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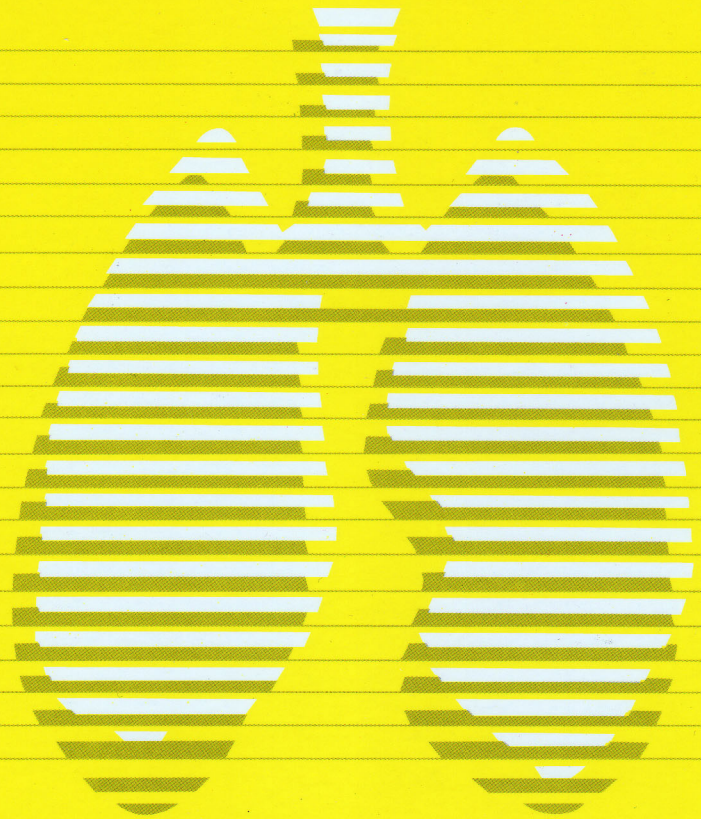

台灣胸腔暨重症加護醫學會

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原著

病例報告

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Orginial Articles

Case Reports

Effects of Angiotensin-Converting Enzyme 2 (ACE2) on Bleomycin-Induced Pulmonary Injury

Wen-Yeh Hsieh*,****, Jih-Sheng Hsieh**, Wan-Hsuan Chuang***,
Chih-Sheng Lin**, Chen-Yi Huang*

Introduction: Anticancer treatment with bleomycin can cause interstitial pneumonitis and pulmonary fibrosis, pathologies that are affected by the renin-angiotensin system (RAS). In this study, we focused on the role of angiotensin-converting enzyme 2 (ACE2), which can hydrolyze angiotensin II (Ang II) to angiotensin-(1-7) (Ang-(1-7)), in bleomycin-induced pulmonary injury.

Methods: Male wild-type (WT; C57BL/6) and ACE2 knockout (KO; hemizygous $ACE2^{-/y}$) mice were anesthetized and given a single dose of bleomycin solution (4 mg/kg) directly into the trachea. The body weight and resting respiratory rate (RRR) of the mice were measured every week, and the mice were sacrificed 3 weeks after bleomycin treatment. Lung tissue was collected for further biochemical and pathological assays.

Results: After bleomycin challenge, the WT and $ACE2^{-/y}$ mice were compared. RRR, infiltration of white blood cells, alveolar damage, fibrosis, and the pulmonary levels of transforming growth factor-β1 (TGF-β1) and interleukin-6 (IL-6) were significantly greater in the $ACE2^{-/y}$ mice than in the WT mice. Pulmonary ACE activity was significantly increased in the $ACE2^{-/y}$ mice and was higher than that in the WT mice. Fibrotic markers, connective tissue growth factor (CTGF) and elastin were markedly induced in the lungs after bleomycin challenge.

Conclusion: Bleomycin can induce sustained pulmonary inflammation, fibrosis, and increased ACE activity. Bleomycin-induced lung injury is related to RAS imbalance, and ACE2 deficiency can enhance this injury via abnormal accumulation of Ang II. The results suggest that regulating the RAS could reduce pulmonary damage caused by bleomycin. ***(Thorac Med 2018; 33: 50-62)***

Key words: bleomycin, pulmonary fibrosis, renin-angiotensin system, angiotensin-converting enzyme 2, inflammation

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第二型血管收縮素轉換酶於 bleomycin 誘發肺部纖維化病變機轉中之角色探討

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背景：博萊黴素 (bleomycin) 治療癌症造成間質性肺炎或肺纖維化，與腎素－血管收縮素系統 (Renin-angiotensin system; RAS) 調節密切相關。第二型血管收縮素轉換酶 (Angiotensin-converting enzyme 2; ACE2) 可水解血管收縮素 II (Angiotensin II; Ang II)，本研究為探討 bleomycin 誘發肺損傷與 ACE2 的關聯。

方法：雄性野生型 (WT; C57BL/6)、ACE2 基因剔除 (ACE2 KO；$ACE2^{-/y}$) 小鼠由氣管給予 bleomycin，每週量測體重和呼吸次數 (resting respiratory rate; RRR) 後犧牲並採集肺臟進行生化與病理分析。

結果：比較 bleomycin 處理後 WT 與 $ACE2^{-/y}$ 小鼠。RRR 上升、肺臟中白血球浸潤、纖維化病變、tumor growth factor beta 1 (TGF-β1)、interleukin-6 (IL-6)、ACE 活性及結締組織生長因子 (CTGF) 和彈性蛋白 (elastin) 在 $ACE2^{-/y}$ 小鼠均有顯著高表現。

結論：Bleomycin 可誘發肺部發炎反應、纖維化及 ACE 活性上升，與 ACE2 缺失的 RAS 有關，導致 Ang II 濃度提升加劇損傷。推測 RAS 的調節可減緩 bleomycin 誘發肺部炎症反應的損傷。*(胸腔醫學* ***2018; 33: 50-62)***

關鍵詞：博萊黴素，肺纖維化，腎素－血管收縮素系統，第二型血管收縮素，炎症反應

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Clinical Experiences in the Management of Upper Airway Injury

Che-Chih Cheng, Chin-Chieh Hsu, Jen-Chih Chen

Airway trauma, also known as tracheobronchial injury, is a cause of immediate death after an accident. For this report, we collected the medical records of 4 patients with upper airway injuries: 1. a patient with blunt chest trauma with tracheal laceration due to a traffic accident; 2. a patient with severance of the larynx by due to a knife wound; 3. a patient with a penetrating injury to the neck with partial transection of the trachea by a knife; and 4. a patient with a penetrating injury to the right upper neck by the metal lock of his helmet in a traffic accident. Our management of these patients involved, conservative treatment with a hand-made tracheostomy tube (a modified endotracheal tube) in patient 1 and surgical repair with absorbable sutures interruptedly in the others. Patient 1 was weaned from the ventilator after 34 days, patient 2 after 8 days, patient 3 after 2 days, and patient 4 after 1 day. All the patients with upper airway injuries survived after our treatment and there was no further complication. ***(Thorac Med 2018; 33: 63-69)***

Key words: upper airway injury, tracheobronchial injury

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上呼吸道損傷之臨床處理經驗

鄭哲智　許晉杰　陳仁智

上呼吸道損傷係創傷後立即死亡的原因之一，且其發生率約佔胸頸創傷患者的 0.5-2%。而呼吸道的保護是處理氣道損傷患者的首要步驟，通常是採用氣管內管插管的方式，也建議利用支氣管鏡導引，以越過病灶處來進行插管。我們收集了四位氣道損傷的患者：1. 車禍導致胸部挫傷併氣管撕裂傷；2. 水果刀造成的喉部切割傷；3. 美工刀造成的頸部穿刺傷及部分氣管截斷；4. 車禍中遭安全帽扣環拉扯造成的上頸部穿刺傷。

我們的臨床處理方式如下：個案 1 採保守治療合併使用自製的加長型氣切管 (改造之氣管內管)；其餘三個個案皆採用可吸收線來進行氣道損傷的修補。四個個案脫離呼吸機的時間依序分別為 34 天、8 天、2 天及 1 天。

在我們的治療後，全部患者皆順利存活，並且在門診追蹤安排的支氣管鏡、電腦斷層或是肺功能中，皆無發現後續的併發症。*(胸腔醫學 **2018; 33: 63-69**)*

關鍵詞：氣道損傷，上呼吸道損傷

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IgG4-Related Lung Disease in a Patient with Systemic Lupus Erythematosus: A Case Report

Lih-Chyun Chang, Cheng-Han Wu*, Chia-Lin Hsu, Jin-Yuan Shih, Chong-Jen Yu

IgG4-related lung disease (IgG4-RLD) is an uncommon clinicopathological entity. It is a pulmonary manifestation of IgG4-related disease. Lymphadenopathy of IgG4-RLD makes it difficult to distinguish from lung cancer. We report a 67-year-old male patient with IgG4-RLD and systemic lupus erythematosus. His initial presentations in the health examination were an elevated serum creatinine level, anemia, leukopenia and lung tumor. Abdominal magnetic resonance imaging showed marked swelling at the pancreatic head and multiple wedge-shaped lesions in both kidneys. The video-assisted thoracic surgery wedge resection lung specimen had features that met all histologic diagnostic criteria for IgG4-RLD. Under corticosteroid and azathioprine treatment, the serum IgG4 level, renal function and pancreatic lesion improved gradually. When IgG4-RLD is suspected clinically, the serum IgG4 level measurement and surgical lung biopsy are important diagnostic tools. ***(Thorac Med 2018; 33: 70-75)***

Key words: IgG4-related lung disease, systemic lupus erythematosus

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IgG4 相關肺部疾病合併紅斑性狼瘡：病例報告

張立群　吳政翰 *　許嘉林　施金元　余忠仁

IgG4 相關肺部疾病是 IgG4 相關疾病的肺部表現，為一相當罕見的疾病，因常合併淋巴結病變，影像上不易與肺癌區分。本篇文章探討一位六十七歲、IgG4 相關肺部疾病合併紅斑性狼瘡的病人，一開始在健康檢查中發現肌酸酐上升、貧血、白血球低下與肺部腫塊，腹部磁振造影可見胰臟腫大及雙側腎臟病灶，經胸腔內視鏡影像輔助手術肺部切片證實為 IgG4 相關肺部疾病，胰臟腫大在治療後漸漸改善，血清 IgG4 濃度亦逐漸下降。當發現有肺腫瘤，懷疑為 IgG4 相關肺部疾病，血清 IgG4 濃度及胸腔內視鏡影像輔助手術肺部切片為疾病診斷的重要工具。*(胸腔醫學 **2018; 33: 70-75**)*

關鍵詞：IgG4 相關肺部疾病，紅斑性狼瘡

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Endobronchial Aspergilloma with Hemoptysis in an Immunocompetent Patient: A Case Report and Literature Review

Shih-Hsuan Peng, Sheng-Huei Wang, Chung-Kan Perng, Chih-Feng Giian, Wann-Cherng Perng, Chih-Hao Shen

Aspergillosis is associated with a variety of clinical infections in the thorax, and endobronchial aspergilloma is a rare presentation of pulmonary aspergillosis. Endobronchial aspergilloma may affect immunocompromised patients, but it is also found in immunocompetent patients. Herein, we describe the case of a 63-year-old woman without underlying disease who presented complaining of hemoptysis for 2 days. Chest computed tomography showed only an accumulation of fluid-like material at the bronchus of the right upper lobe. Persistent hemoptysis was apparent during the first 6 days of hospitalization. Flexible bronchoscopy revealed a ball-like mass of necrotic tissue that contained fungal hyphae as determined by histopathology, consistent with a diagnosis of endobronchial aspergilloma. The aspergilloma was removed and the patient's symptoms were relieved. This case highlights that endobronchial aspergilloma in immunocompetent patients may be associated with clinical pictures that differ from those of immunocompromised patients with endobronchial aspergilloma. Timely bronchoscopy to facilitate diagnosis is important for adequate management. ***(Thorac Med 2018; 33: 76-83)***

Key words: endobronchial aspergilloma, hemoptysis, immunocompetent

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支氣管內麴菌球合併咳血於免疫健全患者：病例報告與文獻回顧

彭士軒　王勝輝　彭忠衍　簡志峰　彭萬誠　沈志浩

麴菌在胸腔內有許多不同的臨床形式，而支氣管內麴菌球則是少見的肺麴菌病表現。支氣管內麴菌球通常是影響免疫不全的病患，但也會在免疫健全的病患中發現。我們的案例報告是一位沒有潛在疾病的63歲女性，主訴咳血2天。胸部電腦斷層只發現有液體狀的物質堆積在右上葉支氣管內。但是咳血仍然在住院的前6天持續出現。支氣管鏡檢查則發現一顆包含壞死組織的球狀腫塊，這個腫塊的病理報告顯示內含真菌菌絲，因此診斷為支氣管內麴菌球。病患的症狀在此麴菌球被移除後也就逐漸緩減。這個病例說明免疫健全的病患感染支氣管內麴菌球時可能會和免疫不全的病患有不同的臨床表現。及時的支氣管鏡檢查對於診斷及適當的治療是很重要的。*(胸腔醫學* ***2018; 33: 76-83)***

關鍵詞：支氣管內麴菌球，咳血，免疫健全

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Carcinoid Tumor in Intralobar Pulmonary Sequestration: A Case Report

Hsin-Yueh Fang, Yi-Cheng Wu, Yun-Hen Liu, Ming-Ju Hsieh, Yin-Kai Chao, Ching-Yang Wu, Wei-Hsun Chen

Pulmonary sequestration is a congenital abnormality characterized by abnormal bronchial development and a lack of connection of a systemic arterial blood supply. We present the case of a 57-year-old male with the symptom of hemoptysis, who underwent surgical resection of the left lower lobe. However, the final histological pathology revealed a carcinoid tumor in the pulmonary sequestration. Although the exact pathway leading to the development of carcinoma is still unknown, a malignant degeneration must also be considered in lung sequestration. ***(Thorac Med 2018; 33: 84-88)***

Key words: pulmonary sequestration; carcinoid tumor; cancer; hemoptysis

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在隔離肺中診斷之肺部類癌：病例報告

范馨月　吳怡成　劉永恆　謝明儒　趙盈凱　吳青陽　陳維勳

隔離肺是一種先天性的肺部結構異常，主要表現為異常結構的支氣管分布及系統性的血管供應。本文提出一位 57 歲男性病患，因藥物無法治癒之咳血症狀，接受左下葉及隔離肺之切除，在病理報告中診斷出肺部類癌。雖然確切癌化的致病機轉上不明確，對於有症狀之隔離肺病患，癌變的診斷應被納入考慮。*(胸腔醫學* ***2018; 33: 84-88****)*

關鍵詞：隔離肺，類癌，腫瘤，咳血

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Successful Management with Hyperbaric Oxygen Therapy in Computed Tomography-Guided Core Needle Biopsy of the Lung Complicated with Air Embolism

Wei-Ting Chen, Chiung-Zuei Chen

Computed tomography-guided lung biopsy is a widely accepted and frequently performed procedure for pulmonary lesions; however, it is associated with various complications including pneumothorax, hemoptysis and parenchymal hemorrhage. Mild, self-limiting pneumothorax and hemoptysis are common complications of this procedure. Air embolism is a potentially life-threatening but extremely rare complication. We report a case of air embolism in the ascending aorta that developed during a computed tomography-guided percutaneous needle biopsy of the lung. The air embolism resolved uneventfully after a 1-hour hyperbaric oxygen therapy treatment session. No cardiac or cerebral symptoms were seen after this treatment. ***(Thorac Med 2018; 33: 89-94)***

Key words: CT-guided transthoracic lung biopsy, Air embolism

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成功以高壓氧治療電腦斷層引導肺穿刺切片併發之氣栓塞

陳威廷　陳炯睿

電腦斷層引導之肺切片是一項被廣泛接受且經常實施之診斷工具，然而其亦有存在著不同之併發症，例如氣胸、咳血及肺出血。輕度自行復原之氣胸及咳血為最常見之併發症，氣栓塞是一種具有致命危險但極罕見之併發症。我們報告一位因接受電腦斷層引導之切片併發空氣栓塞存在於上升主動脈，並成功以高壓氧治療移除其空氣栓塞，沒有遺留心臟或腦部之併發症之案例。*(胸腔醫學 **2018; 33: 89-94**)*

關鍵詞：電腦斷層引導之肺切片，空氣栓塞

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