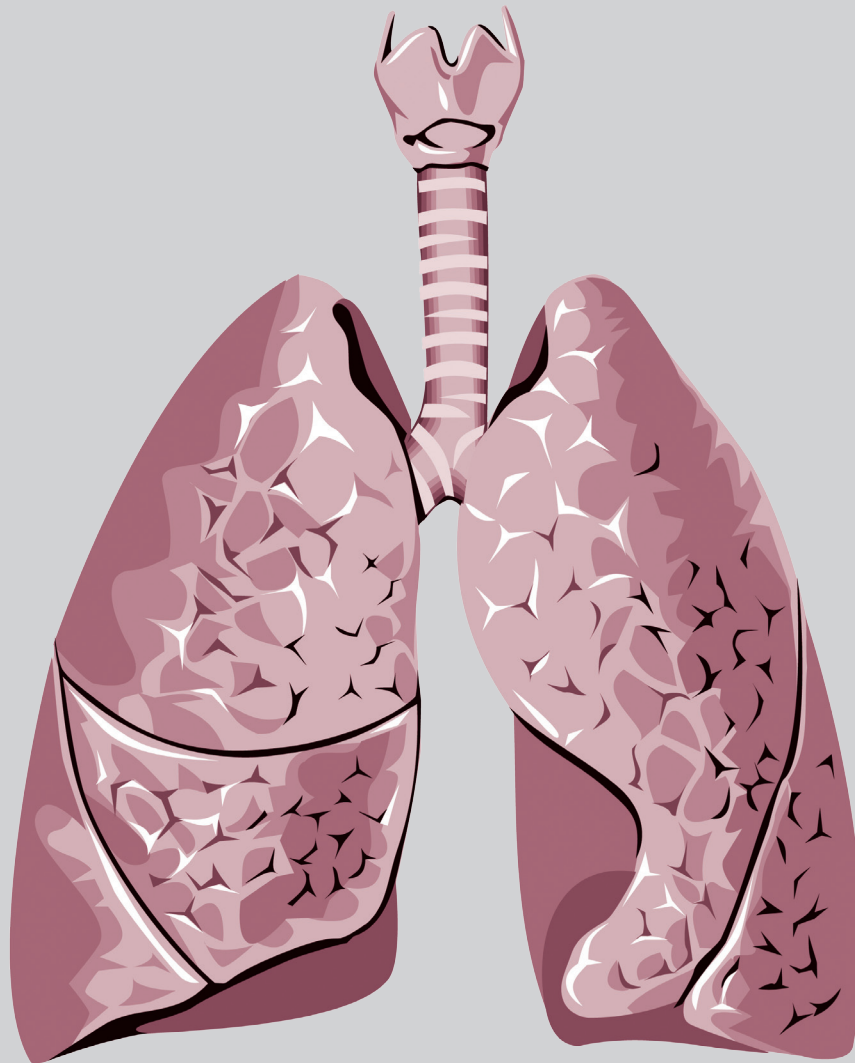


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Prevalence of Chronic Obstructive Pulmonary Disease in Cardiac Outpatient Clinics Using Questionnaire and Spirometry Screening

Ching-Yi Chen¹, Kun-Chou Hsieh², Shin-Yi Liang³, Yi-Ping Hsiang³, Yu-Feng Wei¹

Background: Patients who have COPD may visit cardiac outpatient clinics due to having similar symptoms. We aimed to investigate whether a COPD diagnostic questionnaire (CDQ) and spirometry can facilitate the early detection of undiagnosed COPD in individuals who visit cardiac clinics.

Methods: A voluntary screening for COPD was conducted for patients who visited the cardiac clinics of E-Da hospital. Subjects aged ≥ 35 years and who had at least 1 cardiovascular comorbidity were eligible for COPD screening with the CDQ and spirometry. COPD was defined as a ratio of forced expiratory volume in the first second/forced vital capacity less than 0.7 by spirometry. Clinical data, including the presence of COPD symptoms and questionnaire scores, were collected for analysis.

Results: A total of 808 patients were enrolled in this study. Of these patients, 21 had a confirmed diagnosis of COPD. The prevalence of COPD was only 2.6% in the subjects who visited our cardiac clinics. Compared to the non-COPD group, more of the COPD group were aged ≥ 70 years and were ex-smokers, and had ≥ 2 COPD symptoms, higher COPD Assessment Test and CDQ scores, and a smoking history of more than 20 pack/years. The prevalence, sensitivity, and specificity among patients with a CDQ score ≥ 21.5 were 6.6%, 62%, and 76%, with a low positive predictive value of 7% and a high negative predictive value of 99%.

Conclusion: The prevalence of COPD in patients visiting cardiac clinics was low in this study. A CDQ score ≥ 21.5 before spirometry screening was more effective for screening COPD in this population. (*Thorac Med* 2020; 35: 96-105)

Key words: chronic obstructive pulmonary disease, prevalence, questionnaire, screening, spirometry

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Use of Radial Probe Endobronchial Ultrasound (EBUS) in Diagnosing Atypical Pulmonary Infection

Biing-Ru Wu¹, Chia-Hung Chen^{1,2}, Wen-Chien Cheng^{1,3}, Wei-Chun Chen^{1,3}, Chih-Yu Chen¹, Wei-Chih Liao^{1,2,3}, Chih-Yen Tu^{1,2}, Wu-Huei Hsu^{1,2}

Background: Bronchoscopy with radial probe endobronchial ultrasonography (EBUS) has been utilized to assess peripheral pulmonary lesions and to identify parenchymal lung lesions for biopsy. However, there is no information on the use of bronchoscopy with EBUS in the diagnosis of atypical pulmonary infection. Identifying the unknown pathogens responsible for atypical pulmonary infections remain a diagnostic challenge. Therefore, we investigated the usefulness of bronchoscopy with EBUS in the diagnosis and management of patients with atypical pulmonary infection.

Methods: The diagnostic yields of EBUS from patients with atypical pulmonary infection treated in a tertiary university hospital between December 2007 and December 2010 were analyzed retrospectively.

Results: A total of 78 patients with atypical pulmonary infection were enrolled in the study. The majority of those patients (n=57, 73%) also had underlying disease, such as diabetes mellitus (n=26) or malignancy (n=12). A total of 78 microorganisms were isolated or identified by histopathology, including *Mycobacterium tuberculosis* (n=59), *Aspergillus* (n=8), *Cryptococcus* (n=6), *Pneumocystis jiroveci* (n=3), and mucormycosis (n=2). The definitive diagnosis rate using EBUS was 82.1% (n=64), including 86.4% for *Mycobacterium tuberculosis* (51/59), 87.5% for *Aspergillus* (7/8), 100% for *Pneumocystis jiroveci* (3/3) and mucormycosis (2/2), and 16.7% for *Cryptococcus* (1/6). EBUS examination assisted in both the diagnosis (82.0%) and management (78.2%) of patients. Pneumothorax, which occurred in 2 patients (3%), was the only complication.

Conclusion: Bronchoscopy with EBUS is a useful diagnostic tool for patients with atypical pneumonia. This technique can be particularly helpful in diagnosing patients without an identified pulmonary infection pathogen. (*Thorac Med* 2020; 35: 106-115)

Key words: endobronchial ultrasound, atypical pulmonary infection

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PD-1/PD-L1 Inhibitors in Stage IV Non-Small Cell Lung Cancer - A Single Medical Center Experience

Kuan-Chih Kuo, Wen-Jui Wu, Sheng-Hsiung Yang, Jian Su, Chia-Te Yen

Introduction: Information about the real-world efficacy of programmed cell death protein 1 (PD-1)/programmed death-ligand 1 (PD-L1) inhibitors in the treatment of stage IV lung cancer is limited in Taiwan. Here, we report the experience of a medical center in Taiwan.

Methods: Patients diagnosed with lung cancer and treated with PD-1/PD-L1 inhibitors were identified. We recorded the characteristics of the patients, treatment efficacy, and side effects, and analyzed variables related to treatment outcome.

Results: From September 2016 to October 2019, 52 lung cancer patients received PD-1/PD-L1 inhibitors. After exclusion, 38 patients were included for final analysis. Progression-free survival (PFS) was 6.2 months (95% CI, 5.3 to 7.1 months), and overall survival (OS) had not been reached at the time of analysis. Patients that had progressive disease at 2 months after their first PD-1/PD-L1 inhibitors treatment had significantly shorter PFS and OS than patients with stable disease or a partial response.

Conclusion: The efficacy of PD-1/PD-L1 inhibitors in this real-world analysis was comparable to that reported in previous clinical trials. Response at 2 months after initiation of immune checkpoint inhibitors is a good predictor for PFS and OS. (*Thorac Med* 2020; **35**: 116-121)

Key words: immunotherapy, PD-1/PD-L1 inhibitors, non-small cell lung cancer

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Gender Differences in Caregiver Burden with Ventilator-Dependent Patients

Jui-Fang Liu^{1,2,3,4}, Shu-Jane Wang⁵, Jui-O Chen^{3,6}, Tien-Pei Fang^{4,7}, Hui-Ling Lin^{4,7,8}

Introduction: Ventilator-dependent patients require skillful and extraneous care during daily tasks, and this can elevate the stress level and increase the burden of caregivers. This study examined the gender-related differences in caregivers' burden caused by caring for ventilator-dependent patients.

Methods: This retrospective cross-sectional study was conducted on caregivers of ventilator-dependent patients in southern Taiwan. A survey was conducted that included basic demographic information on the patients and caregivers, and used the Burden Assessment Scale (BAS) scores for 4 domains, comprising a total of 21 questions (physical burden, n=5; psychological burden, n=6; social burden, n=6; financial burden, n=4).

Results: A total of 128 caregivers of both genders, aged 50.8±12.8 years, were recruited (men: n=59; women: n=69). Most of these caregivers were children of the patient or the spouse of the patient (83.1% for men and 78.3% for women), and received no social welfare. Female caregivers exhibited significantly higher BAS scores than did male caregivers. The higher physiological burden ($P<.016$) for women was attributed to lack of sleep and torso pain, whereas the higher psychological burden ($P<.021$) was attributed to loss of appetite and fear of the patient's disease deteriorating. The higher social burden ($P<.041$) was due to their being unable to handle household chores and being forced to change personal plans.

Conclusion: The results revealed that female caregivers of ventilator-dependent patients encountered a greater burden than men, including physiological, psychological, and social burdens, yet the financial burden was similar. (*Thorac Med* 2020; 35: 122-131)

Key words: gender, caregiver burden, ventilator-dependent patient

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Spontaneous Posterolateral Lung Hernia

Yi-Han Lin^{1,2}, Han-Shui Hsu¹

Lung herniation is defined as the protruding of the lung parenchyma outside the thoracic cage through a defect in the chest wall or diaphragm. A spontaneous posterolateral chest wall hernia is extremely rare. This report presents the case of a patient with chronic obstructive pulmonary disease who suffered from persistent cough and right back ecchymosis. The ecchymosis progressed and a protruding mass was noted the next day. Chest plain film and chest computed tomography revealed that the right lower lobe parenchyma had protruded from the thoracic wall. Conservative treatment was given and the lung hernia gradually regressed. (*Thorac Med* 2020; 35: 132-135)

Key words: lung hernia, chronic obstructive pulmonary disease, chest wall defect

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Pulmonary Mucormycosis Diagnosed by Ultrasound-Guided Transthoracic Biopsy in a Mechanically Ventilated Patient in the Intensive Care Unit – A Case Report

Han-Ching Yang, Chun-Kai Huang

Pulmonary mucormycosis, a fatal fungal infection characterized by a rapid progressive clinical course, often occurs in immunocompromised patients. Due to its varied presentations, early diagnosis is very difficult, and histopathological examination is necessary to reach a diagnosis. Here, we report the case of a 68-year-old man with newly diagnosed acute myeloid leukemia and pneumonia with acute respiratory failure. Computed tomography of the chest showed a mass-like lesion with internal low attenuating necrosis at the left upper lung field. A bedside ultrasound-guided transthoracic biopsy was performed and revealed an active mucormycosis infection. With this case, we would like to emphasize the concept that diagnosis of pulmonary mucormycosis usually requires a biopsy of the affected site. Furthermore, for mechanically ventilated patients in the intensive care unit with peripheral subpleural lung lesions, ultrasound-guided transthoracic biopsy is a suitable diagnostic tool that is effective and safe if performed cautiously. (*Thorac Med* 2020; 35: 136-142)

Key words: pulmonary mucormycosis, ultrasound-guided transthoracic biopsy

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Where is the Subcarinal Lymph Node? Case Report of Bronchial Obstruction Due to Broncholithiasis

Lu-Chia Lee¹, Jen-Jyh Lee^{1,2}, Po-Pin Cheng¹, Chih-Bin Lin^{1,2}

Broncholithiasis is an uncommon airway disease. It presents as calcified material in or adjacent to the tracheobronchial trees due to extrusion and erosion of the calcified lymph nodes into the airway. Calcified lymphadenitis due to mycobacterial infections is the most important cause of broncholithiasis, and may lead to airway obstruction. Here, we reported a patient who had calcified subcarinal lymph nodes 3 years ago on chest computed tomography. She was admitted to our hospital this time with the finding of calcified lymphadenitis in the left main bronchus, causing obstruction. The calcified lymphadenitis was successfully removed by flexible bronchoscopy, with basket. (*Thorac Med* 2020; 35: 143-146)

Key words: bronchial obstruction, broncholithiasis, calcified lymph node, bronchoscopic extraction

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A Case of Granulomatosis with Polyangiitis Presenting with Bronchus Ulceration

Cheng-Te Wang, Ching-Yao Yang

Granulomatosis with polyangiitis (GPA), formerly known as Wegner's granulomatosis, is a form of systemic vasculitis that involves primarily the upper and lower airways and the kidneys. The most frequent airway manifestations include subglottic stenosis and inflammation, and tracheal and bronchial stenosis, while ulcerations in tracheobronchial mucosa are uncommon findings. Here, we reported the case of a 77-year-old man who presented with cough, hemoptysis, and progressive joint pain in all 4 limbs for about 2 months, accompanied with intermittent low-grade fever in the evening for 2 weeks. Bronchial ulcerations were found by bronchoscopy, and biopsy yielded a non-specific granulomatous inflammation without positive staining for relevant pathogens. Due to a contact history with tuberculosis patients and unresolved fever despite antibiotics treatment, the tracheobronchial granulomatous inflammation was diagnosed as tuberculosis at first. However, his symptoms did not improve in spite of empirical anti-tuberculosis antibiotics treatment. Later, other symptoms developed, including otitis media and acute glomerulonephritis, which manifested with hematuria and acute kidney injury. The serological test revealed elevation of cytoplasmic antineutrophil cytoplasmic antibodies. Thus, the patient was diagnosed with GPA with airway, ear, and kidney involvement. After immunosuppressive therapies with cyclophosphamide and glucocorticoid for GPA, his symptoms improved, and the follow-up bronchoscopy showed resolution of the bronchial ulcerations. (*Thorac Med* 2020; 35: 147-151)

Key words: granulomatosis with polyangiitis, bronchus ulceration, endobronchial tuberculosis

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