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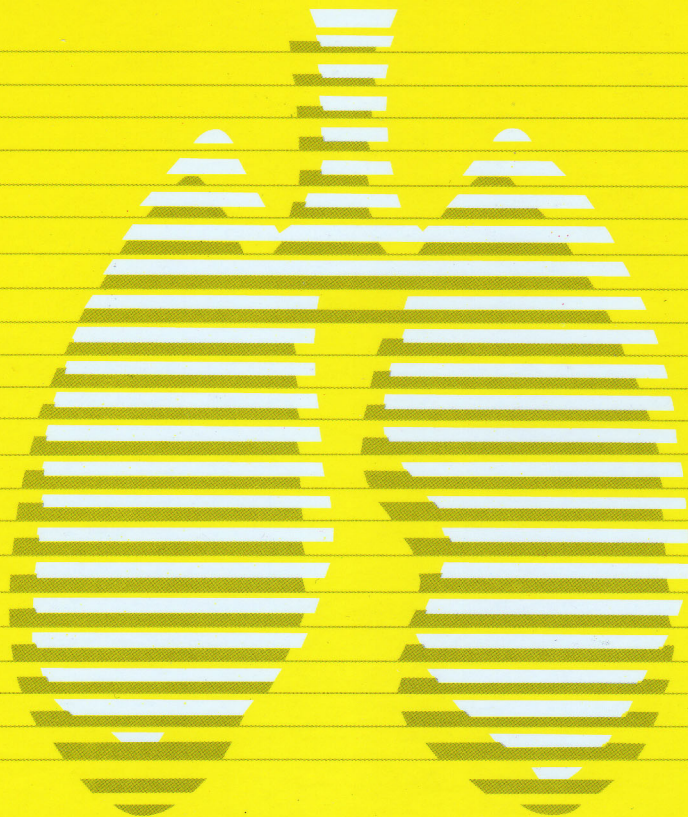
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High-Resolution Computed Tomography Used to Assess Patients with Emphysema Following Pulmonary Rehabilitation

Shih-Min Chen, Yu Sophie Wang*, Jeng-Shing Wang**

Objectives: The purpose of our study was to evaluate the short-term effect of changes resulting from pulmonary rehabilitation on subjects with chest high-resolution computed tomography (HRCT)-diagnosed emphysema, both cross-sectionally and longitudinally, using repeated HRCT scans.

Methods: A detailed clinical history was taken and physical examination performed. We performed a serum study, lung function testing and HRCT scanning to assess emphysema. All patients participated in 12-week, outpatient-based pulmonary rehabilitation consisting of 3 sessions per week.

Results: After participating in the program, there was a significant improvement in the patients' body mass index (0.55 kg/m^2 , $p < 0.001$), and a significant, but smaller than normal decline in forced expiratory volume in 1 second (0.60% , $p < 0.001$). There was also a significant decline in C-reactive protein (0.20 mg/L , $p < 0.001$) and St. George's Respiratory Questionnaire (11, $p < 0.001$). In the CT image, there were significant increases in mean lung density and attenuation value separating the lowest 15% of pixels (4.1 HU , $p < 0.001$), but a significant decrease in the percentage of the relative area of the lungs with attenuation values < -950 Hounsfield unit (1.1% , $p < 0.001$). There were significant declines in smoking ($p < 0.01$), exacerbation, modified Medical Research Council scale, ADO index, DOES index, and emphysema severity (all $p < 0.05$).

Conclusions: This study shows important changes in patients with emphysema assessed with HRCT following pulmonary rehabilitation. (*Thorac Med* 2015; 30: 327-336)

Key words: emphysema, high-resolution computed tomography, mean lung density, percentile, relative area, pulmonary rehabilitation

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肺氣腫患者肺部復健後的高解析度電腦斷層掃描評估

陳世民 王貞云* 王正信**

目的：本研究的目的是評估胸部高解析度電腦斷層掃描 (HRCT) - 診斷肺氣腫受試者肺部復健後的短期效應變化，無論是橫斷面和縱斷面，重複使用 HRCT 掃描。

方法：進行詳細臨床病史和體格檢查。我們進行血清研究，肺功能測試和 HRCT 掃描，以評估肺氣腫。所有患者參加為期 12 週，門診為基礎的肺部復健，包括每週三節。

結果：參與復健之後，身體質量指數顯著改善 (0.55 千克 / 平方米, $p < 0.001$)。第一秒用力呼氣容積顯著下降 (0.60%, $p < 0.001$)，但小於正常的下降。還有 C 反應蛋白顯著下降 (0.20 毫克 / L, $p < 0.001$) 及聖喬治呼吸問卷顯著下降 (11, $p < 0.001$)。圖像方面，平均肺密度和衰減值分開至少 15% 的像素顯著增加 (4.1 HU, $p < 0.001$)，但衰減值百分比 < -950 亨氏單位的肺部的相對面積顯著下降 (1.1%, $p < 0.001$)。吸煙 ($p < 0.01$)，其他急性發作，modified Medical Research Council scale, ADO 指標，DOES 指標和肺氣腫的嚴重程度皆顯著下降 ($p < 0.05$)。

結論：本研究顯示肺氣腫患者肺部復健後的高解析度電腦斷層掃描評估的可能重要的變化。(胸腔醫學 2015; 30: 327-336)

關鍵詞：肺氣腫，高解析度電腦斷層掃描，平均肺密度，百分，相對面積，肺部復健

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Factors Affecting Occurrence and Outcome of Unplanned Extubation among Patients in the Intensive Care Unit

Yi-Chih Huang*, Hsiang-Yu Huang***, Chou-Chin Lan*,**, Mei-Chen Yang*,**, Chun-Yao Huang*, Yao-Kuang Wu*,**

Background: Unplanned extubation (UE) is a frequent severe complication of mechanical ventilation in critically ill patients in the intensive care unit (ICU) and may be associated with increased morbidity and mortality. This study investigated the incidence, predictive factors, outcomes, and expenditures of patients with failed UE (re-intubation within 48 hours) in adult ICUs.

Methods: This case-control study included 193 cases and 579 controls (case-control ratio of 1:3) for the period covering January 1, 2007 to December 31, 2011.

Results: There were 193 episodes of UE, with a density of 0.25 per 100 ventilated days. The failed UE rate was 42.0% (81/193), and the hospital mortality rate was 29.5% (57/193). In multivariable analysis, higher APACHE II score (odds ratio [OR] 0.946), longer duration from intubation to UE (OR 0.940), lower consciousness level (OR 1.208), and full ventilator support (OR 3.868) were factors predictive of failed UE. The failed UE group had the worst outcomes, the most ventilator days, and the highest costs. They also had higher hospital mortality rates (54.3%) and lower hospital discharge rates (33.3%) than the controls.

Conclusion: Patients with failed UE had worse outcomes and higher costs in the ICU than the controls and those with successful UE. Aggressive weaning may be recommended for patients under partial ventilator support with low FiO₂. Adequate restraint should be provided to prevent any failed UE in patients with a higher APACHE II score, more intubation days, and lower consciousness level, and those on full ventilator support. (*Thorac Med* 2015; 30: 337-346)

Key words: intensive care, mechanical ventilation, reintubation, unplanned extubation

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影響加護病房病人非計畫性拔管發生的原因及結果

黃奕智 * 黃湘喻 *** 藍胃進 **, ** 楊美貞 **, ** 黃俊耀 * 吳耀光 **, **

背景：在加護病房中，使用呼吸器的病人發生非計畫性拔管是一個常見的併發症而且常常造成死亡率增加。本研究探討加護病房病人非計畫性拔管的機率，以及造成非計畫性拔管失敗（拔管後 48 小時內再插管）的危險因子，可能的結果及對醫療支出的影響。

方法：本研究利用病例對照研究法，自 2007 年 1 月至 2011 年 12 月共納入 193 位病人及 579 位對照組。

結果：非計畫性拔管共發生 193 次，比率約為每使用 100 天呼吸器發生 0.25 次。非計畫性拔管失敗比率為 42% (81/193)，死亡率為 29.5% (57/193)。經多變量分析後發現，高疾病嚴重度 (APACHE II score)，插管時間較長，意識狀況不佳以及充分呼吸器支持 (full ventilator support) 的病人在非計畫性拔管後容易失敗。同時，非計畫性拔管失敗的病人預後最差，死亡率最高，使用呼吸器的時間最久而且醫療支出最高。

結論：和對照組及非計畫性拔管成功的族群相比，非計畫性拔管失敗的病人預後最差且醫療花費最高。針對不須充分呼吸器支持且使用較低氧氣分壓的病人，應更積極設法脫離避免非計畫性拔管。針對暫時無法脫離，高疾病嚴重度且意識狀況不佳的病人則應適當約束以免非計畫性拔管失敗造成死亡率上升及更多醫療支出花費。(*胸腔醫學* 2015; 30: 337-346)

關鍵詞：重症加護照顧，機械通氣，再插管，非計畫性拔管

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Left Massive Hemothorax Caused by Celiac Artery Aneurysm Rupture – A Case Report

Pin-Ru Chen, Chien-Kuang Chen, Yu-Sen Lin

Celiac artery aneurysm (CAA) is a rare form of visceral artery aneurysm. Most patients are diagnosed as having CAA when they are symptomatic or incidentally detected. We present the case of a 31-year-old female who had epigastric discomfort followed by left massive hemothorax after nausea, and vomiting with hematemesis. She was first diagnosed with esophageal rupture. After further examination, CAA with rupture was suspected. Severe epigastric pain developed on day 9 after hospitalization. Aortic stenting with a superior mesenteric artery (SMA) chimney and embolization of the pseudoaneurysm were performed. Antibiotics were prescribed, and she was then discharged uneventfully. We reviewed the literature regarding the symptoms, diagnosis and treatment of CAA. The incidence of CAA is low, and the symptoms of epigastric pain followed by left massive hemothorax after vomiting could be confused with esophageal rupture initially. We should keep this uncommon disease in mind and deal with patients carefully. (*Thorac Med* 2015; 30: 347-351)

Key words: celiac artery aneurysm, hemothorax

腹腔動脈瘤破裂導致左側大量血胸－病例報告

陳品儒 陳建光 林昱森

腹腔動脈瘤在臟器血管瘤中相當少見。大多數被診斷的病人都有症狀或是意外被發現。在此我們介紹一位患者初期表現出上腹痛及嘔吐，之後出現左側血胸。在急診初期被懷疑為食道破裂引起血胸，但經過進一步影像學檢查及上消化道內視鏡檢查後，懷疑為腹腔動脈瘤破裂併左側血胸。患者因血液動力學相對穩定，因此計畫先觀察後再安排至血管外科治療。但在住院期間，即因再次腹痛追蹤電腦斷層檢查，腹腔動脈瘤明顯增大，並有後腹腔血腫。因此安排血管支架手術治療，術後患者順利出院，共住院二十一天。在此我們回顧文獻關於腹腔動脈瘤的報告相當少，而以上腹痛後併嘔吐左側血胸的表現容易與食道破裂混淆。因此在診斷此類患者時要相當謹慎，並小心的處理病人。(胸腔醫學 2015; 30: 347-351)

關鍵詞：腹腔動脈瘤，血胸

Disseminated Tuberculosis Presenting as Progressive Abdominal Pain in a Patient with Down's Syndrome: A Case Report and Literature Review

Tzu-Yu Kuo*, Chih-Hung Lin**, Jong-Rung Tsai*,***, Inn-Wen Chong*,***

A 38-year-old female with Down's syndrome presented with intermittent anorexia and body weight loss of 10 kilograms during the past year. Intermittent epigastralgia also developed in the most recent 3 months. She was sent to the emergency department, where obvious fever, progressive diffuse abdominal pain, and hypotension were noted. Computed tomography scan of the abdomen and chest after admission led to the diagnosis of diffuse lymphadenopathy, considered to be disseminated tuberculosis infection or lymphoma. Disseminated tuberculosis was confirmed by thoracoscopic lymph node biopsy and sputum culture, which revealed *Mycobacterium tuberculosis* complex. Patients with Down's syndrome have a higher risk of developing lymphoma and leukemia. Down's syndrome patients may have impaired cellular immunity, leaving them susceptible to pulmonary tuberculosis infection and extra-pulmonary involvement. Clinicians should be aware of the presentation of disseminated tuberculosis infection in patients with underlying Down's syndrome. (*Thorac Med* 2015; 30: 352-359)

Key words: disseminated tuberculosis, Down's syndrome

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一位唐氏症患者以漸進性腹痛來表現散在性結核： 病例報告與文獻回顧

郭子右* 林智鴻** 蔡忠榮*,*** 鍾飲文*,***

一位 38 歲女性患者過去三個月因反覆上腹痛而時常就診；過去一年患者已有食慾不振的症狀以及體重減輕 10 公斤。除了唐氏症病史外，患者並沒有其他顯著病史。患者因腹痛漸趨嚴重及反覆發燒而至急診求診，同時在急診發現有休克情形。腹部及胸部電腦斷層檢查懷疑結核菌感染或是惡性淋巴腫瘤；後續痰液培養報告以及縱膈腔淋巴結取樣的病理報告皆顯示為結核菌感染。唐氏症的患者已被證實有較高機率罹患白血病和淋巴瘤，但是否易受到感染則尚未有明確定論。我們回顧過去有關唐氏症免疫異常及散在性結核病的相關文獻，並希望借此提醒臨床醫師要更注意唐氏症患者，及其有可能有較高機會由肺結核發展為散在性結核病。(*胸腔醫學* 2015; 30: 352-359)

關鍵詞：散在性結核，唐氏症

***Aspergillus* Tracheobronchitis – A Case Report**

Yu-Ping Chang*, Huang-Chih Chang*, Chin-Chou Wang*,**, Meng-Chih Lin*,***,
An-Shen Lin*

Tracheobronchial aspergillosis accounts for a small percentage of *Aspergillus*-related respiratory disease and has been classified into invasive, allergic and saprophytic forms. Although this disease is generally observed in severely immunocompromised patients, it may occur in less immunocompromised or even immunocompetent patients. Herein, we report a 74-year-old woman with exertional dyspnea for 6 months. Initial chest radiograph showed right upper lobe collapse. Chest computed tomography revealed a right upper endobronchial lesion with right upper lobe collapse. Bronchoscopy showed thick mucus plugs obstructing the right upper lobe bronchial orifice, with mucosa infiltration; biopsy revealed fungal hyphae with acute angle branching and tissue necrosis, which was compatible with aspergillosis. After oral voriconazole therapy for 4 months, the chest radiograph showed no improvement. Possible causes of treatment failure are discussed. (*Thorac Med* 2015; 30: 360-366)

Key words: *Aspergillus*, tracheobronchitis

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麴菌氣管支氣管炎個案報告

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麴菌氣管支氣管炎佔麴菌所造成的呼吸道疾病的一小部分，且被分類成侵襲性、過敏性、腐生性三種型式。雖然麴菌氣管支氣管炎通常發生於嚴重免疫功能不全的病人身上，但也可能發生在免疫功能低下程度較輕微或甚至免疫功能正常的病人。我們報告一個 74 歲女性糖尿病患者，一開始表現為持續 6 個月的咳嗽及活動性喘，胸部 X 光片顯示右上肺葉腫塊及塌陷，胸部電腦斷層發現右上肺葉支氣管內病灶合併右上肺葉塌陷。支氣管鏡發現右上肺葉開口有白色壞死組織塊阻塞且合併黏膜浸潤，切片的病理組織顯示為麴菌。經過 4 個月的口服 voriconazole 治療，胸部 X 光並無進步。治療失敗的可能原因亦有討論。(*胸腔醫學* 2015; 30: 360-366)

關鍵詞：麴菌，氣管支氣管炎

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Huge Intra-cardiac Mass in a Patient with an Infectious Left Atrial Thrombus: Case Report and Literature Review

Hung-Ling Huang*, Ming-Ju Tsai*, Shan-Yin Tsai**, Inn-Wen Chong*,***,
Chau-Chyun Sheu*,****

The differential diagnosis of an intra-cardiac mass is always challenging. Imaging tools including transthoracic echocardiography, trans-esophageal echocardiography, computed tomography and magnetic resonance imaging can provide a useful assessment and overall visualization of the mass. However, the etiology will not be confirmed without a biopsy. Although thrombus is the most common etiology of an intra-cardiac mass, infectious thrombus has been rarely reported. Its risk factors, presentations, prognosis, and optimal treatments are largely unknown. We report the case of a patient with advanced thyroid follicular cancer and atrial fibrillation, who was admitted for bradycardia and heart failure caused by digoxin intoxication. The patient had no obvious septic presentations on admission. Echocardiography accidentally found a huge mass in the left atrium. Surgical excision confirmed the diagnosis of an infectious thrombus. Despite aggressive treatment, the patient finally died. We report this case of a 76-year-old woman with a huge infectious thrombus in the left atrium and hope that it will raise the level of suspicion of an infectious thrombus in patients with a huge, rapidly-enlarging intra-cardiac mass. The initial manifestations of an infectious intra-cardiac thrombus may be subtle until disease progression. Imaging studies are useful for initial assessment, but only surgical pathology can confirm the diagnosis. Early surgical excision with prolonged antibiotic treatment may increase the chance of survival. (*Thorac Med* 2015; 30: 367-374)

Key words: infectious thrombus, left atrium, intra-cardiac mass

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巨大之心臟內腫塊——一個左心房感染性血栓之 罕見病例報告與文獻回顧

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心臟內腫塊之鑑別診斷常常是頗具挑戰的。影像學檢查，包括經體表心臟超音波、經食道心臟超音波、電腦斷層及核磁共振掃描可顯像整個腫塊，並提供初步評估，然而真正的成因仍需靠切片確診。雖然血栓是心臟內腫塊最常見的成因，感染性血栓是很少見的，而其危險因子、臨床表徵、預後及合適的治療等亦大多不明。我們報告此 76 歲女性患者在左心房內有巨大之感染性血栓之案例，希望提高臨床醫師對於心臟內感染性血栓之警覺。心臟內感染性血栓的臨床表徵常常要隨疾病進展才會逐漸顯現，影像學檢查是初期評估的重要工具，但只有外科病理檢查能確定診斷，而盡早手術切除併長時間抗生素治療應可增加病人的存活率。(胸腔醫學 2015; 30: 367-374)

關鍵詞：感染性血栓，左心房，心臟內腫塊

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Difficulty in Diagnosis and Tumor Staging in Coexisting Lung Cancer and Pulmonary Tuberculosis: A Case Report

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A solitary pulmonary mass is a common presentation of lung cancer. However, other inflammatory or infectious diseases, such as pulmonary tuberculosis (TB), also present similar imaging characteristics and may coexist with lung cancer. This makes the diagnosis and identifying the correct tumor stage difficult for physicians. Herein we present the case of a patient with coexisting lung squamous cell carcinoma and active pulmonary TB infection, which presented a solitary pulmonary mass. Tissue biopsy was performed twice via different approaches. However, imaging studies could not confirm the diagnosis and tumor stage, which were finally established after surgical intervention. (*Thorac Med* 2015; 30: 375-381)

Key words: pulmonary tuberculosis, lung cancer, biopsy

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肺癌病灶同時合併肺結核感染致困難診斷與腫瘤分期 一病例報告

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肺部腫塊或結節於臨床上首要排除惡性腫瘤。然而，慢性感染或發炎，如結核病，可同時存在於肺部甚至同一結節病灶，並影響淋巴結反應，從而導致分期診斷的困難，而影響後續治療方向。在本文中我們報告一位 73 歲男性，因結核菌感染與肺癌同時存在於單一肺部結節並影響淋巴結反應性增生，從而影響組織切片與影像診斷的結果，導致腫瘤分期困難，最終以手術切除才獲得正確之診斷與治療。(胸腔醫學 2015; 30: 375-381)

關鍵詞：肺癌，肺結核，切片

Invasive Tracheobronchial Aspergillosis in Its Most Severe Form Presenting as Hypoxemic Respiratory Failure-Report of 2 Cases and Review of the Literature

Chun-Yu Lin, Jui-Ying Fu, Kuo-chin Kao, Ning-Hung Chen, Chung-Chi Huang

Invasive pulmonary aspergillosis (IPA) usually develops in overtly immunosuppressed patients. Invasive tracheobronchial aspergillosis (ITA) is a rare subtype of IPA. The mortality rate of patients with ITA ranges from 20% to 100%, depending on the invasiveness and extensiveness of the *Aspergillus*. Accumulating evidence supports combined antifungal therapy, but the benefit to survival remains unknown. We reported 2 patients with ITA presenting as hypoxemic respiratory failure. Initial manifestation was delayed resolution of pneumonia. Both patients were diagnosed via bronchoscopy with pathologic confirmation. Serial bronchoscopic debridement, combined antifungal therapy and extracorporeal membrane oxygenation (ECMO) support were arranged. In spite of our efforts, the 2 patients died of multidrug-resistant *Acinetobacter baumannii* bacteremia after prolonged intensive care unit stay.

Acute hypoxemic respiratory failure, with both airway and parenchymal involvement, may be the most important prognostic factor for ITA. Awareness, early bronchoscope-guided diagnosis, combination antifungal treatment and aggressive surgical intervention are the keys to successful treatment of patients with ITA. (*Thorac Med* 2015; 30: 382-389)

Key words: invasive tracheobronchial aspergillosis

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極嚴重之侵入性呼吸道麴菌感染表現為缺氧性呼吸衰竭— 兩則病例報告與文獻回顧

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侵入性肺部麴菌感染較常見於免疫不全患者，侵入性呼吸道麴菌感染為其中一類罕見的分型。死亡率差異性很大，主要與麴菌之侵入性與影響範圍有關。結合兩種黴菌藥物的治療方式逐漸獲得重視，但對於存活率沒有明確的幫助。我們提出之病例報告為兩名患者罹患侵入性呼吸道麴菌感染表現為缺氧性呼吸衰竭，經支氣管鏡檢查確診為侵入性呼吸道麴菌感染。經過連續的支氣管鏡清除壞死組織，結合兩種黴菌藥物及葉克膜治療，兩名患者仍死於菌血症，可能與過久的加護病房治療有關。急性呼吸衰竭與同時氣道及肺實質皆受到麴菌感染是重要的預後因子。盡早藉由支氣管鏡評估、診斷與清瘡，結合兩種黴菌藥物治療及吸入性抗黴菌藥物，或許是能改善侵入性呼吸道麴菌感染的唯一方法。(胸腔醫學 2015; 30: 382-389)

關鍵詞：侵入性呼吸道麴菌感染

A Young Adult with Primary Signet Ring Cell Carcinoma of the Lung: A Case Report and Literature Review

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Primary signet ring cell carcinoma rarely occurs in the lung and is more commonly known to affect the stomach. In general, the prognosis of patients with signet ring cell carcinoma at any site is poor. We report the case of a 34-year-old man with chronic productive cough, chest pain, and low-grade fever; he was admitted to our institution with an initial diagnosis of pneumonia. After a few days of empirical antibiotic treatment, chest radiography showed no improvement, and acid-fast staining of the sputum was negative. Bronchoscopy revealed a tumor located in the left main bronchus, and histological examination demonstrated an adenocarcinoma with signet ring cell differentiation. The location of the tumor in the central bronchus was unusual, as a majority of lung adenocarcinomas localize in the peripheral region. Pathological examination of both the associated neck lymph node and pleural tissue revealed the same tumor histology. Tumor gene expression analyses were negative for EGFR mutation, ALK rearrangement, and K-ras mutation. We reviewed previously published reports on this rare tumor type in an attempt to identify potential treatment strategies. (*Thorac Med* 2015; 30: 390-396)

Key words: lung adenocarcinoma, signet ring cell, anaplastic lymphoma kinase

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一位年輕成年人原發性指環細胞型肺腺癌： 病例報告及文獻回顧

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原發性指環型細胞癌罕見發生於肺部，此類病理型態好發於胃。在一般情況下，在任何部位原發性指環型細胞癌，患者的預都很差。我們報告一個 34 歲的年輕人，以慢性咳嗽，胸痛，輕微發燒為表現。開始以疑似肺炎入院。經過幾天的抗生素治療，胸部 X 光片沒有改善且抗酸性痰塗片三套均為陰性。支氣管鏡檢查發現左主支氣管腫瘤，切片組織學表現腺癌合併指環型細胞分化。腫瘤位置侵犯靠近中央的支氣管，和大部分肺腺癌好發在周邊有所不同。頸部淋巴結，肋膜組織切片也呈現相同病理表現。腫瘤基因檢測 EGFR mutation, ALK rearrangement 以及 K-ras mutation 皆為陰性。我們回顧一些文獻介紹關於這種罕見腫瘤類型特點，並試圖找出有潛力的治療策略。(*胸腔醫學* 2015; 30: 390-396)

關鍵詞：肺腺癌，指環細胞，間變性淋巴瘤激酶

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