We agree that diagnostic procedures in critically ill patients is becoming a more common problem. As LoCicero states, each patient has unique circumstances, and in reference to patients with AIDS, the ability to perform OLB should be weighed with both therapeutic and clinical outcome. It is our policy that when an AIDS patient’s status deteriorates, issues regarding diagnostic procedures, predicted therapeutic outcome, diagnosis and survival, and aggressive ICU care, including mechanical ventilation should be discussed with the patient. This is particularly true in a population whose survival is measured in weeks to months. We believe this approach helps both patients and clinicians plan future treatment and evaluate its consequences in a rational, efficacious, and humane way.

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More on Lung Cancer Screening

To the Editor:

Drs. Parkin and Pisani (CHEST 1994; 106:977) should be commended not only for pointing out the numerous statistical misinterpretations which led Strauss et al1 to conclude, incorrectly, that screening chest radiographs (SCRs) might be of value in preventing death from lung cancer, but for emphasizing as well, the frequency with which lung cancer is “overdiagnosed” (this term refers to the labeling of a lesion as malignant on histologic grounds when its biologic behavior is benign) when patients are subjected to radiographic screening. The concept that some histologically malignant lesions originating in the prostate and thyroid glands have little potentiality is familiar to all: that about one fourth of lung cancers exhibit a limited propensity for growth and spread is less familiar and therefore more difficult to accept. Individuals beguiled by the belief that SCRs are useful in reducing mortality from lung cancer may wish to read two searching analyses of the subject.5,6

The decision to use SCR for lung cancer detection—economic factors aside—is not innocuous (is not an inoffensive one). In the initial screening for the Johns Hopkins Lung Project4 for example, 15% of patients required “further evaluation” of SCR abnormalities ultimately shown to be nonmalignant; 0.6% had malignant diagnoses established. “Further evaluation” is a spectrum of investigative steps that may extend from the benign and relatively inexpensive (retrieving earlier films, observing serial changes); to the expensive (computerized tomography); to the expensive and invasive (bronchoscopy, needle aspiration); and, regrettably, to thoracotomy for benign disease. A similar percentage of patients in the prevalence screen of the Memorial Sloan-Kettering National Lung Program5 required further evaluation for what proved to be benign disease. Rang,6 in a half-humorous article, recognized a parallel between the serial events experienced by individuals with incidental findings, ultimately proven inconsequential, and those of the hero of Homer’s epic, The Odyssey (Odysseus in Greek; Ulysses in Latin).

The Mayo Lung Project7 reported 4.4% prevalence of positive initial SCRs among 10,933 screened patients. Lung cancer was the cause of the radiographic abnormality in 91 persons (0.83%). Four of five of the initial-screen abnormalities were determined to be the result of nonmalignant causes. A diagnostic thoracotomy was required for indeterminate lesions in 56 patients of whom 28 (0.26% of the screened population) had a benign disorder. Furthermore, 46 more cases were found among those intensively screened that became evident in the control group (206 vs 160, a difference of 29%) despite postscreening follow-up.8 This discordant rate prompted Eddy9 to point out that “the data are thus consistent with the hypothesis that many of the lesions detected by screening and labeled as cancers were not clinically important in the sense that they would never have become clinically evident during the time of the trial and follow-up (approximately 12 years). If overdiagnosis is occurring as just speculated, its frequency over the 6 years of screening is about 0.8%. . . .” A curious and unexplained observation was that the death rate from lung cancer was 7% higher among the intensively screened group than the controls (3.2 vs 3.0/1,000 patient-years).8

A two-tailed test of the hypothesis that SCRs are useful requires examination of the alternative possibility that screening is harmful as compared with no screening. If true positives derive no benefit from screening, how can the psychologic turmoil and physical burden—and the costs generated—for false positives be justified?

Furthermore, the decision to use SCR among persons at high risk of lung cancer may create an invalid sense of security and thus weaken motivation to cease smoking. Failure to perceive a SCR abnormality, which subsequently becomes clearly evident, may expose the interpreting radiologist to legal embroilment as may failure of the requesting physician to take appropriate action on a vaguely worded or unread radiographic interpretation.

In conclusion, a decision to order SCRs for a person at risk for lung cancer represents what Samuel Johnson, speaking of a friend who was contemplating marriage after a recent divorce referred to as “the triumph of hope over experience.”

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Evaluating Pleural Effusion

To the Editor:

I read with interest the paper concerning evaluation of pleural effusion submitted by Barter and colleagues (CHEST 1994; 106:1209-14). This generally excellent review had few flaws. However, I believe it is necessary to emphasize two points.

First, the authors have the serum-pleural fluid gradient backwards. High gradient values are associated with transudate, low with exudative processes.

Second, the authors’ section on complications is skewed toward the morbid. I believe that the procedure is quite safe. Part of the problem is with the definition of major vs minor complications. Two recent papers have listed pneumothorax as a major complication. Although it can certainly be so, a small pneumothorax, not requiring drainage nor delaying hospital discharge does not seem to be a major complication. Most pneumothoraxes in all studies are of this type.

Although we have not studied only complications but also studied a catheter-through-the needle system. This system was associated with decreased complications. Therefore, the statements concerning risk are somewhat magnified.

Otherwise this is a solid paper with much useful information.

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Does a Positive Brain CT Reflect Brain Metastases?

To the Editor:

As noted by Ferrigno and Buccheri (CHEST 1994; 106:1025-29) in the October 1994 issue of CHEST, there is continuing debate over when to order cranial computed tomography (CT) in the initial staging of non-small cell lung cancer. Most would agree that the absence of neurologic symptoms and signs does not reliably exclude brain metastases.

However, the presence or absence of non-organ specific clinical factors may be important as well. Hooper et al. showed that brain CT scans were positive in 15.5% of patients with only non-organ specific findings such as weight loss and anemia. CT scans were uniformly negative only in the patient group lacking both organ specific and non-organ specific clinical factors. One wonders how many of Ferrigno and Buccheri’s 16 positive CT scans in the absence of neurologic features would have been discovered had additional scanning been prompted by non-neurologic findings. This is particularly pertinent for the three subjects with otherwise operable carcinomas. These additional data might add credence to Ferrigno and Buccheri’s suggestion that all surgical candidates be scanned, as opposed to the proposal by Hooper et al. that brain CT scanning can be omitted in patients lacking all "clinical factors."

Finally, it should be recalled that a positive CT scan cannot be technically, well tolerated, and quite safe," attributes suggesting that thoracentesis is a good "training procedure" for medical students and house staff. This led us to emphasize the complication rates of the procedure using the broader definition. We do, however, realize that a pneumothorax that does not require intervention and does not delay hospital discharge could appropriately be considered a minor complication.

For this reason, in our last study of complications of thoracentesis, we first compared our results with prior literature using the definition of "major complications" which included all pneumothoraces, and then we also compared our results with past literature using as a criterion only those complications of thoracentesis that required intervention. We agree that it might be most reasonable simply to define a major complication as one requiring intervention. In our review article, we did not have the space to expand on this issue.

We appreciate the thoughtful comments of Dr. Merrill, and welcome any other critique or comment of our review of thoracentesis.

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