specimens from patients with lung cancer and diffuse infiltrative patterns. This method seems also to be helpful for the diagnosis of bronchoalveolar carcinoma.\(^8\)

We concluded that the addition of BAL cytologic examinations in peripheral lung lesions might occasionally increase the diagnostic yield of bronchoscopy and spare some patients unnecessary invasive procedures.\(^9\,10\) This diagnostic technique seems especially indicated in lung cancer with an infiltrative X-ray pattern.

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Chickenpox and Pneumothorax

To the Editor:

A 35-year-old woman with chickenpox presented with the sudden onset of right chest pain and dyspnea. Four days before admission, she developed fever, malaise and a diffuse red macular rash. The rash rapidly progressed from macules to papules, vesicles, pustules and crust formation. There was no history of trauma, obstructive pulmonary disease or previous dyspnea. She had a 10 pack/year smoking history.

Respirations were 28 per min. The characteristic lesions of chickenpox covered the skin. Right lung field breath sounds were decreased, the remainder of the physical examination was normal. The only laboratory abnormality was a white blood cell count of 7.8 c/dll with 47 percent banded forms. Chest x-ray examination showed a 40 percent right tension pneumothorax. There was no radiographic evidence of pneumonia or chronic obstructive pulmonary disease. Electrocardiogram was normal.

A chest tube was inserted and placed to closed water sealed suction. Chest x-ray film showed full reexpansion of the right lung. An air leak was present and persisted after ten days of continuous suction. On hospital day 11, open thoracotomy with excision of apical blebs and pleurodesis was done. The patient was discharged on hospital day 20. Pathologic examination of the excised pulmonary tissue demonstrated multinucleated giant cell infiltration (Fig).

Varicella zoster infection produces a multinucleated giant cell inflammatory tissue reaction.\(^1\) In our patient, inflammation of a pulmonary bleb resulted in pneumothorax. To our knowledge, this complication of chickenpox has never been documented. If a patient with chickenpox develops sudden shortness of breath or chest pain, a spontaneous pneumothorax should be ruled out by immediate chest x-ray examination. Clinical suspicion for pneumothorax should be especially high if the patient is a tall young man, elderly, a smoker or has a previous history of spontaneous pneumothorax.\(^2\) Physicians need to be aware of this potentially fatal pulmonary event and should include it as yet another possible complication of chickenpox.

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Pleural Fluid Acidosis in the Malignant Variant of Benign Pleural Mesothelioma

To the Editor:

Pleural effusions associated with benign pleural mesothelioma (BPM) are unusual,\(^1\) with the description of fluid pH limited to one patient with a value of 7.50.\(^*\) We wish to report a case where pH of
the fluid on two occasions was less than 7.20 in the malignant variant of BPM. This low pH may be of diagnostic and prognostic value in separating localized malignant mesotheliomas from the more common benign type of BPM.  

An 85-year-old man was admitted with a four-month history of a dry, non-productive cough associated with exertional dyspnea. Although there was recent weight loss and fatigue, he denied chest pain, hemoptysis, fever, chills or sweats. His past medical history included congestive heart failure, 40 pack-years of smoking cigarettes, and work as a sculptor without asbestos exposure. His only chronic medications were digoxin and dyazide.

Physical examination was significant for tachypnea at 40 bpm, tachycardia at 110/min and marked decrease in breath sounds on the right, with dullness to percussion. There was an S2 gallop. No cyanosis or clubbing was present.

Admission laboratory data was remarkable for a chest roentgenogram (CXR) which demonstrated right pleural effusion with pleural and pericardial calcifications. These were new findings compared to a CXR taken three years earlier. The complete blood count and serum chemistry were normal. A computerized axial tomography of the chest supported the CXR abnormalities. Malignancy was suspected and a right thoracentesis was performed, with 800 ml of serosanguinous fluid removed. The following day, a repeat thoracentesis was performed. Chemicals of the fluid revealed an LDH of 756 IU/ml and 701 IU/ml on respective days. Fluid pH was 7.02 and 7.16, with corresponding blood pH of 7.49 and 7.46, respectively. Three days after admission, the patient continued to have marked shortness of breath requiring mechanical ventilatory assistance. On the fifth hospital day, fatal cardiopulmonary arrest occurred. At autopsy, the pertinent findings were limited to the thoracic cavity. The right pleura, both visceral and parietal, had been replaced by leathery, gray, firm, non-granular tissue which measured up to 15 mm in thickness. The right lung was atelectatic, adherent to the thickened visceral and parietal pleura. The leathery pleural tissue extended by contiguity extension into the pericardial sac, replacing in areas the visceral and parietal pericardium.

Histologic studies revealed the thickened pleura to be the result of a proliferation of benign fibrous tissue with nuclei of equal size. In some areas, the proliferating fibrous tissue was relatively cellular, but there was no evidence of mitotic activity and there was no variance in nuclear size. Broad areas of hyalinization of the proliferating connective tissue was seen. Within the pleural sac, this proliferating fibrous tissue extended into the superficial myocardium. Stains for bacteria, fungi, and acid-fast bacilli were negative. All cultures at eight weeks were negative for fungi and mycobacterium.

BPM has been recognized to have an aggressive malignant variant which, unlike the benign form, usually proves to be fatal. The rarity of effusions in BPM has limited the description of the fluid in the literature to two patients with the benign variant. One had an exudative effusion by LDH and protein criteria, and the other an effusion with a pH of 7.5. Our patient with the malignant variant of BPM had a pleural fluid pH of less than 7.20 on two occasions. His rapid demise is in keeping with the grave prognosis of histologically-proven malignant effusions with a pH less than 7.30. More reports of the characteristics of the fluid are necessary to substantiate our contention that a low pH (<7.30) supports the presence of the malignant variant of BPM, and implies a poor outcome.

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Diffuse Panbronchiolitis Observed In an Italian

To the Editor:

Diffuse panbronchiolitis is a chronic inflammatory disease of unknown cause prevalent in Japanese but rare in Western countries. The lesions are peculiar and consist of severe chronic inflammation of the proximal respiratory bronchioles extending toward the peribronchial tissues.

With further progression of the disease, narrowing and obliteration of the airways by acute inflammation and mucus occur. The lesions are disseminated through the lungs but they are more common in the lower lobes. The condition must be differentiated from other more frequent obstructive pulmonary disorders.

We describe a case observed in a 45-year-old Italian man who presented with worsening cough, sputum and exertional dyspnea in 1986. He was a nonsmoking railwayman. Since adolescence he experienced productive cough and chronic paroxysmality. Since 1986 he was admitted to different divisions of respiratory medicine with a diagnosis of COPD. Chest roentgenogram demonstrated diffuse fine nodular shadows in both lungs, particularly at the lower fields. Respiratory function tests revealed a vital capacity of 2300 ml (96 percent of predicted); FEV1, 53 percent; and RV 52 percent of TLC. Arterial blood gas analysis breathing room air revealed a PaO2 of 60 mm Hg, PaCO2 42 mm Hg and pH 7.38.

The patient later died of acute bronchospasm and tense pneumothorax, the latter probably related to the critical care.

At autopsy, many fine yellowish nodules were disseminated throughout both lungs. Microscopically, bronchiole walls appeared infiltrated by dense, chronic inflammation and their lumens filled with acute inflammation and mucus. Foamy macrophages, both within the interstitium and air spaces and interstitial chronic alveolitis, were present immediately surrounding the bronchioles.

To the best of our knowledge this is the first case of diffuse panbronchiolitis reported in Italian.

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