

Hyperbaric Oxygen Therapy is Safe — Mid-Taiwan Experience

Chung-Wen Hung, Te-Chun Hsia*, Liang-Wen Hang*, Wei-Erh Cheng,
Chuen-Ming Shih, Wu-Huei Hsu

Objective: To ascertain the medical safety and complications of hyperbaric oxygen (HBO) therapy in a medical center of Mid-Taiwan.

Methods: In all, 343 patients receiving a total of 6403 treatments with hyperbaric oxygen therapy for various indications, from April 2000 to December 2001, were retrospectively reviewed and analyzed. The patients underwent HBO therapy in a hyperbaric chamber after complete pre-HBO therapeutic evaluations, including medical history, physical examination, the protocols and doses of HBO, and duration and frequency of various diseases. Then we collected and recorded the data regarding complications after HBO therapy.

Results: The total complication rate was about 4.37% (15/343), including major complications such as ear barotrauma 2.33% (8/343), sinus barotrauma with epistaxis 0.58% (2/343), GI upset (abdominal fullness, nausea) 0.58% (2/343), visual hallucination 0.58% (2/343), and hypoglycemia 0.58% (2/343). No severe life-threatening complications occurred.

Conclusions: In our limited experience, HBO therapy was safe, with a low incidence of minor complications. Even though complications with HBO therapy occurred, they were all mild, and did not lead to life-threatening complications. (*Thorac Med* 2003; 18: 97-102)

Key words: HBO therapy, complications, barotrauma, oxygen toxicity

Hyperbaric Oxygen Therapy Center*, Division of Pulmonary and Critical Care Medicine, Department of Internal Medicine, China Medical College Hospital, Taichung, Taiwan

Address reprint request to: Dr. Te-Chun Hsia, Hyperbaric Oxygen Therapy Center, Division of Pulmonary and Critical Care Medicine, Department of Internal Medicine, China Medical College Hospital, 2, Yuh Der Road, Taichung, Taiwan

高壓氧治療是安全的一中台灣經驗

洪崇文 夏德椿* 杭良文* 程味兒 施純明 徐武輝

目的：探討在臺灣中部某醫學中心高壓氧治療的併發症和安全性。

方法：我們收集，觀察並評估從2000年4月到2000年12月間，共343個病患，依照各種不同的適應症，在經過完整的事前病史詢問和生理評估後，接受共6403次高壓氧治療的併發症。病患所接受的高壓氧治療其壓力範圍大多是在2到3個大氣壓力，治療時間從90分鐘到數小時，治療次數依病情和病患狀況而不同。然後我們觀察並統計治療期間病患所發生的併發症，包括各種壓力性損傷，氧氣中毒或其他的不舒服。

結果：在343個病患接受共6403次高壓氧治療，其併發症總發生率約4.37%。而氣傷約佔3.5% (其中耳氣傷2.33%，腹脹0.58%，鼻竇氣傷及流鼻血0.58%)，氧氣中毒佔0.58%，其他如低血糖佔0.58%。

結論：只要經過完整的事前病史詢問，生理評估，和了解高壓氧治療的禁忌症，並依照正常的高壓氧治療程序；高壓氧的治療是相當安全的，即使發生了併發症也只是輕微並不影響生命和治療的進行。

(*胸腔醫學* 2003; 18: 97-102)

關鍵詞：高壓氧治療，併發症，氣傷，氧氣中毒

CT-Guided Hook Wire Localization of Tiny Lung Nodules Expedites Thoracoscopic Resection

Tzu-Ping Chen, Yi-Cheng Wu, Hui-Ping Liu, Kee-Min Yeow*, Yun-Hen Liu,
Ming-Ju Hsieh, Pyng-Jing Lin

Background: Video-assisted thoracic surgery (VATS) has become a useful diagnostic and therapeutic tool for many thoracic surgical problems. However, there is still some potential limitation in the application of this new technology, especially for the excision of small indeterminate pulmonary nodules. We evaluated the efficacy of CT-guided hook wire fixation as a marker for localizing such lesions during thoracoscopic operations. The herein described localization technique has a low complication rate and can be recommended for patients with small lung nodules before VATS surgery.

Methods: Eight patients (4 male and 4 female), with lung nodules measuring less than 10 mm on the CT scan, underwent CT guided hook-wire localization preoperatively. Immediately after the wire fixation, the patients were sent to the operation room. During operation, all patients were placed in the lateral decubitus position under double-lumen intubated anesthesia. After localizing the lesion, another two incisions were made close to the lesion. An Wedge resection was performed smoothly without incident, using thoracoscopy and endoscopic staplers.

Results: All peripheral and deeply-seated small lung nodules were successfully localized by endoscopy, with the hook wire as a guide, and resected. The final diagnoses included lung cancer (n=1), metastatic thyroid cancer (n=1), metastatic breast cancer (n=1), and caseating granulomas (n=5). The average nodule resection time was only 10 minutes, and average hospital stay was 6 days. All the patients were discharged uneventfully.

Conclusions: Preoperative CT-guided wire fixation of peripheral and deeply-seated small lung nodules enhances the localization of the surgical target, which subsequently facilitates and expedites VATS wedge resection. The CT-guided hook wire localization of tiny lung nodules is safe and effective. (*Thorac Med* 2003; 18: 103-109)

Key words: lung nodule, video-assisted thoracic surgery, computed tomography, hook wire

Division of Thoracic and Cardiovascular Surgery, *Department of Diagnostic Radiology, Chang Gung Memorial Hospital, Taipei, Taiwan

Address reprint requests to : Dr. Yi-Cheng Wu, Division of Thoracic and Cardiovascular Surgery, Chang Gung Memorial Hospital, 5 Fu-Shing Street, Kweishan, Taoyuan, Taiwan 333

電腦斷層導引定位鉤加速胸腔鏡切除肺小結節

陳子平 吳怡成 劉會平 饒啟明* 劉永恆 謝明儒 林萍章

背景：內視鏡輔助胸腔手術在胸腔外科手術為一個有診斷及治療價值的工具，然而對於深部肺小結節的切除仍有其限制，於是我們評估利用電腦斷層導引定位鉤來輔助胸腔鏡手術的效用，並推薦對於有肺小結節的病人可藉此方法的幫助來進行胸腔鏡手術。

方法：八位(四男四女)有肺小結節(小於一公分)的病人，接受術前電腦斷層導引定位鉤定位，之後立即送往手術室進行內視鏡輔助胸腔手術切除含有肺小結節的部分肺葉。

結果：所有病人都成功地定位肺小結節並完成內視鏡輔助胸腔手術切除，最後的病理診斷為一位肺癌，一位轉移性甲狀腺癌，一位轉移性乳癌，五位乾酪性肉芽腫病變，平均手術切除時間十分鐘，平均住院日六天，術後病人沒有任何併發症並平順出院。

結論：術前電腦斷層導引定位鉤定位肺小結節，技術上可行並可加速內視鏡輔助胸腔手術的進行，它是一個安全可靠的方法。(《胸腔醫學》2003; 18: 103-109)

關鍵詞：肺部結節，內視鏡輔助胸腔手術，電腦斷層攝影，定位鉤

The Value of Carcinoembryonic Antigen in Differentiating Malignant from Benign Pleural Effusion

I-Jen Chen, Chang-Wen Chen*, How-Ran Guo**, Ming-Shian Lin, Tzuen-Ren Hsiue*

Objectives: Pleural effusion may result from both malignant and benign pulmonary conditions, and is very important in making the differential diagnosis. Some biomarkers in the pleural effusion may help the process. We conducted a study to evaluate the feasibility of using carcinoembryonic antigen (CEA), proportion of lymphocytes, and various biochemical parameters in pleural effusion to differentiate between benign and malignant diseases.

Materials and Methods: Samples of pleural effusion were obtained from 79 patients, including 21 with malignancies, 16 with paramalignant conditions, 19 with tuberculosis, and 23 with other benign diseases. CEA was measured using chemiluminescence immunoassay, and complete and differential cell counts were conducted by microscopic examination with Liu's stain. Biochemical parameters were measured with an autoanalyzer. In addition to the comparison of the benign and malignant groups, we also compared these parameters between patients with tuberculosis and those with malignancy, as both have exudative effusion with lymphocyte predominance.

Results: The CEA level was higher in patients with malignant effusion (76.3 ± 121.4 ng/ml vs. 1.9 ± 2.1 ng/ml, $p < 0.001$ with the Mann-Whitney U test) than in those with benign effusion. With a cut-off level of 10 ng/ml, the sensitivity and specificity of CEA for diagnosing malignancy were 0.65 and 0.98, respectively. Together with cytology, the sensitivity could be raised to 0.73.

Conclusion: The CEA assay of pleural effusion had an acceptable sensitivity and a high specificity in differentiating malignant from benign effusion. (*Thorac Med* 2003; 18: 110-115)

Key words: pleural effusion, carcinoembryonic antigen, pleural effusion

Department of Internal Medicine, Chia-Yi Christian Hospital, Chia-Yi, Taiwan

*Department of Internal Medicine, National Cheng-Kung University Hospital, Tainan, Taiwan

**Graduate Institute of Environmental and Occupational Health, College of Medicine, National Cheng-Kung University, Tainan, Taiwan

Address reprint requests to: Dr. Chang-Wen Chen, Department of Internal Medicine, National Cheng-Kung University Hospital, 138 Sheng-Li Rd., Tainan, Taiwan

癌胚胎抗原(CEA)於區分良性與惡性肋膜積水之應用價值

陳奕仁 陳昌文* 郭浩然** 林明憲 薛尊仁*

前言：良性或是惡性之肺部疾病都會導致肋膜積水，因此區分其病因是很重要的。我們試著去分析在肋膜積水中的癌胚胎抗原(CEA)，淋巴球所佔比例，及一些生化檢驗，看是否能從其中發現有助於區分良性或惡性疾病所引起的肋膜積水。

材料與方法：我們蒐集過去五年來的79個病例，包括21個惡性積水，16個惡性疾病引起的積水，19個結核性積水，及23個其他良性疾病引起的積水。癌胚胎抗原的測定是使用 chemiluminescence immunoassay。血球分類及計數是利用 Liu's stain 於顯微鏡下檢驗。生化值的測定則是利用自動生化分析器。除了良性與惡性疾病的比較外，由於結核性積水與惡性疾病的肋膜積水，都是屬於淋巴球為主的積水，我們也將肺結核與惡性疾病的肋膜積水加以比較。

結果：於惡性疾病積水的病例群中，癌胚胎抗原值的確較其他病例具有統計意義的升高。當設定癌胚胎抗原值為10 ng/ml時，其偵測惡性疾病的敏感性及特異性分別是0.65及0.98。若合併細胞學檢查使用時，其敏感性可進一步提升至0.73。

結論：分析肋膜積水中之癌胚胎抗原值，對於偵測惡性疾病時，能有可接受的敏感性及很高的特異性。(胸腔醫學2003; 18: 110-115)

關鍵詞：肋膜積水，癌胚胎抗原，肋膜積水

Different Mechanisms of Airway Hyperresponsiveness between Exercise and Methacholine-Induced Bronchoconstriction in Chronic Asthma

Meng-Hsien Lin, Jung-Chang Su, Chi-Hsien Cheng, Horng-Chyuan Lin ,
Chun-Hua Wang, Ling-Ling Chiang * , Han-Pin Kuo

Purpose: The aim of this study was to explore the different mechanisms of exercise-(EIB) and methacholine-(MIB) induced bronchoconstriction in patients with chronic asthma.

Methods: We measured the FEV₁, recovery time (RT), and AUC_{0-60 min} (area under the curve from 0 to 60 min after exercise in FEV₁) in 41 asthmatics, who received exercise and methacholine challenge tests.

Results: Among these asthmatics, 12 asthmatics had EIB and 29 had no EIB. The recovery time was prolonged (109.2 ± 26.5 min, $n=11$, $p<0.001$) and AUC_{0-60 min} was larger (1201.0 ± 70.0 % · min, $p<0.0001$) in the EIB group, compared to the non-EIB group (RT : 36.9 ± 5.9 min; AUC : 328.0 ± 28.0 % · min, respectively, $n=28$). There was no difference in AUC and RT after methacholine-induced bronchoconstriction between the EIB and non-EIB groups (1136.0 ± 115.8 versus 1121.0 ± 122.7 % · min, $p=0.936$; 111.5 ± 14.2 versus 106.0 ± 14.3 min, $p=0.757$). There was no significant correlation between the magnitude of AUC induced by exercise test or methacholine challenge ($r=0.24$)

Conclusion: We suggested that there were different mechanisms between EIB and MIB. The delayed bronchodilation in the EIB asthmatic subjects was probably related to presence of bronchoconstrictors. (*Thorac Med* 2003; 18: 116-123)

Key words: exercise-induced bronchoconstriction, methacholine-induced bronchoconstriction, asthma, recovery time, area under curve

Department of Thoracic Medicine II, Chang Gung Memorial Hospital, *Instructor, School of Respiratory Therapy, Taipei Medical University, Taipei, Taiwan
Address reprint requests to: Dr. Han-Pin Kuo, Department of Thoracic Medicine II, Chang-Gung Memorial Hospital, 199, Tun-Hwa N, Rd, Taipei, 105, Taiwan

慢性氣喘病人在運動 (exercise) 誘發性 或醃丑甲基膽鹼 (methacholine) 誘發性氣道收縮下， 有不同的氣道過度反應機制

林孟賢 蘇榮璋 鄭志賢 林鴻銓 王圳華 江玲玲* 郭漢彬

此次研究目的主要是探索慢性氣喘病人，在運動及醃丑甲基膽鹼(methacholine)誘發性氣道收縮下，有不同的氣道過度反應機制。選取 41 個慢性氣喘病人接受運動誘發性氣道收縮，及膽鹼誘發性氣道收縮測試。在測試前及測試後 0、5、10、15、30、45、60、75 分鐘內，我們記錄用力吐氣第一秒量(FEV1)；並計算其在六十分鐘內，用力吐氣第一秒量之減少量百分比與時間曲線下的面積(AUC0-60 min)，以及計算由最低用力吐氣第一秒量(maximum FEV1 decrease)開始，到回復 95 % 用力吐氣第一秒量基準量所需要的時間 (Recovery time)。在 41 個受試者中，有 12 個有運動誘發性氣道收縮，29 個沒有運動誘發性氣道收縮。結果發現，有運動誘發性氣道收縮的受試者，其 AUC 0-60 min 以及 recovery time 皆比沒有運動誘發性氣道收縮的受試者來的高 (1201.0 ± 70.0, n=12 versus 328.0 ± 28.0 % · min, n=29, p<0.0001; 109.2 ± 26.5, n=11 versus 36.9 ± 5.9 min, n=28, p<0.0001)。這兩群 [EIB(+) and EIB (-)] 在接受膽鹼誘發性氣道收縮測試後，AUC 0-60 min 以及 recovery time 皆無顯著差別 (1136.0 ± 115.8 versus 1121.0 ± 122.7 % · min, p= 0.936; 111.5 ± 14.2 versus 106.0 ± 14.3 min, p=0.757)。此外，比較運動誘發性或醃丑甲基膽鹼誘發性氣道收縮 AUC 0-60 min，發現並無明顯的正相關 (r=0.24)。因此，藉由比較運動或醃丑甲基膽鹼誘發性氣道收縮後，兩者用力吐氣第一秒量之減少量百分比與氣道擴張回復時間的差異性，推測兩者應該有不同的氣道過度反應機制。(胸腔醫學2003; 18: 116-123)

Seasonal Variation of Hospital Emergency Visits and Hospitalizations of Patients with Asthma and Chronic Obstructive Pulmonary Disease

Lu-Cheng Kuo, Wen-Jone Chen*, Pan-Chyr Yang, Sow-Hsong Kuo

Background: The morbidity caused by asthma has been found to have seasonal periodicity. Less is known about the seasonal variability of morbidity in chronic obstructive pulmonary disease (COPD). The aim of this study was to determine the seasonal periodicity trend in hospital emergency visits and hospitalizations of patients with asthma and COPD with acute exacerbation.

Materials and Methods: The data of emergency visits and hospitalizations of patients with an acute exacerbation of asthma and COPD at the National Taiwan University Hospital from January 1995 through December 2000 were analyzed.

Results: The frequency of emergency visits because of asthma did not increase in this 6-year period. The increasing hospitalizations-to-emergency visit ratio, moving from 0.17 to 0.29, indicated an increasing severity of asthma in this study period. The number of emergency visits and hospitalizations of patients with COPD steadily increased in the corresponding period. The ratio of hospitalizations to emergency visits ranged from 0.92-1.41, indicating that most COPD with acute exacerbation required hospitalization for further management. Seasonality of morbidity could be found in both asthma and COPD, with a greater seasonal variation for asthma than for COPD. There were more exacerbations observed in the winter and fewer during the summer for both diseases. Among different age groups, similar patterns were documented but with different magnitudes, particularly regarding hospitalizations in the older age group (≥ 65 years).

Conclusion: The morbidity of asthma and COPD reveals a seasonal variation in Taipei City. This pattern is more obvious in younger patients and in patients with asthma. (*Thorac Med* 2003; 18: 124-131)

Key words: asthma, chronic obstructive pulmonary disease, seasonality, emergency visit, hospitalization

Department of Internal Medicine Emergency Medicine, National Taiwan University Hospital*
Address reprint requests to: Dr. Sow-Hsong Kuo, Department of Internal Medicine, National Taiwan University Hospital,
No. 7, Chun-Shan South Road, Taipei, Taiwan

氣喘及慢性阻塞性肺疾病患之急診及住院的季節性變化

郭律成 陳文鍾* 楊泮池 郭壽雄

前言：根據過去之研究，各國兒童氣喘罹病率皆有顯著的季節性變化。至於成人氣喘及慢性阻塞性肺疾之罹病率的季節性變化則較少報告。本研究之目的為探討此兩種疾病之急診及住院的季節性變化。材料與方法：分析台大醫院 1995 至 2000 年之氣喘及慢性阻塞性肺疾病患因急性惡化到醫院急診及住院人次，並依每月日數計算其平均數，再區分成數個年齡層，探討其季節性變化的趨勢。其中慢性阻塞性肺疾因 35 歲以下病人數甚少，且有時診斷不易確定，因而不計在內。結果：氣喘病人之急診人次在六年間似無明顯增加，但住院人次則增加 69%。氣喘病人住院與急診人次之比例在 1995 年是 0.17，而在 2000 年則增加為 0.29。依此觀之，氣喘惡化之嚴重度似乎有逐年增加之趨勢。至於慢性阻塞性肺疾之急診就醫率和住院率則皆呈逐年上升之勢，六年間分別增加 80% 和 176%。其住院與急診人次之比例在 1995 年為 0.92，在 2000 年則為 1.41。可見絕大部分慢性阻塞性肺疾病患因急性惡化到急診就醫者絕大部分都需住院做進一步治療，甚至有不少病患是經由門診住院。氣喘之季節性變化較慢性阻塞性肺疾為明顯，在急診及住院方面皆有相同之趨勢。兩者之發作尖峰在冬季出現，而夏季較少發作。在各種不同年齡層，都有類似的變化，但是在程度上略有差異，年齡小者隨季節起伏較大，年紀大者起伏較小，尤其是 365 歲之慢性阻塞性肺疾者，其住院之季節性變化較不明顯。結論：氣喘及慢性阻塞性肺疾之急性發作具有明顯的季節性變化，在冬季較多、夏季較少。此一季節性變化在氣喘比慢性阻塞性肺疾更明顯，年齡較低者與年長者相比，前者的變化趨勢較為明顯。 (*胸腔醫學* 2003; 18: 124-131)

關鍵詞：氣喘、慢性阻塞性肺疾、季節性、急診、住院

Simple Washing Compared to Dithiothreitol (DTT) Method as a Better Method to Preserve Neutrophil Activity in Induced Sputum

Hornng-Chyuan Lin, Cha-Chun Tang, Ming-Shung Wu, Kuo-Shiung Huang,
Han-Pin Kuo, Chih-Teng Yu

Treatment of sputum with dithiothreitol (DTT) is widely used as a reliable measurement of cellular and fluid-phase biochemical markers of airway inflammation. However, the cytotoxic effect of DTT may damage the cell membrane and then interfere with surface biochemical markers or intracellular metabolism. We investigated the extent to which DTT treatment influences neutrophil activities as compared with a method by simple washing with 3 aliquots of 9 ml of Hank's buffer salt solution+10% fetal calf serum (HBSS) through a nylon mesh to retrieve cells in the sputum samples. Hypertonic (3%) saline-induced sputa, collected from 5 bronchiectasis subjects, were examined within 2 h. All portions which looked more solid (less fluidy) than saliva were collected from the expectorate. The selected sputum was then divided into two portions: one treated with one volume of DTT plus one volume of phosphate buffered saline (PBS), the other treated with HBSS. The filtrates were assessed blind for total and differential cell count, as well as viability. The expression of surface molecules, CD11b, CD18 and intracellular oxidative metabolism of neutrophils were determined by flow-cytometry. Sputum treated with DTT in a concentration greater than 1% had lower proportions of viable cells compared with HBSS. In contrast, there were more cellular counts retrieved by DTT-treatment. There was no significant difference in the proportion of eosinophils, neutrophils, lymphocytes, or macrophages between two methods. DTT depressed the levels of CD11b, CD18 expression on neutrophils retrieved from either sputum [78.2±15.7 mean fluorescence intensity (MFI) and 73.5±17.5 MFI, respectively, n=5, P<0.05] or peripheral blood (26.4±2.0 and 20.9±1.0 MFI, respectively, n=6, P<0.05) compared with those by simple washing method (250.2±30.4 and 220.0±22.6 MFI, respectively for sputum; and 50.6±2.8 and 51.1±2.0 MFI, respectively, for peripheral blood). DTT, but not simple washing method, also depressed the lipopolysaccharide-induced cytokines release from neutrophils. There was no significant difference in intracellular oxidative metabolism between two treatments. We conclude that simple washing with HBSS compared with DTT method preserves cell membrane surface molecules and cellular activity in retrieving neutrophils from induced sputum samples. (*Thorac Med* 2003; 18: 132-140)

Key words: dithiothreitol, simple washing method, induced sputum, airway inflammation

Department of Thoracic Medicine II, Chang Gung Memorial Hospital, Taipei, Taiwan
Address reprint request to: Dr. Chih-Teng Yu, Department of Thoracic Medicine II, Chang Gung Memorial Hospital,
199 Tun-Hwa N. Rd., Taipei, Taiwan.

簡單重複沖洗法是比 dithiothreitol (DTT) 法更能維持引痰痰液中之嗜中性白血球活性的方法

林鴻銓 唐家駿 吳明勳 黃國雄 郭漢彬 余志騰

痰液以 Dithiothreitol (DTT) 處理法是廣泛用作呼吸道發炎時，痰液及其細胞的可靠測量標識。然而，DTT 的細胞毒性會影響會損壞痰液細胞膜，然後妨礙細胞膜表面生物化學標識或者細胞內的新陳代謝。本研究則是探討 dithiothreitol (DTT) 法對嗜中性白血球活性影響程度，並比較用簡單重複沖洗法的好處。簡單重複沖洗法是重複用 3 毫升 Hank's buffer salt solution+10% 小牛胎兒血清 (HBSS) 重複沖洗引痰痰液 3 次，然後透過一個尼龍網來分離嗜中性白血球的一個簡單方法。我們利用 3% 食鹽水，從 5 個支氣管擴張病人呼吸道引痰，一部份引痰痰液以 dithiothreitol (DTT) 法來取得痰液及其細胞，一部份引痰痰液以則以簡單重複沖洗法處理。然後計算引痰痰液細胞計數及其生存能力，並用流動細胞分析儀 (flowcytometry) 測嗜中性白血球之表面粘著分子，CD11b, CD18 和 neutrophils 的細胞內的氧化新陳代謝的表現。在兩個方法之間，eosinophils, neutrophils, lymphocytes, 或者 macrophages 的比例中沒有重要差別。DTT 明顯的降低引痰痰液和血液中嗜中性白血球 CD11b 和 CD18 的表現，而簡單重複沖洗法則較佳的保存嗜中性白血球 CD11b 和 CD18 的表現。DTT 也較簡單重複沖洗法明顯的降低 lipopolysaccharide 引起的嗜中性白血球細胞激素的分泌。在兩個處理在細胞內的氧化新陳代謝中沒有重要差別。我們得出如下結論，HBSS 的簡單重複沖洗法 is 比 dithiothreitol (DTT) 法能維持引痰痰液中之嗜中性白血球表面分子和細胞活性的一個更好的方法。(胸腔醫學 2003; 18: 132-140)

關鍵詞：dithiothreitol，簡單重複沖洗法，引痰，呼吸道發炎

Radiation Recall Dermatitis Induced by Gemcitabine — A Case Report

Pi-Sheng Wang, Yuh-Min Chen, Reury-Perng Perng

Radiation recall dermatitis refers to an inflammatory skin reaction at a previously irradiated area subsequent to drug administration. We present a case with stage IV adenocarcinoma of the lung, who developed radiation recall dermatitis after chemotherapy with gemcitabine. This is one of a few reported cases of radiation recall dermatitis induced by gemcitabine. The mechanism of this phenomenon is still unclear. Discontinuation of the precipitating drug is the general concept in management. The efficacy of systemic/topical steroids or antihistamines remains unclear. Radiation recall dermatitis should be considered when patients undergoing chemotherapy develop skin lesions at a previously irradiated site that showed no evidence of disease progression. (*Thorac Med* 2003; 18: 141-144)

Key words: radiation recall dermatitis, lung cancer, chemotherapy, gemcitabine

放射治療復甦性皮膚炎—病例報告

王必勝 陳育民 彭瑞鵬

放射治療復甦性皮膚炎是指病患接受藥物治療後在原先接受放射治療的部位產生的皮膚發炎性病變。本文描述一個第四期肺腺癌病人在接受 gemcitabine 之化學治療後發生放射治療復甦性皮膚炎的現象。這是少數 gemcitabine 引起的放射治療復甦性皮膚炎病例報告之一。這個現象的機轉目前還不清楚。

停用引發此一現象的藥物是治療的原則。而全身或局部的類固醇或抗組織胺的效用也還不清楚。當病患接受化療後在原先接受放射治療的部位產生皮膚病變，而又沒有證據顯示是轉移時，放射治療復甦性皮膚炎應列入考慮。(胸腔醫學2003; 18: 141-144)

關鍵詞：放射治療復甦性皮膚炎，肺癌，化學治療，gemcitabine

Acute and Lethal Cyanide Poisoning — A Near-Drowning Accident in Cyanide Tank

Ching Ho Tsai, Yu-Chin Lee, Diahn-Warnng Perng

Cyanide disrupts the functional electron transport chain and the ability of cells to utilize O₂ in the process of oxidative phosphorylation, leading to an anaerobic metabolism and lactic acidosis. Herein, we present a case of severe cyanide intoxication. A 21-year-old young male was nearly drowned in a cyanide pool after falling into it. At a local hospital 30 minutes later, he appeared to have lost consciousness and was without spontaneous breathing. After cardiopulmonary resuscitation, he was intubated and assisted with mechanical ventilation and transferred to our emergency room. Cyanide antidotes were given and intensive care to maintain cardiopulmonary function was provided. Unfortunately, progressive deterioration of the renal function accompanied with high levels of lactate and creatine kinase was observed. Blood gas analysis revealed a decreased difference in arterio-venous O₂ saturation. The patient expired 29 days after admission because of multiple organ failure secondary to cyanide intoxication. This is a very rare case of acute and lethal cyanide intoxication. The experience with clinical observation and treatment in this case may be of value to manage such patients in the future. (*Thorac Med* 2003; 18: 145-149)

Key words: cyanide intoxication, anaerobic metabolism, lactic acidosis, cyanide antidote

急性、致死性氰化物中毒— 一個溺入氰化物儲存槽的意外事件

蔡清和 李毓芹 彭殿王

氰化物會打斷粒線體的正常電子傳遞鏈，導致細胞無法在氧化磷酸化過程使用氧，造成厭氧代謝和乳酸酸血症。這裡我們提出一個嚴重氰化物中毒的病例。一個21歲青年意外落下溺入氰化物的儲存槽，30分鐘後在地區醫院已無意識及自發呼吸。心肺復甦術急救、氣管插管接上呼吸器後送到我們急診室。給予氰化物解毒劑，並在加護病房照顧。不幸的是，腎功能伴隨高乳酸及肌酸酐激酶繼續的升高惡化，且血液氣體分析顯示動靜脈氧氣飽和度差減少。在住院後第29天，死於因氰化物中毒引起的多器官衰竭。這是一極為罕見致死性氰化物中毒的急症。從這病患的臨床觀察及治療，將使我們獲得更多寶貴經驗，利於爾後的治療。 (*胸腔醫學*2003; 18: 145-149)

關鍵詞：氰化物中毒，厭氧代謝，乳酸酸血症，氰化物解毒劑

Ultrasonographic Characteristics in a Primary Liposarcoma of the Anterior Mediastinum with Tumor Emboli and Infarction

Chih-Hsin Lee, Hao-Chien Wang, Yih-Leong Chang*, Yuang-Shuang Liaw

We report a case of primary liposarcoma of the anterior mediastinum, a relatively uncommon neoplasm, in which the ultrasonographic findings were characteristic. A 46-year-old man was found to have a huge mediastinal mass during a health check-up. On the gray scale ultrasonography, the tumor appeared fine in texture. The echogenicity of the tumor was heterogeneous and hyperechoic. The Doppler study of the blood vessels in the tumor exhibited a characteristic low-impedance high-velocity flow pattern (peak systolic velocity 0.73 m/sec, resistive index 0.46, pulsatility index 0.62). He then underwent a total excision of the tumor. The histological examination revealed a well-differentiated liposarcoma of a lipoma-like subtype with scattered tumor emboli resulting in areas of infarction. In summary, a mediastinal tumor showing high echogenicity and a fine texture on gray scale ultrasonography and a low-impedance high-velocity flow pattern on Doppler imaging is highly suggestive of a liposarcoma. (*Thorac Med* 2003; 18: 150-154)

Key words: liposarcoma, mediastinum, ultrasonography, Doppler

Department of Internal Medicine and Pathology*, National Taiwan University Hospital, Taipei, Taiwan
Address reprint requests to: Dr. Yuang-Shuang Liaw, Department of Internal Medicine, National Taiwan University Hospital, 7, Chung-Shan South Road, Taipei, Taiwan

縱膈腔原發惡性脂肪肉瘤伴隨腫瘤血管栓塞 之獨特超音波影像學特徵

李枝新 王鶴健 張逸良* 廖永祥

原發於縱膈腔之惡性脂肪肉瘤是十分罕見的病例，僅佔所有縱膈腔腫瘤的百分之一不到，而其預後主要決定於病理組織學型態。灰階及都普勒 (Doppler) 超音波影像學目前廣泛應用於各種胸腔疾患的診斷，然而縱膈腔原發惡性脂肪肉瘤的超音波影像學表現，過去則尚無文獻報告。在本病案報告中，我們描述了一個縱膈腔原發惡性脂肪肉瘤之獨特超音波影像學特徵及其與相對之放射影像學和病理組織學表現的關聯性。該病患為四十六歲男性，於健檢時由胸部 x 光片檢出一個巨大的縱膈腔腫瘤。灰階超音波影像中，該腫瘤之質地十分細密，呈現出高迴音強度及異質性的特徵，這樣的表現在其它的胸部病灶是十分罕見的。彩色都普勒超音波影像檢查下，其中心部血流信號相當少，而周邊部之血流信號型態呈現典型的「高速低阻抗流動型態」，收縮期尖峰流速 (peak systolic velocity) 為 0.73 米 / 秒，阻抗指數 (resistive index) 為 0.46，脈衝指數 (pulsatility index) 則為 0.62，此「高速低阻抗流動型態」為惡性腫瘤血管之特異表現，用來分別良性或惡性腫瘤有很好的鑑別力。電腦斷層掃描發現該腫瘤有被膜包覆，其訊號衰減約等同於皮下脂肪組織。病患接受腫瘤全切除術。該腫瘤尺寸約 23 x 23 x 7 公分見方，組織學表現為分化良好之惡性脂肪肉瘤、類脂肪瘤亞型 (lipoma-like subtype)，光學顯微鏡下可見脂肪母細胞及未分化之巨核細胞散在分化良好之脂肪中，血管壁處處可見腫瘤細胞浸潤及栓塞，相鄰於血管栓塞部之腫瘤呈現廣泛的栓塞及壞死。總結以上發現，縱膈腔惡性脂肪肉瘤之超音波影像學表現十分特殊，並和放射影像學及病理組織學之表現有很好的關聯性，應用於縱膈腔惡性脂肪肉瘤有很高的診斷價值，縱膈腔腫瘤若在超音波影像學中表現出細質地、高迴音強度、異質性、高速低阻抗血流型態的特徵，應於鑑別診斷中優先考慮惡性脂肪肉瘤。 (胸
腔醫學 2003; 18: 150-154)

關鍵詞：脂肪肉瘤，縱膈腔，超音波，都卜勒

Significant Low Mortality Rate in Patients with Community — acquired *Acinetobacter* Pneumonia and Septicemia — Report of Four Cases within One Year at MMH

Ying-Wen Yang, Chao-Hsien Lee Yen-Ta Lu, Chien-Liang Wu, Pei-Jan Chen,
Hsu-Tah Kuo,

Acinetobacter species are encapsulated aerobic Gram-negative coccobacilli ubiquitous in fresh water and soil. They are usually skin contaminants and are found in the oropharynx of up to 7% of healthy individuals, and always cause nosocomial infections in elderly patients, and in intensive care units. CAP caused by *Acinetobacter* is quite rare. The most commonly clinical presentations are rapid onset fever, dyspnea, pleuritic chest pain, and cough. *Acinetobacter*-associated CAP usually results in a fulminant course with a mortality rate ranging from 40-60%.

Between November 2000 and November 2001, we reported four cases who admitted to Mackay Memorial Hospital and presented with a *Acinetobacter* CAP and septicemia. There were two men and two women, with a mean age of 70 years. These patients had chronic pulmonary diseases, two patients were smokers, one patient had diabetes mellitus, and one patient asthma. All patients had positive blood culture results. Leukocytosis was present in three patients and lobar consolidation was the predominant radiologic pattern in all of the patients. All the patients survived following the appropriate antibiotic treatment. We also found that leukopenia, alcohol abuse, and inadequate antibiotics therapy might be associated with increased mortality.

CAP caused by *Acinetobacter* species is often associated with underlying conditions, such as chronic pulmonary disease, cigarette smoking, diabetes mellitus, renal disease and old age. The combination of a third-generation cephalosporin, plus an aminoglycoside, may be the empirical treatment of choice. (*Thorac Med* 2003; 18: 155-162)

Key words: *Acinetobacter*, community-acquired pneumonia

社區性 Acinetobacter 肺炎 合併敗血症極低死亡率的病例報告 —馬偕醫院回顧一年的探討

楊英文* 李昭賢 呂衍達 吳健樑 陳培然 郭許達

Acinetobacter 是有包膜需氧革蘭氏陰性菌，一般存於土壤及淡水中，亦常存在於皮膚，且在一般人口中 7% 含有此菌，它們常常造成院內感染，尤其在老年人或加護單位。然而，造成社區性的感染相當罕見，臨床上最常見的症狀包括發燒、喘、胸痛及咳嗽，其病程常是急性且死亡率相當高。

在 2000 年十一月至 2001 年十一月間，於馬偕醫院共收集到四位感染 Acinetobacter 造成的社區性肺炎，兩位男性，兩位女性，平均年齡 70 歲，血液培養均為陽性反應，且經過適當的抗生素治療；四位個案中，均有慢性阻塞性肺疾病，一位糖尿病、一位腎臟衰竭，兩位吸煙，但均無喝酒。在住院過程中，兩位產生敗血症休克及呼吸衰竭，並需於加護單位使用呼吸器治療。四位個案經過積極治療後，均能康復出院。我們發現白血球減少、酗酒及不正確診斷或抗生素治療是造成死亡率居高不下的原因。

Acinetobacter 所造成的社區性肺炎，病人通常有慢性疾病，如慢性阻塞性肺疾病、糖尿病、腎臟病，並常發生於老年人。病情雖然急性且致死，但是只要及早積極性的抗生素治療，死亡率是可以降低的。一般常用的抗生素是第三代的 Cephalosporin 加上 Aminoglycosides 為治療的基本原則。(*胸腔醫學*2003; 18: 155-162)

關鍵詞：Acinetobacter，社區性肺炎

Familial Aggregation of Lung Cancer in Taiwan — A Report of Three Family Cases and Review of the Literature

Chih-Hung Lin, Yuh-Min Chen, Chun-Ming Tsai, Ruery-Perng Perng

Although familial aggregations of lung cancer have been reported since 1963 in the United States, it has been rarely documented in Taiwan. With the improvement in diagnostic techniques and public health, familial aggregations have been found in increasing frequency in recent years. Thus, we studied six cases in three families, diagnosed in the most recent two years, to discuss the roles of shared environmental risk factors and possible genetic susceptibility in these families. In these cases, shared lifestyles, environmental risks, and inherent components may possibly have contributed to the familial aggregations. For the early detection of lung cancer and a decrease in the mortality rate, it is suggested that high-risk individuals be identified with the aid of molecular biology, especially genomic or proteomic studies, so that early education, regular screening, and close medical follow up can be performed in these high-risk patients. (*Thorac Med* 2003; **18: 163-168**)

Key words: familial aggregation, lung cancer

Chest Medicine Section, Taipei Municipal Gandau Hospital and the Department of Chest Medicine, Taipei Veterans General Hospital, Taipei, Taiwan

Address reprint requests to: Dr. Chih-Hung Lin, Department of Chest Medicine, Taipei Veterans General Hospital, No. 201, Section 2, Shih-Pai Road, Taipei, 11217, Taiwan

肺癌的家族聚集性—三個家族的病例報告及文獻回顧

林志鴻 陳育民 蔡俊明 彭瑞鵬

雖然肺癌的家族聚集性在美國自一九六三年就有報告，在臺灣卻罕有文獻記載。近幾年來因診斷技術及公共衛生進步，肺癌的家族聚集性被發現有增加的趨勢。因此我們收集在近二年來診斷的三個家族共六個病例，來討論他們的共同環境危險因子及可能的基因感受性。在我們的個案中，生活方式及環境的危險因子，特別演重要的角色。而遺傳的成份，可能只有次要的地位。今後如果要早期發現肺癌及降低其死亡率，我們建議應藉由分子生物學，特別是基因及蛋白質表現的研究，分辨出肺癌的高危險群，提供他們早期的教育，規則的篩檢及醫療追蹤。 (*胸腔醫學* 2003; 18: 163-168)

關鍵詞：家族性聚集，肺癌

Lung Abscess with Empyema and Liver Abscess — A Rare Complication after a Gynecologic Surgery- A Case Report

Wen-Yeh Hsieh, Chiao-Hsien Lee, Pei-Jan Chen

We describe an unusual case of lung abscess complicated with empyema and liver abscess after a gynecologic operation. A 46-year-old previously healthy woman was admitted for laparotomy and lysis of a pelvic adhesion on a myoma uteri. Two weeks after surgery, this patient presented with a cough, fever, and right pleuritic chest pain. Later, pulmonary and liver lesions developed. Frank pus aspirated from the right-side empyema via echo-guided thoracocentesis grew *Bacteroides fragilis*. The empyema, lung and liver abscesses resolved after prolonged antibiotic therapy, combined with adjuvant surgical drainage for the empyema. The patient remained well during outpatient follow-up. (*Thorac Med 2003; 18: 169-174*)

Key words: lung abscess, liver abscess, empyema, *Bacteroides fragilis*, gynecologic surgery

肺膿瘍併膿胸與肝膿瘍之病例報告 —婦產科術後的罕見併發症

謝文郁 李昭賢 陳培然

我們提出一個罕見於婦產科術後的病例—肺膿瘍併膿胸與肝膿瘍。一位 46 歲健康女性因為子宮肌瘤入院接受手術治療，手術後 2 週發生咳嗽、發燒以及胸痛等症狀，之後更出現肺與肝的病灶。透過超音波導引胸膜液穿刺術顯示其胸膜積液為膿胸，且其後細菌培養結果為 *Bacteroides fragilis*。患者接受抗生素藥物治療並配合膿胸手術引流，病情好轉，並且完全康復。 (*胸腔醫學* 2003; 18: 169-174)

關鍵詞：肺膿瘍，肝膿瘍，膿胸，*Bacteroides fragilis*，婦科手術

Hereditary Coagulopathy Antithrombin III Deficiency Complicated with Pulmonary Embolism — A Case Report

Woei-Horng Chai, Ming-Tai Lin, Kian-Choon Soon, Ching-Hsiung Lin

Hereditary coagulopathy complicated with pulmonary embolism is uncommon clinically. The disease should be considered in young adults with coagulopathy and progressive unexplained dyspnea. We report a 20-year-old young man who was admitted due to episodes of exercise intolerance, hemoptysis and progressive dyspnea. The chest X-ray and bronchoscopy were normal, and the laboratory survey showed D-dimer >2000ng/dl. The perfusion scan revealed an extensive left lower lobe perfusion defect but the ventilation scan was normal. Pulmonary angiography disclosed a left lower pulmonary artery filling defect, which confirmed the diagnosis of a pulmonary embolism.

Antithrombin III, protein C and protein S were checked in this patient due to his having a pulmonary embolism at such a young age. The antithrombin III level was 48.8% (normal range: 75~125%). We screen the antithrombin III level of his family, since antithrombin III deficiency has a highly-inheritable tendency. We found that his grandfather, father, uncle, aunt and younger sister all had an antithrombin III deficiency. (*Thorac Med* 2003; 18: 175-180)

Key words: antithrombin III deficiency, pulmonary embolism

遺傳性抗凝蛋白酵素缺乏症併發肺栓塞一病例報告

蔡偉宏 林明泰 孫健聰 林慶雄

遺傳性凝血病變併發肺栓塞在臨床上並不常見。在年輕之患者若遇有無法解釋之氣促、呼吸困難同時合併有凝血病變時必須考慮到此疾病。我們的病例報告：一位 20 歲年輕役男，其症狀為運動耐受力下降，咳血和漸進性呼吸困難。在本院予以胸部 X 光檢查及支氣管鏡檢查但無發覺明顯病灶。檢測丁二聚物 (D-dimer) 大於 2000ng/dL，因此安排肺部灌注和肺部通氣核子醫學掃描檢查，結果檢查發現左下肺部肺葉呈現大片灌注缺損，而肺部通氣掃描檢查則正常，後來經肺動脈血管攝影檢查證實了左下肺動脈栓塞。

追溯病人家族史，發現病人親叔叔在年輕時曾罹患腸阻塞。而這位年輕人因證實有肺栓塞加上家族史為陽性，所以予病人檢測抗凝蛋白酵素、蛋白質 C 及蛋白質 S，結果發現抗凝血蛋白酵素為 48.8% (正常值 75~125%)。由於抗凝蛋白酵素缺乏症具有高度遺傳傾向，所以我們也篩檢了病患其他親屬，結果發現病患之祖父、父親、叔叔、姑姑和妹妹都是抗凝蛋白酵素缺乏症患者。 (*胸腔醫學* 2003; 18: 175-180)

關鍵詞：抗凝蛋白酵素缺乏症，肺栓塞

Tracheoesophageal Fistula Caused by Candidiasis — A Case Report

Hung-I Lu, Ming-Jang Hsieh, Chao-Cheng Huang*, Jen-Ping Chang

Tracheoesophageal fistulas (TEF) caused by *Candida* infection are rare. Acquired tracheoesophageal fistulas are severe lesions leading to serious and ultimately fatal pulmonary complications. Treatment is made difficult by need to manage the consequences of esophagotracheal communication and of the illness responsible for the fistula. This report describes a 53-year-old man who presented with frequent choking and coughing with bloody sputum for one week. The esophagogram and bronchoscopy revealed a tracheoesophageal fistula at the level of the second thoracic vertebra. A full sternotomy was performed with one-stage esophageal repair combined with tracheal resection and anastomosis. The TEF was closed and the patient recovered well. Pathologic examinations of the TEF and trachea displayed an ulcer with candidiasis. No recurrence of fistula was detected during follow-up. (*Thorac Med* 2003; 18: 181-186)

Key words: tracheoesophageal fistula, candidiasis

Department of Thoracic and Cardiovascular Surgery Department of Pathology*, Chang Gung Memorial Hospital, Chang Gung University, Kaoshiung, Taiwan

Address reprint requests to: Dr. Hung-I Lu, Department of Thoracic and Cardiovascular Surgery, Chang Gung Memorial Hospital, 123, Ta Pei Rd., Niao Sung Hsiang, Kaohsiung Hsien, 83305, Taiwan

念珠菌感染導致氣管食道瘻管之病例報告

呂宏益 謝敏暉 黃昭誠* 張仁平

念珠菌感染導致氣管食道瘻管極為罕見。一般而言，非惡性腫瘤導致之後天性氣管食道瘻管，主要的致病機轉為醫源性、外傷性、或感染性等病因所形成。其中又以氣管內管置入或長期氣切管置入等醫源性病因最為常見。而感染性病因如結核菌、念珠菌或病毒感染等病因則相當少見。食道的念珠菌感染很少發生在免疫能力正常的人身上，但是一旦感染後延誤診斷及治療時機，仍會導致食道出血、狹窄、或是與呼吸道的瘻管等嚴重的併發症。

本病例經食道攝影及支氣管鏡檢查診斷為中段氣管食道瘻管；藉由氣管食道瘻管及氣管的病理切片檢查證實為念珠菌感染。經施予瘻管切除及食道修補手術，合併感染段氣管切除及吻合手術，再輔以肌肉皮瓣覆蓋，隔離食道及氣管吻合處以防瘻管復發等治療後痊癒。

此種非結核菌感染性病因所致之後天性氣管食道瘻管，在治療上除了先予以感染控制及營養支持外，在病況允許下仍應以根除性外科治療為主，以達較佳之治療效果。 (*胸腔醫學*2003; 18: 181-186)

關鍵詞：念珠菌感染，氣管食道瘻管