in terms of reduction of morbidity and/or mortality, the administration of heparin alone, followed by coumadin, should continue to be considered the standard of care and should be the therapy in the vast majority of cases of pulmonary embolism. Aside from perhaps use in patients dying of the obstructive effects of the acute embolism, the role of thrombolytic therapy in the treatment of pulmonary embolism has yet to be defined.

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3 Goldhaber SZ. Recent advances in the diagnosis and lytic therapy of pulmonary embolism. Chest 1981; 98(suppl): 173-79

Selective Bronchial Intubation for the Treatment of Bronchopleural Fistula in a Preterm Newborn

To the Editor:

A left-sided tension pneumothorax occurred in a 1-day-old premature newborn with transient tachypnea. Closed chest-tube drainage was started. A second chest tube was inserted at the age of 36 h because of incomplete resolution of the pneumothorax. A tension pneumothorax persisted with a flow of 200 ml/min through the bronchopleural fistula. Different modes of ventilation (high flow, short inspiratory time), different forces of suctioning (up to 20 cm H2O), and positioning the patient on the left side failed to improve the air leak or the patient's hypoxia. Selective intubation on the right was then performed with an endotracheal tube without a Murphy eye, and the chest-tube aspiration was increased to 25 cm H2O in an attempt to minimize atelectasis in the left lung (Fig 1). No further leak was observed.

Selective intubation has been used to treat severe unilateral pulmonary interstitial emphysema.1 Our limited experience suggests that this method may also be useful in treating severe bronchopleural fistula in premature infants.

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REFERENCE

Microbial Etiology of Acute Pneumonia in Hospitalized Patients

To the Editor:

I read with great interest the article by Bates et al,1 which appeared in the April 1992 issue of Chest. Their results, which revealed a predominance of Legionella and other Gram-negative bacteria in hospitalized patients with acute pneumonia, are certainly worth discussing.

I was delighted to read that this study did not rely on results of sputum culture. There is abundant evidence in the literature showing that sputum culture results can be misleading in this setting.2-4 A study of community-acquired pneumonia (CAP) in Papua New Guinea in which I was involved supports this.4 In this study of 175 adults with CAP, a positive microbial diagnosis was made on the basis of positive cultures of blood and/or percutaneous lung aspirate (PLA) alone, although sputum cultures were also obtained whenever possible. Blood cultures were positive in 57 of 175 cases, (33 percent), and PLA cultures were positive in 90 of 144 cases (62.5 percent). Of the 112 patients with positive blood and/or PLA cultures, sputum was obtained for culture in 90. The same organism was isolated on sputum culture in only 26 percent of cases, while in 40 percent a different organism was grown on sputum culture, and in the remaining 34 percent sputum cultures were negative.

Bates et al note the marked difference in microbial etiology in their pneumonia patients compared with other studies where the more common respiratory pathogens predominate (ie, Streptococcus pneumoniae and Haemophilus influenzae). This difference is explained by the presence of oropharyngeal contamination when etiology is dependent on sputum culture results. They state that "until a larger number of patients are evaluated using invasive methods to obtain material for study, these contradictions will persist." However, our study in Papua New Guinea addresses this issue very clearly. Based on positive blood and/or PLA cultures only, the causative microbial organisms were as follows: S pneumoniae, 61 percent of cases; H influenzae, 13 percent; Staphylococcus aureus, 12 percent; and Gram-negative enteric bacilli, 12 percent.

Clearly, in our study the common respiratory pathogens capable of both oropharyngeal contamination and true lower respiratory tract sepsis (ie, pneumococcus and H influenzae) accounted for the majority (74 percent) of cases of CAP.

The study by Bates et al clearly brings into question the validity of previous studies of pneumonia. Using more invasive methods of microbial diagnosis, they demonstrated a predominance of Legion-
ella and other Gram-negative bacteria. Their results cannot be explained by the inclusion of patients with nosocomial pneumonia, since the microbial etiology in these patients was not markedly different from that in patients with CAP.

The authors are certainly correct in calling for more and larger studies of the microbiology of pneumonia using invasive methods. As can be seen, even when invasive methods are used, the results can be quite different. This may be related to the different population groups being studied.

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REFERENCES

To the Editor:

We thank Dr. Barnes for his comments and agree with him that results from sputum culture for aerobic bacterial pathogens that cause acute pneumonia are so inaccurate that this test should no longer be used routinely. There are exceptions, such as culture for the various Legionella species. Despite ample published reports questioning the value of sputum culture, most studies of the etiology of community-acquired pneumonia have relied upon cultures of expectorated sputum. This means that the collected knowledge over time regarding the common bacterial pathogens causing pneumonia should be reevaluated.

Dr. Barnes and co-workers found that among patients in New Guinea with acute pneumonia the most common pathogens (as established by blood culture and culture of lung aspirate obtained by percutaneous needle aspiration) were S pneumoniae, H influenzae, and S aureus. The difference noted between the two studies may reflect differences in the study populations and the diagnostic tests employed. No detailed description of the types of patients enrolled in Dr. Barnes's study was provided—only that the patients were adults not known to be immunocompromised. The mean age for our study patients was 64, and many had coexisting abnormalities including COPD, cancer, alcohol abuse, and neurologic abnormalities. The approach to diagnosis also differed between the two studies. In Dr. Barnes's study, emphasis was placed on diagnosing aerobic bacterial pathogens identified by cultures collected from blood and lung aspirates. In our study, we obtained cultures of blood in more than 90 percent of patients (only 16 percent were positive), but were unable to collect lower respiratory tract samples by invasive tests as frequently as Barnes and co-workers did. We also performed a number of serologic tests for other pulmonary pathogens. These factors together with the differences in geography and epidemiology may explain the differences between the two studies.

It is disturbing that most medical textbooks continue to advocate Gram stain and culture of sputum as an important guide for the selection of antimicrobial therapy for patients hospitalized with community-acquired pneumonia. In addition, phase 3 trials testing the value of new antimicrobial agents for the treatment of pneumonia almost always require a Gram stain and culture of sputum prior to and after treatment, and these data are used in the assessment of therapeutic efficacy. Finally, third-party payers provide a strong financial incentive for physicians to obtain a sputum culture prior to treating patients with pneumonia since hospital payment for care of patients with complex bacterial pneumonia of "known etiology," as determined by sputum culture, is substantially greater than payment for the same illness when the microbial etiology is given as "unspecified." Thus, there are a number of incentives for healthcare providers to use a test that is of little value. It is difficult indeed to change practice patterns, particularly the use of tests that are "time honored," even if they are of questionable scientific validity.

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NOTE: Dr. James Crawford, a distinguished academician and clinician, recently experienced coronary artery bypass surgery. In the postoperative and convalescent phases of this surgical experience, Dr. Crawford composed the following wonderfully insightful poem. E.D.

Cardiac Surgery
He held my heart in his hand—
That mere man—
With those wonderful hands.
But he couldn't hold my spirit,
Nobody can hold my spirit,
I can't hold my spirit!
It wasn't in my chest,
They'll never find it in my brain,
It is in me!
He couldn't see it—he couldn't touch it—
So he doesn't believe in it.
But he counts on it.
And so do I!

James W Crawford, M.D., Ph.D.,
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Errata

In the article by Ruckdeschel et al titled "Intrapleural Therapy for Malignant Pleural Effusions: A Randomized Comparison of Bleomycin and Tetracycline," which appeared in the December 1991 issue of Chest (Chest 1991; 100:1328-35), the 95 percent confidence limits for tetracycline in Table 3 should have been shown as 50 to 83 for 30-day recurrences and 39 to 69 for 90-day recurrences.

In the article by Lee et al titled "Endobronchial Tuberculosis: Clinical and Bronchosopic Features in 121 Cases," which appeared in the October 1992 issue of Chest, (Chest 1992; 102:990-94), the second sentence in the second paragraph on page 992 should read "Ten patients (8.3 percent) demonstrated no abnormality on chest films in our study."