factors predicting PR responders.

Conclusion: This study found that physical performance was improved after 8-week structured PR in patients with CLD. Younger age and 6MWD < 60% of the predicted value could predict a significant functional exercise capacity response to PR. ***(Thorac Med 2023; 38: 10-19)***

Key words: Pulmonary rehabilitation, chronic lung disease (CLD), 6-minute walk distance (6MWD)

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Three-Dimensional Reconstruction for Mediastinal Surgery in a Patient with Left-Sided Superior Vena Cava

Pei-Hsing Chen[1], Chien-Lun Chen[2], Jin-Shing Chen[3]

Persistent left-sided superior vena cava, the most common congenital malformation of the thoracic venous return, occurs most frequently in patients with congenital heart disease. We reported the case of a 64-year-old man with a mediastinal tumor complicated with left-sided superior vena cava, which was incidentally found on a computed tomography scan. The patient underwent tumor excision via median sternotomy. His postoperative course was uncomplicated, and he continued to be well during his regular follow-ups. Three-dimensional reconstruction for left-sided superior vena cava before thoracic surgery could easily facilitate a safer surgery. ***(Thorac Med 2023; 38: 20-24)***

Key words: persistent left-sided superior vena cava, mediastinal tumor, 3-dimensional reconstruction

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Accidentally Found Lung Cancer in Teenager Donor Lung

Hao-Yun Liu[1], Yen-Lin Huang[2], Pei-Hsing Chen[3], Hsao-Hsun Hsu[1,4]

For most post-transplantation patients, the meantime from transplantation to the diagnosis of lung cancer was 76 months (range, 9-192 months). In previous, the cases were considered as induced lung cancer. Advances in immunosuppression management have led to prolonged survival in many transplant recipients. A by-product of this improvement, however, has been the identification of several complications of chronic immunosuppression. Among the most important of these is the substantially increased incidence of malignancies in transplant recipients. But in our recipient, a left upper lung adenocarcinoma was accidentally found, which is 0.001 cubic centimeter in size, and resected randomly due to the oversize of the lung during the sternum closure. In past, most post-transplantation lung cancer is considered immunosuppression related. But our case showed the incidence might be underestimated, especially in the high lung cancer prevalence area like Taiwan. The combination of the donor's family history and the routine pre-transplantation donor's chest CT might be help for early detection of donor's lung malignancy. The frozen pathology could be applied after the pre-donation lung computed tomography scan if suspected lesion was identified. In this way, we believe the pre-donation evaluation could be more adequate. ***(Thorac Med 2023; 38: 25-28)***

Key words: lung cancer, adenocarcinoma, teenager donor lung, teenager recipient, lung transplantation

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Localized Pleural Amyloidosis

Pei-yi Chu[1], Kuan-Hsun Lin[1], Tsai-Wang Huang[1], Shih-Chun Lee[1]

Amyloidosis, defined as the deposition of fibrous protein amyloid, usually involves systemic organs and produces symptoms. Localized asymptomatic amyloidosis is rare. We describe the case of an asymptomatic 67-year-old woman who was admitted for investigation of multiple abnormal pleural tumors that were detected on chest radiography. Localized pleural amyloidosis was diagnosed after video-assisted thoracoscopic resection. We discuss this case and review the relevant literature. ***(Thorac Med 2023; 38: 29-33)***

Key words: Chalk powder, Pleural amyloidosis, Surgery

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A case of Primary Pleural Epithelioid Angiosarcoma Mimicking Malignant Pleural Effusion of Advanced Prostate Cancer

Cheng-Kang Lu[1], Chun-Liang Tung[2], Hung-I Kuo[1]

Angiosarcomas are rare cancers and are often aggressive. A pleural origin is extremely rare, and seen only in some case reports. We reported the case of a patient with advanced prostate cancer presenting with pleural effusion that was initially assumed to be pleural metastasis. This 84-year-old smoker presented with bilateral chest pain. The chest X-ray and chest computed tomography revealed bilateral pleural effusion. Evaluation of the pleural fluid obtained from a thoracentesis revealed an exudative effusion with no evidence of malignant cells. Diagnostic pleuroscopy was performed, and the pleural biopsy revealed primary pleural epithelioid angiosarcoma. The patient died 1 month after the diagnosis. Pleural epithelioid angiosarcoma often leads to a poor prognosis, with the majority of patients dying within months of diagnosis. This unusual case that was diagnosed as primary epithelioid angiosarcoma mimicking malignant pleural effusion of prostate cancer is a reminder that clinical physicians should make a differential diagnosis for emerging clinical signs and symptoms less common in the patient's underlying disease. ***(Thorac Med 2023; 38: 34-39)***

Key words: angiosarcoma, pleural effusion, chest pain, pleuroscopy

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Multiple Ground-Glass Nodules Treated with Surgery and Radiofrequency Ablation–A Case Report

Pei-Chin Su[1], Frank Cheau-Feng Lin[1,2*]

A feasible therapeutic plan for ground-glass nodules is surgical resection. Operation plays an important role in both diagnosis and treatment. But, for a patient with multiple ground-glass nodules, adequate preservation of lung volume is an important issue. We present the case of a female with multiple ground-glass nodules who was treated using minimally invasive lobectomy, pre-operative localization followed with wedge resections, and radiofrequency ablation. The outcome was satisfactory. The combined treatment was effective, but further application and discussion are needed. ***(Thorac Med 2023; 38: 40-45)***

Key words: Ground glass nodule, lobectomy, wedge resection, RFA

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Pulmonary Cavitary Lesion as A Rare Radiologic Finding of Organizing Pneumonia: A Case Report

Yu-Chi Tsai[1], Fan-Min Lin[1,2]

Organizing pneumonia, a type of interstitial lung disease, has a unique pathologic and radiologic presentation. Manifestations of cryptogenic organizing pneumonia on plain film are typically quite distinctive, with features similar to extensive pneumonia, including bilateral, patchy or diffuse, consolidative or ground glass opacities. A cavitary lesion is a rare radiologic presentation of organizing pneumonia. We present a case of organizing pneumonia with a cavitary lesion on chest films. Timely diagnosis and corticosteroid use are the cornerstones of treatment for organizing pneumonia. ***(Thorac Med 2023; 38: 46-53)***

Key words: Organizing pneumonia, cryptogenic organizing pneumonia, cavitation

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A Rare Case of Endobronchial Pulmonary Metastasis of Hepatocellular Carcinoma: Case Report and Literature Review

Juei-Yang Ma[1], Pei-Chien Tsai[2], Chia-You Kuo[1], Chia-Min Chen[1], Wei-An Chang[1,3]

Hepatocellular carcinoma (HCC) is the fourth leading cause of cancer-related deaths worldwide (1), and in Taiwan. According to previous reviews, the lung is the most frequently involved organ in extrahepatic metastases (55%). The typical presentation of pulmonary metastasis of HCC is noncalcified soft-tissue nodules with a lower lobe predominance. Another frequently reported radiologic finding of lung metastasis of HCC is pulmonary tumor emboli. Here, we reported the case of a 62-year-old man who suffered from frequent intermittent hemoptysis, progressive dyspnea, and productive cough for 2-3 weeks. He was diagnosed with endobronchial pulmonary metastasis of HCC, and the symptoms improved significantly after bronchoscopic intervention. During the procedure, we encountered massive hemoptysis after removing the easily detached tumor. The hemoptysis was treated using several methods of hemostasis along with fiberoptic bronchoscopy. A similar episode recurred 7 months later. After 2 interventions, the patient had an uneventful recovery without further fatal hemoptysis or respiratory failure. Our case reveals a unique characteristic of HCC lung metastasis and highlights the usefulness of fiberoptic bronchoscopy in containing hemostasis.
(Thorac Med 2023; 38: 54-61)

Key words: pulmonary metastasis of hepatocellular carcinoma, endobronchial type

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Pulmonary Artery Intimal Sarcoma Mimicking Pulmonary Embolism: A Case Report and literature Review for Improvement of Early Diagnosis

Wei-Fan Ou[1], Chung-Chi Wang[2], Yong-Chen Hsu[3], Tsung-Ying Yang[1,4], Jeng-Sen Tseng[1,5,6]

Pulmonary artery intimal sarcoma (PAIS) is a rare disease with a poor outcome. Surgical intervention with complete tumor removal is the mainstay of treatment to prolong survival. However, PAIS has many clinical presentations similar to those of pulmonary embolism (PE), resulting in delayed diagnosis. Herein, we report the case of a 60-year-old man with the initial presentation of recurrent hemoptysis for 2 weeks, accompanied with significant body weight loss, cough, and dyspnea before admission. Based on a filling defect of the left pulmonary artery, as seen on computed tomography (CT) of the chest, the patient was initially diagnosed as having PE. After anticoagulant treatment, the patient felt his symptoms had improved. However, recurrent hemoptysis was still noted. Repeated chest CT showed enlargement of the filling defect, which suggested the possibility of tumor mass. Also, there were 2 nodules in the left lung field that likely represented lung metastasis. Surgical excision biopsy from the left pulmonary artery was performed, and pathology revealed PAIS. This case report can remind clinicians to be alert for a delayed diagnosis of PAIS. Our literature review focused on clinical symptoms, laboratory findings, and image studies to help differentiate PAIS from PE. ***(Thorac Med 2023; 38: 62-68)***

Key words: Pulmonary artery intimal sarcoma; pulmonary embolism; filling defect

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Prone Positioning in Severe ARDS under Extracorporeal Membrane Oxygenation Support-A Case Report

Ta-Wei Chao[1], Ching-Han Lai[2], Wei-Chieh Lin[3]

Acute respiratory distress syndrome (ARDS) is a critical illness with high mortality, even if appropriate therapies, such as protective lung strategies, prone positioning (PP), and venovenous extracorporeal membrane oxygenation (VV-ECMO), are applied. PP, a natural lung recruitment maneuver, has fewer complications than other salvage therapies; however, the combination of PP and VV-ECMO support is uncommon, not only because of the risk of catheter dislodgement, but also because of the understaffing of healthcare facilities. Herein, we present the case of a patient with severe ARDS who had difficulty weaning from VV-ECMO, but was successfully treated with PP during VV-ECMO support. ***(Thorac Med 2023; 38: 69-76)***

Key words: acute respiratory distress syndrome (ARDS), prone positioning (PP), lung recruitment maneuver, extracorporeal membrane oxygenation support (ECMO).

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Prolonged Spontaneous Pneumothorax in Patients with Pleuroparenchymal Fibroelastosis – Report of 2 Cases

Hsin-Jung Hsieh[1], Ping-Hung Kuo[1]

Pleuroparenchymal fibroelastosis (PPFE) is a rare interstitial lung disease, characterized by pleural and subpleural parenchymal fibrosis, predominantly in the upper lobes. Around 60% of patients with PPFE develop spontaneous pneumothorax during the disease course. Previous studies, however, rarely addressed the natural course and duration of pneumothorax in these patients. Here, we reported 2 patients with PPFE who developed spontaneous pneumothorax lasting for more than 6 months. Serial chest images and pulmonary function tests were also provided. It was notable that both patients could still perform the forced expiratory maneuver during spirometry without further lung collapse, probably due to thickening and fibrosis of the visceral pleura and subpleural lung parenchyma. Our experience with these 2 cases suggests that prolonged pneumothorax can develop in patients with PPFE, due to its unique pathophysiology. ***(Thorac Med 2023; 38: 77-82)***

Key words: interstitial lung disease; pleuroparenchymal fibroelastosis; pneumothorax; respiratory function tests

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Crouzon Syndrome with Severe Obstructive Sleep Apnea and Restrictive Ventilatory Impairment -a Case Report and Literature Review

Lun-Yu Jao[1,2], Yao-Kuang Wu[1,2], Mei-Chen Yang[1,2], Chih-Wei Wu[1,2], Chung Lee[1,2], Li-Ping Tsai[2,3*], Chou-Chin Lan[1,2]

Crouzon syndrome is a rare autosomal-dominant genetic disorder characterized by premature fusion of the cranial sutures. Clinical features include midface hypoplasia, maxillary hypoplasia, and prognathism, which can lead to difficulty breathing. Patients with Crouzon syndrome are reported to have a high prevalence of obstructive sleep apnea syndrome (OSAS). Non-cranial orthopedic deformities such as kyphoscoliosis are also reported. We reported the case of a 41-year-old female with exophthalmos, midface hypoplasia, and mandibular prognathism. She was diagnosed with severe kyphoscoliosis with restrictive ventilatory impairment. Surgical treatment was not recommended due to her very poor lung function. However, she developed dyspnea and edema of the legs 5 years later. A cardiac echogram revealed cor pulmonale. Owing to pneumonia and respiratory failure, intubation with an invasive mechanical ventilator was initiated. She was successfully extubated after 1 month on mechanical ventilation and was maintained on noninvasive bilevel positive airway pressure (BiPAP). Due to the typical facial appearance, Crouzon syndrome was suspected and confirmed by genetic analysis. Polysomnography revealed severe OSAS with an apnea-hypopnea index score of 105.8/h with prominent desaturation. The apnea-hypopnea and desaturation were significantly improved after non-invasive positive pressure ventilation. Due to severe OSAS and the above problems, she was maintained on long-term BiPAP. Although subsequent polysomnography and pulmonary function testing revealed some decline in the apnea-hypopnea index and lung function, she continues to maintain a good quality of sleep and daily activities under BiPAP. ***(Thorac Med 2023; 38: 83-91)***

Key words: Crouzon syndrome; kyphoscoliosis; obstructive sleep apnea; restrictive ventilatory impairment

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Multimodality Treatment for a Huge Anterior Mediastinal Seminomas: A Case Report

Tzu-Lung Lai[1], En-Kuei Tang[1], Yen-Chiang Tseng[1]

Huge anterior mediastinal seminomas are rare mediastinal tumors. The diagnosis is usually delayed because there are only a few initial symptoms; most of the seminomas were large and bulky at the time of diagnosis with tumor compression of the lung, trachea, or heart. We present the case of a 29-year-old man who complained of progressive dyspnea and cough. Chest radiography revealed a huge mediastinal tumor, and mediastinal seminoma was diagnosed by computed tomography-guided biopsy. Induction chemotherapy with cisplatin, etoposide, and ifosfamide was administered for 4 courses, leading to remarkable tumor shrinkage. Surgical intervention was recommended by the multidisciplinary team, since a residual viable tumor was noted on the positron emission tomography/computed tomography scan. Complete R0 resection was achieved. As of this writing, the patient is alive with a good performance status. ***(Thorac Med 2023; 38: 92-95)***

Key words: mediastinal seminoma, anterior mediastinal tumor

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