neoplastic involvement of the hilar and mediastinal nodes. Only one case (1 percent) had metastatic disease of the axillary lymph nodes, while an additional subject was found to have supraclavicular node involvement. An additional six cases showed metastases to abdominal lymph nodes. Therefore, eight (10.4 percent) had extrathoracic lymph node metastases.

Although we consider these 77 cases highly selected, the pattern of lymph node metastases in this series closely parallels that found in the review of Kim et al, in particular, the rare occurrence of axillary lymph node metastases. These data provide further evidence of a discrepancy between the observed and expected frequency of axillary lymph node involvement in malignant pleural mesothelioma and support the suggestion of Kim and colleagues of a prospective study to determine the true frequency of peripheral lymph node involvement associated with this disease.

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To the Editor:

My colleagues and I thank Dr. Huncharek and Dr. Smith for their interest in our report and are pleased to note the results of their review.

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Foreign Body Retrieval

To the Editor:

In a recent review of foreign bodies in the tracheobronchial tree (Chest 1987; 91:730-33), Weissberg and Schwartz state that for removal of the aspirated foreign body the open tube (rigid) bronchoscope is "undoubtedly the instrument of choice, although reference is made to a report by McCullough (Chest 1985; 87:270-71) in which there was successful removal of a pair of forceps using a Dormia stone basket through a permanent tracheostomy.

The following case report, like that of McCullough, suggests that rigid bronchoscopy may be quite unnecessary even to remove large, bulky foreign bodies.

CASE REPORT

A 58-year-old man presented to the outpatient department with a feeling of something sticking at the back of his throat after eating homemade turkey soup. Indirect laryngoscopy was unremarkable and the patient was discharged home, only to return the following morning having awoken during the night with episodes of cough and wheezing. A chest x-ray film taken that morning was reported as normal and, although there was bilateral wheeze on auscultation, the patient clearly localized his problems to the left chest.

Following therapy with atropine IM and topical xylacaine, with supplemental O2 via nasal cannulae, the Pentax FB 19H bronchoscope was introduced through the mouth into the tracheobronchial tree and a turkey vertebra was identified in the left main bronchus. Attempts to grasp this with biopsy forceps (including those used routinely at gastroscopy) served only to dislodge the foreign body which then became firmly lodged in the right bronchus intermedius.

An imaginative OR nurse questioned whether the snare used at colonoscopy for polypectomy would slide down the large single channel of the fiberscope and, as this passed easily through the scope, the turkey vertebra was snared with the transverse processes horizontal to the trachea. In this position, however, it was felt that the transverse processes would damage the vocal cords and the bone was released and snared again, on this occasion with the transverse processes perpendicular to the trachea. The scope, snare and foreign body were easily removed per orum. The vertebra measured about 2 cm in its greatest diameter.

DISCUSSION

With the advent of large, single-channel fibreoptic bronchoscopes, foreign body retrieval from the tracheobronchial tree—at least in adults—may be satisfactorily attained using large baskets such as those used for removing colonic polyps. Such a technique allows for patient comfort and early discharge from hospital or emergency room.

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To the Editor:

Thank you for the opportunity to respond to Dr. Atkinson's comments. We wish to make it clear that we do not reject the use of the flexible bronoscope. Indeed, it can be helpful occasionally, and several papers—not one—describing its use were quoted in our article. However, these are exceptions rather than the rule. Such is also the case described by Dr. Atkinson. It is our strong conviction that, in nearly all those exceptional cases, the rigid bronchoscope could have been used with equal success and probably with greater ease. In fact, we believe that the turkey's vertebra in Dr. Atkinson's case became dislodged because a flexible biopsy forceps was used rather than a large-size rigid grasping forceps. Had Dr. Atkinson used a rigid instrument, this complication probably would not have occurred.

Moreover, we wish to stress a more important point. The great majority of patients who aspirate foreign bodies are infants and children. In our series, children constituted 78.8 percent of the group; 36.4 percent were infants below the age of two years. How does Dr. Atkinson propose to control the airway in these tiny subjects? How many would have suffocated had we used the flexible rather than the open-tube bronchoscope?

We appreciate the opportunity to read Dr. Atkinson's comments, but we do stand by our conviction that the rigid bronchoscope is the instrument of choice in the management of tracheobronchial foreign bodies.

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Recognizing Pulmonary Torsion

To the Editor:

Shorr and Rodriguez (Chest 1987; 91:927-28) reported an interesting case of spontaneous torsion of an entire lung. As observed in previous references, preoperative diagnosis failed in the presented case despite repeated bronchoscopic examinations. The authors conclude their report by postulating that a bronchogram with or
FIGURE 1. Linear tomography shows a "curling fashion" distribution of the pulmonary vessels in the middle part of the right pulmonary field.

without pulmonary angiograms could be diagnostic of this rare phenomenon.

At the Hospital Central Militar in Mexico City, we have treated what we believe to be the first case of transposition and spontaneous torsion of a pulmonary lobe and the only case preoperatively demonstrated by means of a bronchographic study.

CASE REPORT

A 19-year old man was admitted because a two-day period of tension pain in the right scapular region. He denied other symptoms. Past history revealed no previous thoracic diseases nor injuries. Physical examination, routine laboratory studies and EKG results were normal. Chest x-ray film on admission was reported normal, but chest laminography revealed a "curling fashion" distribution of the vascular pattern in the middle portion of the right pulmonary field (Fig 1). A subsequent bronchogram showed a kinking of the bronchus of the middle lobe, and a backward and upward display of the segmentary branches suggesting an inverted lobe (Fig 2,3). A right thoracotomy was performed which demonstrated the middle lobe to be located posteriorly instead of anteriorly and twisted 180° around its bronchovascular pedicle. The bronchus as well as the vascular elements were abnormally long, but the lobe was well aerated and there was no macroscopic evidence of vascular complications. Because of the anatomic abnormalities the twisted lobe was resected. Microscopic examination of the surgical specimen showed small zones of atelectasis with congestion and hemorrhage. The patient had an uneventful recovery and has remained asymptomatic.

DISCUSSION

Review of previous reports on pulmonary torsion shows that once gangrene or massive infarction install, diagnosis becomes very difficult because of the complex clinical picture and the unspecific Ficuiie 2. Bronchogram reveals a kinking of the bronchus of the middle lobe (lateral view.)

FIGURE 3. Oblique projection of bronchogram shows a distribution of the segmentary bronchi similar to that of vascular elements.
bronchoscopic and radiologic findings. Therefore, recognition of pulmonary torsion is mandatory before irreversible vascular complications have occurred.

In this early phase of the event a reliable diagnostic sign seems to be the "curling fashion" roentgenographic appearance of the vascular pattern formerly described in traumatic cases and also observed in our patient. Thus, the discovery of this sign must prompt confirmatory studies. Our case demonstrates that bronchogram, under particular conditions, constitutes a specific diagnostic procedure.

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REFERENCES
1 Stratemeier EH, Barry JW. Torsion of the lung following thoracic trauma. Radiology 1954; 67:728-27

To the Editor:

We congratulate Dr. Cervantes-Perez for making a diagnosis of spontaneous pulmonary torsion preoperatively. We are pleased that our suggestion that a bronchogram may be a definitive diagnostic test was helpful in this case. Dr. Cervantes-Perez reinforces the findings of others that, in the early phase of this rare entity, the "curling-fashion" finding may be present on chest tomograms. Because of the rarity of this disorder, facts concerning its etiology and natural history remain elusive. Further study is needed to understand this entity in full.

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Effect of Phosphates?

To the Editor:

After reviewing "The Effect of Inorganic Phosphate in Hypoxic COPD Patients During Exercise" (Chest 1987; 92:310-12), I wonder how the authors could conclude that an intravenous infusion of 1,500 ml of a 10 percent fructose and phosphate solution improved exercise performance because of some effect of the phosphate. The experimental protocol used delivers about 500 carbohydrate calories to the exercising subject. It is well established that carbohydrate feedings of this magnitude may improve submaximal exercise performance by their effects on skeletal muscle metabolism. Thus before invoking phosphate as a possible exercise aid, more careful experimental protocols must be formulated to isolate the effect of phosphates per se.

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REFERENCES
1 Costill DL. Carbohydrate nutrition before, during and after exercise. Fed Proc 1985; 44:364-68

Ribavirin In Desquamative Interstitial Pneumonia

To the Editor:

Desquamative interstitial pneumonia (DIP) is a chronic diffuse infiltrative lung disease of unknown origin in which conventional treatment is intended to prevent progressive pulmonary fibrosis. We have tried therapy with ribavirin, an antiviral agent, in a patient with poor response to steroid and immunosuppressive therapy.

A 45-year-old white man was admitted to our hospital in January, 1986 complaining of progressive exertional dyspnea during the previous four years. Pulmonary function test (PFT) results revealed a restrictive pattern. Chest films and gallium scan disclosed a diffuse interstitial pattern in both pulmonary bases. Lung biopsy specimen showed advanced interstitial fibrosis with alveolar cell desquamation and cubic metaplasia in alveolar walls. The diagnosis of DIP was made. For the next five years, the patient underwent continuous corticosteroid therapy with prednisone (or its equivalent), alone or in combination with azathioprine. Despite therapy, PFT did not change significantly (Fig 1) and the patient had to be admitted to the hospital several times because of acute episodes of ventilatory failure. The addition of oral acyclovir to the therapeutic regimen did not significantly improve PFT. In March, 1986, a course of treatment with 8-methyldprednisolone (12 mg/day), azathioprine (150 mg/day), and acyclovir (600 mg/day), aerosol preparations of ribavirin (200 mg, three times a day) were introduced. This was followed by a significant clinical improvement that allowed the interruption of azathioprine and steroid therapy (Fig 1). After two months of daily therapy with ribavirin, PFT significantly improved (Fig 1), exertional dyspnea was greatly reduced and chest films revealed a clear amelioration of the interstitial pattern. Thereafter, therapy with ribavirin aerosols was given three times per week. Five months after corticosteroid and azathioprine withdrawal, both the clinical condition and PFT were still improving.

There is increasing evidence that maintained alveolitis due to continuous release of chemotactic factors by activated alveolar macrophages is the central pathogenetic mechanism in interstitial lung disease. Although there is no serologic or morphologic evidence of viral involvement in DIP, viruses may induce macrophage activation through different mechanisms and have been implicated in pulmonary fibrosis.

Ribavirin has been shown to be effective in the treatment of some viral infections affecting the respiratory tract. While conventional therapy and oral acyclovir did not appear to be effective in this patient, ribavirin aerosol therapy was applied with good results. Further trials are needed to elucidate whether ribavirin could be of