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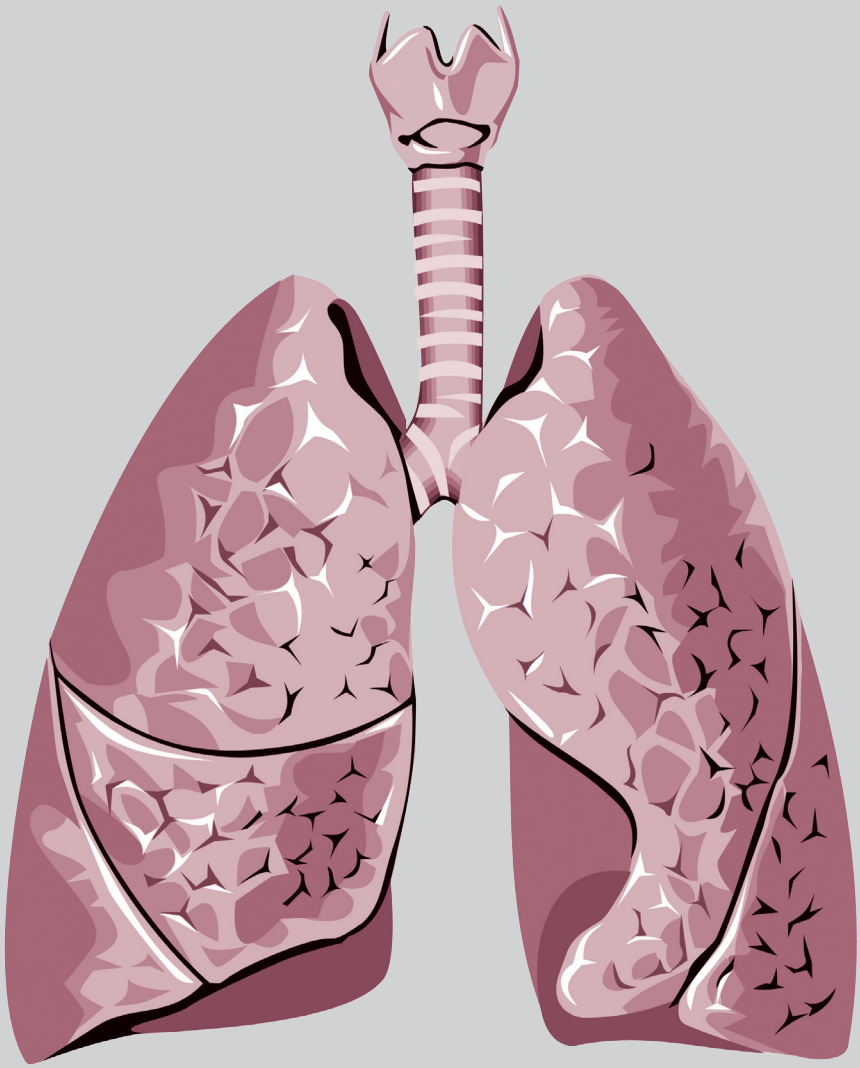

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CONTENTS

Clinical Features and Outcomes of Patients with Interstitial Pneumonia with Autoimmune Features and Acute Respiratory Failure

Shan-Yao Yang[1], Wei-Ling Lain[1], Kuang-Yao Yang[1,2,3,4], Wei-Chih Chen[1,2,3]

Introduction: The clinical features and outcomes of patients with interstitial pneumonia with autoimmune features (IPAF) who developed acute respiratory failure (ARF) are not well understood. We aimed to analyze IPAF patients who developed ARF and compare them with patients with connective tissue disease-related interstitial lung disease (CTD-ILD).

Methods: This was a retrospective, observational study conducted in a 24-bed intensive care unit (ICU) of a tertiary medical center in Taiwan during a 3-year period. Patients admitted to the ICU with ARF requiring MV and who had a diagnosis of IPAF or CTD-ILD were included for analysis. Patient characteristics, including demographics, critical illness factors, management and outcome data, were recorded and analyzed.

Results: During the study period, a total of 13 patients with IPAF and 13 patients with CTD-ILD who developed ARF were admitted to the ICU. Overall, 28-day mortality was 50% for the enrolled subjects. Patients with IPAF had significantly lower 28-day mortality than those with CTD-ILD (23.1% vs 76.9%, p=0.006). The independent risk factor for 28-day mortality was a diagnosis of CTD-ILD.

Conclusion: High mortality rates were observed among both IPAF and CTD-ILD patients with ARF requiring MV. A diagnosis of IPAF seemed to have a better outcome than that of CTD-ILD. ***(Thorac Med 2022; 37: 58-67)***

Key words: acute respiratory failure, intensive care unit, interstitial lung disease, interstitial pneumonia with autoimmune features, connective tissue disease, mechanical ventilation, mortality

Effect of Using a Recruitment Maneuver in Morbidly Obese Patients during Weight Reduction Surgery: A Systematic Review and Meta-analysis

Yu-Ching Lu[1*], Ching-Yi Chen[1,2], Ho-Sheng Lee[1,5*], Mei-Hua Ceng[1], Yu-Feng Wei[3,4,5]

Introduction: Obese people are prone to develop atelectasis during general anesthesia. Whether the use of an intraoperative recruitment maneuver (RM) during weight reduction surgery is associated with improved intraoperative and postoperative outcomes is unknown.

Methods: We performed comprehensive searches of randomized-controlled trials that investigated the use of RM during weight reduction surgery. The research subjects were morbidly obese patients (BMI >40 kg/m^2), and the intervention measures were positive end expiratory pressure (PEEP) combined with RM. The primary outcome was oxygenation capacity during operation.

Results: Eight articles with a total of 359 morbidly obese patients were included. These articles were published between 2006 and 2020, and the average body mass index (BMI) of these patients was 46.6 kg/m^2. Six studies of them were included for the analysis of oxygenation capacity. We found that the group treated by PEEP combined with RM had higher oxygenation capacity (measured by the ratio of arterial oxygen partial pressure to inspiratory oxygen concentration [PaO_2/FiO_2], P/F ratio) (standard mean difference [SMD] 0.956, 95% confidence interval [CI] 0.680-1.232; p<0.001) and better pulmonary compliance (SMD 0.745, 95%CI 0.380-1.110; p<0.001) than the control group. The P/F ratio after extubation was similar in both groups (SMD 0.219, 95%CI-0.627-1.065; p=0.611).

Conclusion: Intraoperative RM improved gas exchange and pulmonary compliance in morbidly obese patients undergoing weight reduction surgery. There was no difference in oxygenation status after extubation. ***(Thorac Med 2022; 37: 68-79)***

Key words: morbid obesity, recruitment maneuver, positive end expiratory pressure, pulmonary mechanics, gas exchange

Tracheobronchopathia Osteochondroplastica: A Rare Incidental Diagnosis

Chun Lin[1], Kuo-Hsuan Hsu[1,2]

Tracheobronchopathia osteochondroplastica (TO) is a rare disease with a benign nature. The etiology and incidence remain unclear. We present the case of a 67-year-old male with a history of completely treated pulmonary tuberculosis and chronic obstructive pulmonary disease who was admitted due to productive cough. Imaging studies of the thorax, including chest radiography and chest computed tomography, showed partial collapse of the right upper lobe of the lung. Bronchoscopy revealed multiple hard nodular lesions at the anterior tracheal wall, and biopsy was performed. Pathological evaluation of the lesions revealed results compatible with TO. The patient is currently being followed up regularly at our outpatient department. ***(Thorac Med 2022; 37: 80-84)***

Key words: tracheobronchopathia osteochondroplastica; bronchoscopic biopsy

Systemic Air Embolism Occurring after Transthoracic Needle Biopsy -- a Rare but Lethal Post-Procedural Complication

Yi-Jhih Huang[1,2], Chung-Kan Peng[3], Shih-Chun Lee[1], Cheng-Kuang Chang[4], and Kun-Lun Huang[3]

Chest computed tomography (CT)-guided percutaneous core needle biopsy (PCNB) is a well-established, but relatively less invasive procedure than surgical open lung biopsy for the diagnosis of pulmonary lesions. The physician should be aware of possible fatal complications during this procedure, such as massive bleeding, tension pneumothorax, or systemic air embolism (AE). Systemic AE is a rare but critical complication that occurs following CT-guided PCNB. Although the occurrence of systemic AE might be underestimated, the overall incidence rate after performing a CT-guided PCNB is less than 1%. Documented risk factors for AE were positive pressure ventilation, targeting a cavitary lesion, location of the tumor, depth of the targeting lesion, or special position of the patient during the biopsy. The possible mechanisms might be related to the direct puncture of a pulmonary vein, or transient fistula between the airway and a pulmonary vein. Physicians should always keep this complication in mind. The immediate management includes 100% oxygen supplementation, a left lateral decubitus position, and hyperbaric oxygen therapy. ***(Thorac Med 2022; 37: 85-89)***

Key words: hyperbaric oxygen therapy, percutaneous core needle biopsy of the chest, systemic air embolism

Diffuse Alveolar Hemorrhage Shortly After Breast Augmentation Surgery: A Case Report

Ting-Chia Chang[1], Hsiu-Nien Shen[2]

Diffuse alveolar hemorrhage (DAH) associated with negative-pressure pulmonary edema (NPPE) is a rare cause of acute respiratory failure that occurs after an extreme inspiratory effort against an obstructed airway, such as post-extubation laryngospasm after surgery. Herein, we report a 27-year-old previously healthy woman who underwent breast augmentation surgery in a cosmetic surgery clinic and presented with dyspnea and acute hypoxemic respiratory failure associated with the classic triad of DAH (i.e., hemoptysis, anemia and pulmonary infiltrates) shortly after extubation. A diagnosis of NPPE-related DAH was made based on clinical conditions and the exclusion of other potential causes. After supportive treatment, the patient recovered and was weaned from the ventilator within a few days. ***(Thorac Med 2022; 37: 90-95)***

Key words: diffuse alveolar hemorrhage; negative-pressure pulmonary edema; breast augmentation surgery

Pulmonary Alveolar Proteinosis with a Rare Presentation: A Case Report

Chang-Wei Wu[1], Yen-Lin, Huang[2], Ching-Yao Yang[1]

Pulmonary alveolar proteinosis (PAP) is a rare disease characterized by a diffuse accumulation of lipoproteinaceous material in the distal airway and alveolar space that causes shortness of breath, hypoxia, respiratory failure and even death in severe cases. PAP could be a primary or secondary disease, and most PAP patients experienced progressive disease requiring treatment of the underlying disease with whole lung lavage or lung transplant. However, self-resolving PAP has also been described in a few case reports. Here, we reported the case of a 46-year-old man without known systemic disease or symptoms. Abnormal computed tomography imaging studies revealed a bilateral subpleural peri-bronchial crazy-paving pattern. Organized pneumonia was first suspected, but later, surgical resection confirmed a histological diagnosis of PAP. Partial regression of PAP was noted during the 7-month follow-up. ***(Thorac Med 2022; 37: 96-102)***

Key words: pulmonary alveolar proteinosis, crazy-paving pattern, ground glass opacity

Fulminant and Fatal Community-Acquired Pneumonia Caused by *Sphingomonas Paucimobilis*

Chang-Hung Chen[1], Chao-Tai Lee[2]

Sphingomonas paucimobilis is a gram-negative bacillus that is omnipresent in both environmental and hospital settings. *S. paucimobilis* is considered to have limited virulence, probably due to the lack of lipopolysaccharide in its cell wall. We described an immunocompromised patient with community-acquired pneumonia caused by *S. paucimobilis* that was both fulminant and fatal, even though the initial antibiotic treatment was appropriate. Chest X-ray examination revealed rapidly progressive bilateral diffuse alveolar consolidation. ***(Thorac Med 2022; 37: 103-107)***

Key words: *Sphingomonas paucimobilis*, community-acquired pneumonia, fatal

The First Reported Computed Tomography Scan Images of Remitting-Relapsing Pleural Effusions of Malignant Pleural Mesothelioma

Wen-Chi Hsiao[1], Jen-Wen Hsu[2], Ming-Hung Chen[1], Pei-Ru Wu[3], Tai-Yu Chang[4]

Malignant pleural effusions usually accumulate progressively unless they have been treated. Spontaneous remitting of malignant pleural effusions without therapy and remitting-relapsing malignant pleural effusions are rare. Until now, there have been no computed tomography (CT) scan images that reveal these specific conditions and only 2 chest X-rays have been reported. We report a 59-year-old man who was a boiler worker with asbestos exposure for 20 years. He suffered persistent right chest pain for 18 months, and his pleural effusions remitted and relapsed during this period. Video-assisted thoracoscopic surgery was arranged and the pathological reports showed malignant mesothelioma. The serial changes of the pleural effusions were clearly shown first by the CT scan. When treating these patients, clinicians should maintain follow-up even if the pleural effusions remit spontaneously. These are the first CT scan images of remitting-relapsing malignant pleural effusions caused by malignant pleural mesothelioma in the literature. ***(Thorac Med 2022; 37: 108-113)***

Key words: asbestos; mesothelioma; pleural effusion

Hard Metal Lung Disease: A Case Report Using Transbronchial Cryobiopsy in the Diagnosis

Chiung-Hung Lin[1], Chih-Hao Chang[1], Jia-Shiuan Ju[1], Tzu-Hsuan Chiu[1], Pi-Hung Tung[1], Shu-Min Lin[4]

Hard metal lung disease (HMLD) is a rare disease diagnosed pathologically by the presence of multinucleated giant cells in the alveoli with interstitial pneumonitis and centrilobular fibrosis. In the past, surgical lung biopsy and transbronchial lung biopsy (TBLB) were the only means of obtaining a tissue specimen. Transbronchial cryobiopsy (TBC) is an emerging and excellent technique in the diagnosis of diffuse parenchymal lung disease, but it has never been used in the diagnosis of HMLD. We reported the case of a 41-year-old female turner who presented with progressive dyspnea on exertion for 3 years. Tissues from TBLB failed to yield a specific diagnosis, while those from TBC confirmed the diagnosis of HMLD. Cryobiopsy offers diagnostic advantages compared with conventional techniques and appears to be a useful diagnostic tool for diagnosing HMLD. ***(Thorac Med 2022; 37: 114-119)***

Key words: cryobiopsy, hard metal lung disease, bronchoscopy

Multiple Nodular Pulmonary Amyloidosis Mimicking Metastatic Lesions: A Case Report

Po-Chun Lo[1], Chi-Lu Chiang[1]

Amyloidosis is a group of diseases caused by extracellular tissue deposition of insoluble fibrils. Pulmonary amyloidosis may present as a nodular form, a diffuse interstitial disease or as localized to the transbronchial tree. Nodular pulmonary amyloidosis that is not associated with primary systemic amyloidosis is rare. We reported a 48-year-old female who was initially suspected of having metastatic lung cancer with bilateral multiple pulmonary nodules on chest computed tomography (CT). CT-guided needle biopsy of the pulmonary nodules revealed nodular pulmonary amyloidosis. ***(Thorac Med 2022; 37: 120-125)***

Key words: pulmonary amyloidosis, lung nodule, CT-guided needle biopsy

Chronic Eosinophilic Pneumonia Associated with Heat-Not-Burn Tobacco Cigarette Use

Tung-Chi Yeh[1], Chun-Chieh Wu[2,3], Chia-Min Chen[1], Ming-Ju Tsai[1,4], Jen-Yu Hung[1,4]

Heat-not-burn (HNB) tobacco cigarettes are devices that heat tobacco below the temperature at which traditional tobacco burns, producing fewer toxic chemical compounds. However, the potential health risk of HNB tobacco cigarette use remains unclear. We reported the case of a 25-year-old healthy male who suffered from afebrile cough with whitish sputum for 4 months after switching from conventional cigarettes to smuggled HNB tobacco cigarettes for 1 year. Chest computed tomography showed bilateral consolidation patches and ground-glass patches. Peripheral and bronchoalveolar lavage fluid eosinophilia were noted. After steroid treatment for chronic eosinophilic pneumonia (CEP), his symptoms improved rapidly. CEP is a rare disease. Diagnosis of CEP is made by exclusion of other possible causes of eosinophilic pneumonia. E-cigarettes, or vaping product use-associated lung injury has been widely reported recently, so smokers may choose HNB instead. Thus, we elucidate the risk to health of HNB cigarette use. ***(Thorac Med 2022; 37: 126-131)***

Key words: heat-not-burn tobacco, chronic eosinophilic pneumonia

Influenza Pneumonia Associated with Invasive Pulmonary Aspergillosis Requiring Venovenous Extracorporeal Membrane Oxygenation Support: A Case Report and Literature Review

Tzu-Hsuan Chiu[1], Chiung-Hung Lin[1], Jia-Shiuan Ju[1], Han-Chung Hu[1]

Invasive pulmonary aspergillosis (IPA) is an often underdiagnosed, lethal coinfection in critically ill patients who have influenza pneumonia. Here, we reported the case of a 49-year-old man without classic immunocompromised host factors for IPA. The patient was diagnosed with influenza and IPA coinfection complicated by acute respiratory distress syndrome. He recovered successfully after antifungal agent treatment and venovenous extracorporeal membrane oxygenation (ECMO) support. With regard to the effect of ECMO on the pharmacokinetics of voriconazole, therapeutic drug monitoring was performed to ensure an optimal antifungal agent dose. This case report highlights the importance of early diagnosis and treatment of IPA, and the role of therapeutic drug monitoring in patients receiving ECMO. ***(Thorac Med 2022; 37: 132-139)***

Key words: invasive pulmonary aspergillosis, acute respiratory distress syndrome, extracorporeal membrane oxygenation, therapeutic drug monitoring

Pulmonary Arteriovenous Malformation in a Woman with Chronic Obstructive Pulmonary Disease and Recurrent Stroke: A Case Report

Ting-Chia Chang[1], Shian-Chin Ko[2]

Pulmonary arteriovenous malformation (PAVM) is a rare cardiovascular anomaly that can cause serious complications, such as stroke and cerebral abscess. We present the case of a 55-year-old woman with old stroke, who presented with dyspnea and severe hypoxia refractory to high-concentration oxygen therapy. A large mass-like opacity in the right lower lung field was noted on the chest radiograph. Diagnosis of PAVM was considered based on the clinical and radiological findings. Spiral computed tomography pulmonary angiogram showed 2 arteriovenous malformations with right-to-left shunts, a large one in the right lower lobe and a smaller one in the left lingula. After successful embolization, her hypoxemia was corrected and there were no embolic stroke episodes thereafter. ***(Thorac Med 2022; 37: 140-146)***

Key words: pulmonary arteriovenous malformation, refractory hypoxemia, paradoxical embolism

Bilateral *Cunninghamella Bertholletiae* Empyema and Pneumothorax: A Case Report and Literature Review

Wei-Cheng Hong[1], Chien-Wei Hsu[1,2], David-Lin Lee[1,2]

Pulmonary mucormycosis is a rare fungal infection that is difficult to diagnose and causes high mortality in immunocompromised patients. *Cunninghamella bertholletiae* accounts for only 7% of mucormycosis infections. Due to its angioinvasive characteristic and the narrow spectrum of antifungal therapy, *Cunninghamella* species infection has a poor prognosis and a high mortality rate. Pulmonary infection is a common outcome of *C. bertholletiae. C. bertholletiae* results in high mortality, and most surviving patients undergo early anti-fungal therapy with amphotericin B or liposomal amphotericin B along with aggressive surgical intervention. Thus, early recognition is essential and aggressive surgery should be considered for these patients. ***(Thorac Med 2022; 37: 147-153)***

Key words: *Cunninghamella bertholletiae*, empyema, pulmonary mucormycosis