views on a draft; one third responded, often with detailed comments. Many recognized that their clinical practice differed substantially from the proposals, yet expressed willingness to reconsider this. The finalized version was agreed upon by Society members in December 1992. Recommendations included the following:

1. Outpatient observation of small PSP. Since 72% of those with first PSP will never have a recurrence, it is hardly surprising that 52% of US specialists surveyed do favor observation in some such patients, yet this option does not even appear on Baumann and Strange’s algorithm for PSP; instead, they suggest that “since observation also does not offer recurrence prevention, it may best be reserved for patients who have contraindications to more definitive approaches.” Only a single fatality in PSP is quoted (in any case while in hospital), confirming clinical experience that this outcome is not “apparently uncommon,” but is rare.

2. Where drainage is indicated, simple aspiration is always attempted first. A British Thoracic Society trial (not quoted) confirmed, as expected, that recurrence rate after aspiration was no higher than with intercostal drainage. Results from seven studies including 233 patients suggest success in 70% of those with PSP and in 30% of those with secondary spontaneous pneumothoraces—figures more accurate than those quoted. Where successfully treated for PSP, patients are allowed home from the emergency room with outpatient review. Although some return early because of reaccumulation of intrapleural air, this is unusual, and we are not aware of any disasters resulting from this strategy.

3. A very simple aspiration technique is described. The only equipment required, after using local anesthesia, is a standard cannula, a 50-nL syringe, and a three-way tap; the method is quickly learned by newly qualified doctors. Patients are extremely grateful that something so easy works, particularly those with vivid memories of intercostal drains. Such were formerly readily persuaded of the need for surgery, but now those in the UK who have had two episodes managed by observation and/ or aspiration often prefer to wait before considering an operation, since even after a second PSP there is only a 35 to 50% chance of recurrence.

4. Clamping is strongly discouraged. In the UK, as in the US survey, thoracic surgeons have always been less keen than pulmonologists on clamping. The reason is obvious, yet not widely appreciated. If the leak has stopped, clamping conveys no advantage, but if it has not, then the lung will deflate unnoticed. Without clamping, air leak will immediately lead to obvious bubbling in the underwater drain, and the patient is safe.

Since 1983, these guidelines have become standard throughout the UK because they are user-friendly, logical, practical, and effective; they are now included in standard emergency, general, and respiratory textbooks, as well as many emergency room and junior doctors’ handbooks and wall charts. Those specialists who previously had very different approaches have accepted them with increasing enthusiasm. Rather than our transatlantic colleagues introducing the algorithms of Baumann and Strange or waiting for “primary research… in every aspect of pneumothorax care,” they might consider adopting (probably also adapting) the successful BTS approach.

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To the Editor:

Dr. Miller’s guidelines on behalf of the British Thoracic Society (BTS) are referenced unintentionally within our recent review as a “journal review.” However, his effort is not without flaws. The BTS guidelines are backed by only four references. The degree of conflicting opinion and specific areas of discord are not documented to allow clinicians to critically interpret and confidently adopt or adapt these guidelines. Dr. Miller suggests “increasing enthusiasm” for the British Thoracic Society (BTS) guidelines, both by physicians and patients, such that they are now “standard” in the UK. Objective data detailing the current UK experience with respect to discharge from the emergency department, duration of hospitalizations, recurrence rates, treatment costs, and patient therapeutic preferences would be a valuable addition to the spontaneous pneumothorax literature.

Observation, heavily favored by Dr. Miller, was not included in our treatment algorithms. The BTS recommends simple observation in a patient without chronic lung disease, dyspnea, or complete lung collapse with follow up in 7 to 10 days. We have concerns about the safety of outpatient observation, since rare deaths have been recorded in hospitalized patients. Furthermore, the cost-effectiveness of recurrence prevention at first presentation has been proven in at least one study.

We disagree with the use of simple aspiration. An indwelling small bore chest tube effects lung expansion, allows air leak monitoring, and is present to provide recurrence prevention by pleurodesis if desired. Immediate catheter removal after air evacuation and a 4-h clamping time will spare a second procedure in the 30% of patients who would have failed aspiration.

We disagree that clamping conveys no advantage and should be “strongly discouraged.” A small air leak may not cause “obvious bubbling” in the underwater seal during the time a busy physician has to monitor the device on morning rounds. Clamping for as little as 4 h has no apparent adverse outcomes, and may prevent chest tube replacement, which can be an unpleasant experience. The alternative of pulling the chest tube as soon as air leak ceases has been associated with a 25% risk of pneumothorax recurrence. With proper instructions, clamping for as little as 4 h may offer an inexpensive and safe method to shorten chest tube duration by 20 h from the BTS recommendations.

In summary, our treatment algorithms emphasize a “more aggressive approach” with recurrence prevention considered for the first presentation of a spontaneous pneumothorax. Rather than accept the invitation for America to adopt the BTS approach that has not been proven superior, our review was meant to stimulate the study of alternative approaches to pneumothorax care. The American College of Chest Physicians has agreed that an evidence-based international guideline should be developed.

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ACE Inhibitor and Swallowing Reflex

To the Editor:

Angiotensin-converting enzyme (ACE) inhibitors have been shown to have beneficial effects such as antihypertension, vasodilator in congestive heart failure, and renoprotection.\(^1\) ACE inhibitors are also reported to increase substance P (SP) concentration in sputum in patients with hypertension,\(^2\) and a reduction of SP concentrations in sputum is observed in patients with aspiration pneumonia.\(^3\) Since SP might stimulate the swallowing reflex,\(^4\) we have investigated whether an ACE inhibitor improves the swallowing reflex in elderly patients with aspiration pneumonia.

Twenty-two normotensive patients, mean age 75 (SE, ±2) years had at least one episode of aspiration with chest radiographic evidence of inflammation in the lower pulmonary segments. The 10 control subjects, mean age 75 (±3) years, were healthy volunteers. The swallowing reflex was induced by a bolus injection of 1 mL of distilled water into the pharynx through a nasal catheter. Swallowing was identified by submental electromyographic activity.\(^5\) The swallowing reflex was evaluated by the latency of response, which was timed from the injection to the onset of swallowing.\(^5\) In a randomized, double-blind, crossover design, the subjects were allocated a 5-mg tablet of imidapril or placebo daily for 2 weeks. The swallowing reflex was measured three times at an interval of 5 min after the treatment period, and an average value was used for analysis. The latency of response did not differ between placebo and imidapril in the controls (1.2 [±0.1] vs 1.4 [±0.2] s; p>0.50). However, imidapril significantly improved the latency of response compared with placebo in patients (2.7 [±0.3] vs 6.3 [±1.1] s; p<0.002).

In conclusion, our results suggest that ACE inhibitors have beneficial effects on the impaired swallowing reflex in patients with aspiration pneumonia and help to prevent aspiration pneumonia in these patients.

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Usefulness of Carcinoembryonic Antigen in Pleural Effusion Diagnosis

To the Editor:

We read with interest the report by Garcia-Pachon and colleagues (March 1997)\(^1\) on the level of carcinoembryonic antigen (CEA) in nonmalignant effusions. The authors found that CEA level was elevated (>10 ng/mL) in 17 of 182 pleural effusions (9%) owing to benign diseases, especially in empyemas and in complicated parapneumonic effusions (12/17, 70%). The authors concluded that knowing the causes and characteristics of nonmalignant pleural effusions is useful in interpreting the results of elevated levels of CEA.

We wish to report the results of our prospective study that were presented in part at the 59th Annual International Scientific Assembly of the American College of Chest Physicians, Orlando, in October of 1993. We studied 341 consecutive patients. Pleural fluid and serum CEA concentrations were determined by immunoassay by a laboratory in Haymarket, Virginia, and were divided into various groups on the basis of the final diagnosis, which rested on clinical, radiological, and laboratory findings,\(^2\)\(^3\) and follow-up.

In 15 of 341 patients (4.4%), sufficient fluid for the planned diagnostic tests was not obtained. Of the remaining 326 patients, 131 (40%) had malignancy, 73 (22%) had transudates, 86 (26%) had benign exudates, 11 (3%) had paramalignant effusions, and 25 (9%) had pleural effusions of undetermined cause. The patients with pleural effusions of undetermined cause and those with paramalignant effusions were not included in our study. Of the 131 malignant pleural effusions, 14 were due to lymphomas and were not included in the study. Of the 25 pleural effusions of undetermined cause, 1 had a pleural fluid CEA level of 64.8 ng/mL (in the follow-up no malignancy was found).

None of the patients with paramalignant effusions and lymphomas had a pleural fluid CEA level >10 ng/mL. The causes of the remaining 276 pleural effusions are reported in Table 1. The group with 159 nonmalignant pleural effusions comprised 93 men and 66 women, with an average age of 68±19 years (range, 17 to 98 years). We selected a CEA cutoff level of 10 ng/mL for the diagnosis of malignant pleural effusion. Pleural fluid CEA concentrations were significantly higher in cases of malignant pleural effusions than in those of benign pleural effusions (mean±SD, 202.2±655.2 [ranging from 0.10 to 4,970] vs 3.5±18.4 [ranging from 0.10 to 229]; p<0.0001). Pleural fluid CEA concentrations >10 ng/mL were observed in 72 of 117 patients with malignant pleural effusions (62%). Among these,