illary blood depending on the distribution of ventilation and blood flow. The systemic arterial blood oxygen tension is a result of a mixture of all end-capillary blood derived from the lung combined with blood from anatomic shunts.

Therefore, there are many true alveolar-arterial oxygen gradients that cannot be represented accurately by one number. The authors are not describing a true physical gradient but rather, an abstract mathematical difference. I would use the term alveolar-arterial oxygen difference for the mathematical subtraction of the measured arterial oxygen tension from the idealized alveolar oxygen tension.

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Fistulas Do Not Always Cause Pericardial Effusion

To the Editor:

Mahaisavariya and colleagues report (Chest 1994;106:1285-88) on an atrial-esophageal fistula, which adds another interesting case to the roughly 65 comparable cases reported, usually due to benign esophageal disease and sometimes involving the pericardium. The authors note: "The adherence of the esophagus and the myocardium, therefore, provides a potential for fistula development." This needs correcting: the esophagus does not adhere to the myocardium; the pericardium is interposed between the esophagus and the adjacent cardiovascular structures from the level of T-3 to T-11. The probable reason that a fistula does not always cause pericardial effusion, because it must perforate the interposed pericardium, is the unusual structure of the pericardium over the left atrium—a basketwork of fibers in the parietal pericardium, which tightly clasp the left atrium. This is also the reason why none but very large pericardial effusions under pressure penetrate behind that structure, and why patients stabbed in the back through the left atrium tend to bleed into the pleural cavity rather than the pericardium.

These remarks are not made to criticize but rather to amplify a nice report.

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REFERENCES

Tuberculosis in Young Adults and the Elderly

To the Editor:

Korzeniewska-Kosela and colleagues (Chest 1994; 106:28-32) reported their observations contrasting "Tuberculosis in Young Adults and the Elderly," an article published in Chest in July 1994. They summarized that the young" were more likely to have hemoptysis, fever, and cough. . . ."

Although the reference probably did not appear in their literature search, there has been a previous description of this phenomenon.

The consumption of young men that are in the flower of their age, when the heat of blood is yet brisk, and therefore more disposed to a feverish fermentation, is for the most part acute. But, in old men, where the natural heat is decayed, it is more chronical. It is reassuring that some clinical aphorisms have enduring value.

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Pleural Tuberculosis in HIV-Infected Patients

To the Editor:

We have read with great interest the article by Relkin et al (Chest 1994; 105:1338-41), which appeared in Chest in May 1994, about the characteristics of pleural tuberculosis in patients infected by HIV. In this report the authors found that patients with pleural tuberculosis and HIV infection, had compared with a group of HIV-negative patients, significantly fewer positive tuberculin skin tests, more acid-fast bacteria identifiable in pleural tissue, higher proportion of positive Mycobacterium tuberculosis (MT) cultures of sputum and pleural biopsy (PB), and similar pleural biopsy histologic conditions.

It has been suggested that delayed hypersensitivity plays a major role in the pathogenesis of tuberculous pleural effusion, and T-lymphocytes play a central role in cell-mediated defenses against MT. Because HIV infection results in specific depletion of CD4 cells, we might therefore expect to find more acid-fast bacteria identifiable in pleural tissue, sputum, and pleural fluid (PF), and fewer granulomas on PB specimens.

To evaluate this hypothesis, we retrospectively studied all cases with a definitive diagnosis of pleural tuberculosis from 1986 through December 1991 at our hospital. Inclusion criteria in the study were (1) positive culture of PB, PF, or PA specimen(s), or both for MT, (2) presence of granuloma on PB with PF, PB, and negative sputum cultures for fungi, parasite, and atypical mycobacteria and with a clear clinical response to antituberculous treatment, and (3) positive sputum culture for MT associated with exudative pleural effusion, if all other causes of effusion have been ruled out.

One hundred and three patients with a definite diagnosis of pleural tuberculosis were finally included. Ten subjects (10%), eight men and two women whose mean age was 29 years (SD = 7) were infected with HIV. The remaining 93 patients (90%), 60 men and 33 women whose mean age was 28 years (SD = 15) had no HIV infection. We found that the HIV-positive group had significantly higher rate of positive sputum cultures for MT (4/10 [40%] against 10/78 [13%] in noninfected patients, p < 0.05), and fewer positive tuberculin skin tests (2/10 [20%], against 57/88 [65%] in HIV-negative patients, p < 0.05). In our series, granuloma on pleural

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