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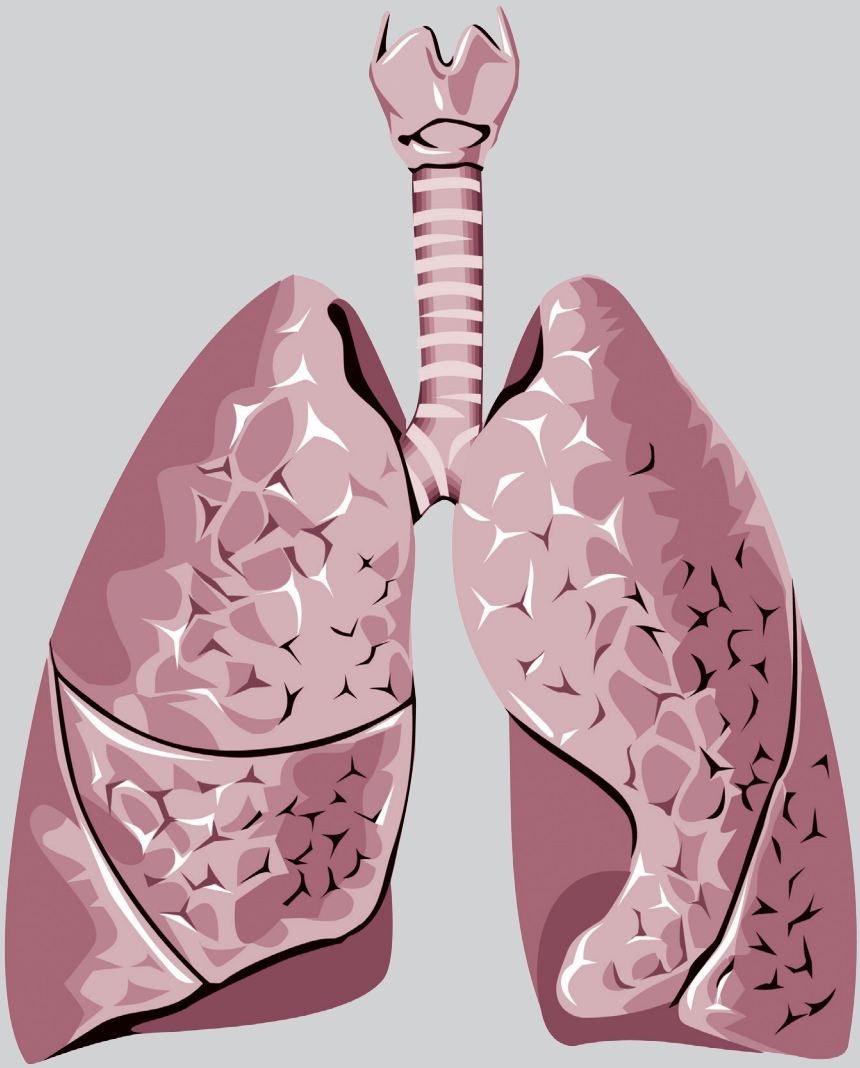

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Clinical Weaning Factors for Prolonged Mechanical Ventilation Patients: A Retrospective Study in Central Taiwan

Tao-An Chen[1], Chang-Sheng Lin[2,3], Chung-Yu Huang[4], Szu-Chi Pai[1], Ya-Ting Chuang[5], Chieh-Hui Lin[2]

Introduction: Mechanical ventilation is the most commonly used short-term life support technique in the world. But, about 5-10% of mechanical ventilation patients will progress from acute to chronic critical illness and require prolonged mechanical ventilation (PMV). Only 50% of these PMV patients are successfully liberated from mechanical ventilation. Therefore, improving the successful weaning rate and determining the influencing factors are important issues. This study aimed to analyze the factors for successful weaning of respiratory care center (RCC) patients and to determine the important weaning factors in PMV patients.

Methods: This was a single-center, retrospective study with 65 patients. This study collected and analyzed patients over the age of 20 in the RCC from October 2019 to August 2020.

Results: We found that patients who were successfully weaned from the ventilator had higher Glasgow Coma Scale (GCS) scores, and higher free thyroid (free T4), albumin and calcium levels on admission. In addition, they had lower APACHE II scores, C-reactive protein (CRP), and aspartate aminotransferase on admission. The patients also had higher systolic blood pressure before extubation, higher arterial carbon dioxide partial pressure ($PaCO_2$) after extubation, and high average albumin and average prealbumin values at the RCC.

Conclusion: We found that APACHE II scores, GCS scores, albumin, calcium, CRP, free T4, GOT are important weaning factors for patients admitted to the RCC. Systolic blood pressure and $PaCO_2$ are important influencing factors before and after the patient is released from the ventilator. In addition to this, average albumin and prealbumin are important weaning maintenance factors when PMV patients are in the RCC. ***(Thorac Med 2022; 37: 256-265)***

Key words: Prolonged mechanical ventilation, weaning, respiratory care center

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Bradycardia in Patients with COVID-19

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Introduction: Previous studies have reported that COVID-19 infection-related bradycardia is a predictor of a poor prognosis. Remdesivir and tocilizumab were also reported as risk factors for bradycardia. In this study, we aimed to investigate the occurrence of bradycardia among COVID-19 patients and its potential relationship with mortality.

Methods: Adult patients admitted to MacKay Memorial Hospital with COVID-19 infection from May to June 2021 were enrolled for analysis. Patients using medication for rate control, or who developed end-of-life bradycardia, were excluded. Bradycardia was defined as a persistent heart rate of fewer than 60 bpm on 2 separate occasions with a minimum 4-hour gap during hospitalization.

Results: A total of 259 patients were included, and 75 (29%) experienced bradycardia during their hospitalization. Patients in the bradycardia group had a lower lymphocyte count, higher neutrophil/lymphocyte ratio, and increased GOT, GPT, LDH, ferritin, and CRP. Bradycardia was also related to more frequent use of systemic corticosteroids, remdesivir, tocilizumab, and enoxaparin. But after multiple logistic regression, only tocilizumab was recognized as a risk factor for bradycardia (odds ratio [OR]: 2.6512, 95% confidence interval [CI]: 1.3307-5.2823, p=0.0056). There was no significant difference in in-hospital mortality among patients with bradycardia using multivariate logistic regression analysis (OR: 1.0476, 95% CI: 0.3340-3.2857, p=0.9365).

Conclusion: Bradycardia is a frequent phenomenon among hospitalized COVID-19 patients. Patients who had bradycardia events were more likely to receive tocilizumab, but not remdesivir treatment. Bradycardia events were not correlated with mortality in our patient group. Determining the mechanisms of bradycardia among COVID-19 patients requires further study. ***(Thorac Med 2022; 37: 266-276)***

Key words: Bradycardia, COVID-19, mortality, remdesivir, tocilizumab

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Congenital Bronchial Atresia – A Case Report

Guo-Zhi Wang[1], Frank Cheau-Feng Lin[1,2]

Congenital bronchial atresia is a rare airway malformation in which a segmental or lobar bronchus is isolated from the main airway, and corresponding lung tissue is hyperinflated via collateral pathways and becomes emphysematous. We reported a young man with congenital bronchial atresia who presented with chronic cough with a borderline restriction of pulmonary function, and was treated successfully with thoracoscopic tri-segmentectomy. Possible differential diagnoses were also discussed. ***(Thorac Med 2022; 37: 277-281)***

Key words: congenital bronchial atresia, pulmonary emphysema, airway malformation, adult

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Intralobar Pulmonary Sequestration with a Significantly Elevated CA 19-9 Level: A Case Report

Kuan-Ming Su[1], Hsao-Hsun Hsu[2], Hao-Chien Wang[1]

Pulmonary sequestration is a rare congenital malformation of non-functioning lung tissue that does not communicate with the airway system and that receives its blood supply from anomalous systemic arteries. An intralobar pulmonary sequestration often presents as an incidental finding on chest computed tomography or is diagnosed via histopathological review of a resected lung tumor. Some cases may have cough, hemoptysis, dyspnea or recurrent pulmonary infections at a certain segment. Over the past 3 decades, there have been several case reports that describe the association between pulmonary sequestration and elevated CA 19-9, which is a widely used tumor marker for gastrointestinal and pancreatobiliary cancers. The underlying mechanism of the elevated CA 19-9 in pulmonary sequestration was thought to be a chronic inflammatory process of the epithelial cells, or an infection, such as Aspergillus or Mycobacterium. In this case report, we present a 50-year-old woman who had a cough with persistent right lower lung opacity for 3 years. An elevated serum CA 19-9 level, up to 3670 U/ml, which was the highest among reported cases, was found in the patient's health exam 1 year prior to her initial presentation. The patient had no evident malignancies. Intralobar pulmonary sequestration was diagnosed by contrast-enhanced computed tomography, and the patient received a right lower lobectomy. Her CA 19-9 level returned to a normal range 4 months after the operation. ***(Thorac Med 2022; 37: 282-287)***

Key words: Pulmonary sequestration, carbohydrate antigen 19-9 (CA 19-9)

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ROS1-mutated NSCLC with an Uncommon Fusion Partner Treated with Crizotinib – From an Initial Good Response to Acquired Resistance and Rapid Progression

Chien-Yu Lin[1,2], Chia-Hao Hu[1], Che-Wei Hsu[3], Chien-Chung Lin[1,2]

ROS1+ non-small cell lung cancer (NSCLC) is a heterogeneous disease with at least 24 distinct fusion partners and five fusion partners (CD74, SLC34A2, SDC4, ERZ, and TPM3) primarily made up of the ROS1+ patients with NSCLC. A recent study proposed that ROS1 fusion partners may be classified as CD74-ROS1 and non–CD74-ROS1, since these 2 groups have different responses to crizotinib, and a predilection for central nervous system metastasis. Intergenic-breakpoint fusions are defined as 1 or both genomic breakpoints localizing to the intergenic regions; however, whether these intergenic-breakpoint fusions can be activated or not remains unresolved. Here, we reported a case of advanced ROS1 fusion gene rearrangement lung adenocarcinoma, which initially responded to crizotinib, but then recurred within 3 months. The DNA next-generation sequencing for liquid biopsy showed G2032R and L2026M mutations, and an uncommon ROS1 fusion with an intron (ROS1-LOC100505984 rearrangement); however, the patient did not respond to cabozantinib, and instead experienced disease progression. ***(Thorac Med 2022; 37: 288-294)***

Key words: Crizotinib, Cabozantinib, uncommon fusion partner, intergenic-breakpoint fusion, intron

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Drainless Uniportal Thoracoscopic Pneumonectomy for Carcinoid Tumors — A Case Report

Tzu-Ning Kao[1], Mong-Wei Lin[1], Jin-Shing Chen[1]

Drainless uniportal thoracoscopic pneumonectomy for lung cancer has not been reported. Here, we reported 2 patients with centrally located carcinoid tumors who underwent drainless uniportal thoracoscopic pneumonectomy. A 49-year-old woman and a 38-year-old woman were diagnosed with carcinoid tumor and were treated using minimally invasive uniportal thoracoscopic surgery. The surgery resulted in small wounds, less pain, and fewer infection sites, leading to better postoperative recovery. Without the drainage tube, complications related to tube placement and imbalanced thoracic cavity pressure could be avoided. The successful outcomes of our 2 patients suggest that drainless uniportal thoracoscopic pneumonectomy is safe, technically feasible, and can be used in selected patients. ***(Thorac Med 2022; 37: 295-300)***

Key words: carcinoid tumor, minimally invasive surgery, uniportal thoracoscopic pneumonectomy

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Mediastinal Schwannoma Diagnosed by Endobronchial Ultrasound Transbronchial Needle Aspiration (EBUS-TBNA) – A Case Report

Yueh-Lin Lee[1], Chieh-Mo Lin[1], Chun-Hsien Lin[1], Jing-Lan Liu[1], Yu-Ching Lin[1], Meng-Jer Hsieh[2,3]

Schwannoma is a peripheral nerve sheath tumor. Schwannomas arising from mediastinal lymph nodes are extremely rare. We reported a 62-year-old male patient who was referred to our chest department due to a 2.7-cm mediastinal nodule that was incidentally found using low-dose computed tomography. Bronchoscopic endobronchial ultrasound (EBUS) revealed a hypoechoic and well-defined tumor surrounded by a hyperechoic capsule. A definite diagnosis of schwannoma was made later based on a specimen obtained by EBUS-guided transbronchial needle aspiration. ***(Thorac Med 2022; 37: 301-305)***

Key words: mediastinal schwannoma, endobronchial ultrasound-guided transbronchial needle aspiration (EBUS-TBNA), elastography

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Stridor in a 24-year-old Male Treated with Bronchoscopic Electrocautery: A Case Report

Hsuan Feng Wu[1], Yi-Hsi Wang[1], Wen-Feng Fang[1]

Stridor is an important sign suggestive of central airway stenosis warranting emergency treatment. We present the case of a 24-year-old male with acute stridor, who was diagnosed with severe upper airway obstruction based on his past acute respiratory failure history, physical examination, spirometry, radiographic imaging, and bronchoscopy. A critical subglottic upper airway obstruction was identified via bronchoscopy. Bronchoscopic electrocautery was performed in the intensive care unit. The patient tolerated this alternative treatment method, rather than undergoing surgical treatment, and had a good outcome. ***(Thorac Med 2022; 37: 306-312)***

Key words: stridor, post-intubation tracheal stenosis, bronchoscopy, electrocautery

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Endometrial Metastasis of Lung Adenocarcinoma Mimicking Uterine Leiomyoma: A Case Report and Literature Review

Chieh-Yung Wang[1], Nien-Tzu Liu[2], Li-Fan Lin[3], Chen-Liang Tsai[1], Chung-Kan Peng[1], Chi-Hao Shen[1]

The female genitourinary tract is a rare site of distant metastasis from the lung-- most cases of distant metastases have originated from breast cancer. Here, we report an extremely rare case of metastatic endometrial cancer of lung origin, and present an extensive literature review. A 67-year-old woman with a history of uterine leiomyoma was diagnosed with adenocarcinoma of the right upper lung with left adrenal gland and visceral pleura metastases (stage T2aN0M1c). The positron emission tomography/computed tomography image during staging disclosed an abnormal uptake in the uterine region that was initially considered to be a leiomyoma. Intermittent vaginal bleeding occurred during systemic chemotherapy. Curettage of the uterus was performed, with samples demonstrating adenocarcinoma with metastasis from her known primary lung adenocarcinoma. Local radiation therapy to the endometrial metastasis was arranged; however, the disease progressed, and she died from aspiration pneumonia 11 months after the initial diagnosis of lung cancer. In conclusion, despite its rarity, the occurrence of endometrial metastasis is still possible for patients with lung cancer. The incidental accumulation of fluorodeoxyglucose in the uterus or the presence of postmenopausal vaginal bleeding must be considered malignancy until proven otherwise. ***(Thorac Med 2022; 37: 313-320)***

Key words: endometrial metastasis, lung adenocarcinoma, vaginal bleeding

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Pulmonary Cavitation Lesions from Metastasized Urothelial Carcinoma Mimicking Primary Lung Cancer: A Case Report

Kai-Chao Chang[1,3], Chun-Chieh Wu[2], Mei-Hsuan Lee[1,3], Jen-Ye Hung[1,3]

The differential diagnosis of pulmonary cavitary lesions is important for clinicians because various critical diseases can present this radiological finding, including cancer, autoimmune diseases, vascular diseases, infections/inflammation, trauma, and congenital diseases. Cancer-related pulmonary cavitary lesions can be caused by primary lung cancer or metastasized malignancies. However, pulmonary cavitary lesions are rarely caused by metastasized urothelial carcinoma. Here, we reported a case of pulmonary cavitation caused by metastasized urothelial carcinoma. ***(Thorac Med 2022; 37: 321-324)***

Key words: Lung cavitary lesions, urothelial carcinoma

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Refractory Hypoxemia Caused by a Bronchoesophageal Fistula: A Case Report and Literature Review

Hao-Chung Tsai[1], Chieh-Yung Wang[1], Chen-Liang Tsai[1]

A 66-year-old man who smoked heavily initially presented with dysphagia, a huge mediastinum, and a lung mass. Adenosquamous lung cancer stage IIIC (AJCC 8th) was diagnosed, and definitive concurrent chemoradiotherapy (CCRT) was initiated when he was in partial remission. Dysphagia occurred during and after CCRT. Panendoscopy revealed radiation esophagitis. One month later, he developed pneumonia and hypoxemic and hypercapnic respiratory failure. Since the hypoxemia persisted, we performed bronchoscopy, which revealed a bronchoesophageal fistula in the right main bronchus. We reported this rare complication of CCRT in a stage IIIC non-small cell lung cancer patient and reviewed the relevant literature. ***(Thorac Med 2022; 37: 325-331)***

Key words: Lung cancer, chemoradiotherapy, bronchoesophageal fistula, tracheoesophageal fistula, adenosquamous carcinoma

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Successful Treatment of Iatrogenic Tracheal Injury with Stent Placement and Extracorporeal Membrane Oxygenation – A Case Report

Hsien-Chi Liao[1], Jen-Hao Chuang[2], Wei-Ling Hsiao[3], Ke-Cheng Chen[4]

Tracheobronchial injuries are infrequent but potentially life-threatening. Iatrogenic tracheal rupture after endotracheal intubation is extremely rare. In this report, we present the case of a 16-year-old male who suffered an iatrogenic tracheobronchial injury during multiple trauma treatment after a traffic accident, and who was treated successfully with stent placement and extracorporeal membrane oxygenation. In addition to a literature review, we also discuss post-intubation injuries to the trachea and bronchi and treatment possibilities. ***(Thorac Med 2022; 37: 332-338)***

Key words: Iatrogenic Tracheal Injury, Stent Placement, Extracorporeal Membrane Oxygenation

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Conservative Management of Tracheal Laceration after Blunt Chest Trauma: A Case Report

Yen-Lin Wu[1], Hwai-Luh Chang[1], Yei-San Hsieh[1]

Tracheal injuries are rare but fatal. Although the prevalence rate is not high, many patients have died before arriving at the hospital. The sooner a tracheal laceration can be diagnosed, the sooner the likelihood of complications and mortality can be reduced. So far, there is no treatment guideline for tracheobronchial injury. In the past, the treatment of tracheal laceration was based mainly on surgical repair. In this case, the patient was diagnosed with chest contusion, tracheal laceration, rib fractures on both sides combined with pneumothorax, and a 4th thoracic vertebral fracture. We observed that the subcutaneous emphysema and pulmonary air leakage improved after placing chest tubes in both sides. Therefore, we chose tracheotomy as conservative treatment. Through active oral cleaning, secretion suction, and administration of broad-effect antibiotics, the patient's damaged trachea showed significant wound healing. After the airway was completely healed, the patient underwent spinal surgery, and was then discharged from the hospital. Therefore, we suggest conservative treatment for spontaneous wound healing as an alternative for patients who refuse surgery or who are at high risk of complications or mortality due to surgery. ***(Thorac Med 2022; 37: 339-343)***

Key words: tracheal laceration, blunt chest trauma

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Dilemma of Difficult Airway Management in a Patient with COVID-19: Case Report and Literature Review

Suey-Haur Lee[1], Wen-Feng Fang[1]

Aerosol and fomite transmission of SARS-CoV-2 is possible, since the virus can remain infectious in aerosols for hours. This dangerous situation exists, especially, during the intubation and extubation of patients with COVID-19. However, many modalities used for difficult airway management are not suitable for use during the current pandemic. Herein, we report on the dilemma and our experience with difficult airway management in a patient with COVID-19. ***(Thorac Med 2022; 37: 344-350)***

Key words: Difficult airway; Covid-19

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