What Constitutes Success in Cancer Surgery?

Measuring the Value of Specialist Care

During 5 years of general surgery training, a resident must perform 15 “thoracic” surgical procedures—these can include small thoracotomies, pericardiotomy, mediastinoscopy, rib biopsy, etc., as well as major pulmonary resection. The component of thoracic surgery is a secondary component and may not occupy any substantial portion of a general surgery resident’s chief year. In contrast, a thoracic surgery resident (who has completed a full 5 years of training as a general surgeon) must perform at least 30 major pulmonary resections and 250 (in a 2-year program) or 375 (in a 3-year program) major chest procedures, including cardiac surgery.

Dr. Silvestri and colleagues, in this issue of CHEST (see page 675), have compared the short-term outcomes (hospital morbidity and mortality) of pulmonary lobectomies and pneumonectomies done by two groups of surgeons in South Carolina. The results indicate that the general surgeons, who did half of these procedures in South Carolina, were younger than the thoracic surgeons. They performed fewer procedures per year (75% did less than 10 procedures in the year examined), and their mortality for lobectomy was significantly higher (5.3% vs 3%, p<0.05). This mortality difference was even greater in patients older than 65 years (7.4% vs 3.5%, p<0.02). For pneumonectomy patients, a much smaller group, the mortality difference appeared striking (20.2% vs 11.8%) but did not reach statistical significance. The general surgeons did 50% of the lobectomies and 60% of the pneumonectomies. Pneumonectomy accounted for 8.8% of the pulmonary resections done by thoracic surgeons and 12.2% of those procedures done by general surgeons. What can account for these findings?

Pneumonectomy is dreaded by most thoracic surgeons because of the feared complications of post-pneumonectomy ARDS, bronchopleural fistula, and empyema. It may be that young general surgeons have never seen these complications and therefore do not fear them or know how to manage them. Or, they may encounter difficulties during surgery that force them to convert a lobectomy to a pneumonectomy. Further, they may be unaware of or inexperienced in lung salvage techniques, such as bronchopleural and sleeve resections. Could some of the increased general surgery mortality be from insufficient preoperative risk classification due to inadequate physiological workup or inexperienced decision-making about appropriate operative candidates?

The operations mentioned were all done for cancer. Surgical resection, though curative in some cases and certainly important in local control, comprises only a portion of lung cancer care. There is preoperative preparation, logical work-up, surgical staging, induction or adjuvant chemotherapy and/or radiation therapy. How many of these patients had surgical staging (mediastinoscopy/mediastinotomy)? How many were operated on after induction chemotherapy and/or radiotherapy? How did the completeness of mediastinal node dissection differ between general surgeons and thoracic surgeons? One could perhaps argue that the difficult cases were reserved for the thoracic surgeons and that their lower mortality rates may thus be even more impressive.

None of these speculations can be verified or countered without careful review of history, hospital course, and operative and pathology reports. The authors have called for funding to allow an extensive chart audit of these patients or analysis of a prospective cohort of patients undergoing lung cancer surgery. The medical community should certainly support this in an effort to define the safest route to good care for our patients.

However, morbidity and mortality of surgery are only short-term indicators of outcome in cancer care. Equally important (perhaps more so) is stage-matched 5-year survival. A patient’s survival of the operation does not mean it was the best operation or even that it was indicated—long-term freedom from cancer recurrence is vitally important in judging outcome.

We should vigorously support the evaluation of data like these in other states where good data
Tuberculosis Control Is a Team Sport

An especially disturbing characteristic of the recent tuberculosis (TB) epidemic was the transmission of TB in hospitals and other institutional settings. Although multiple factors contributed to nosocomial TB transmission, a common critical element was the delayed diagnosis of contagious TB cases. In response to this threat to both health-care workers and patients, the Centers for Disease Control and Prevention (CDC) generated new guidelines mandating more rigorous institutional TB control measures. Adoption of these measures, as well as the declining incidence of TB in the United States, are associated with decreased nosocomial TB transmission. I believe, however, that the decreased risk to health-care workers is at least equally the result of a massive TB education effort targeting health-care workers. Without the increased TB awareness that results in the rapid identification of contagious TB cases, no institutional control measures would be successful. In this issue of CHEST (see page 681), Divinagracia and colleagues describe an unintended but perhaps predictable financial liability that arose in concert with the success of the education effort. Overly aggressive TB diagnostic efforts can be viewed, in fact, as a hard won victory over the previous lack of TB awareness. If there were no excessive costs associated with the aggressive evaluation of all conceivable TB suspects, then there would be no problem. There is a problem, of course, because aggressive evaluation of TB is expensive, but the results of this study also demonstrate how cooperation between primary care providers and TB specialists can reduce unnecessary expenditure of medical resources without compromising patient care.

Divinagracia and coworkers determined whether a brief review of suspected TB cases by clinicians experienced in the diagnosis and management of TB (TB specialists) could reduce the incidence of unnecessary tests and could lower costs related to the diagnostic evaluation of these TB suspects. The study was conducted in a hospital where more than 10,000 sputum samples were analyzed for acid-fast bacilli (AFB) by smear and culture to diagnose 80 to 100 culture-confirmed cases of TB in a year at a cost of over $1 million. During 1 month, the two TB specialists independently reviewed the histories and chest radiographs from 97 patients who had sputum AFB analysis ordered. They subsequently gave an opinion as to whether sputum AFB analysis was justified. The amount of time spent to review each case by the TB specialists was between 1 and 2 minutes. Many patients were either known to be HIV-seropositive or have risk factors for HIV infection. The two experts felt that sputum AFB analysis was indicated for only approximately 50% of cases in whom it had been ordered, with 84% interobserver agreement. Each expert detected five of six cases of active TB and strongly suspected the diagnosis of TB in the sixth case.

These results suggest that expert consultation prior to initiating a diagnostic evaluation for TB in hospitalized patients could result in considerable savings without missing the diagnosis of active pulmonary TB in any patients. Although the savings discussed in this study were primarily in the microbiology laboratory, other savings were probably also realized. For example, the TB specialists probably eliminated the need for respiratory isolation in some patients and may well have shortened the hospital stay for additional patients by eliminating the need to wait on sputum AFB results. Although others have questioned the cost-effectiveness of some TB control recommendations, Divinagracia and colleagues suggest a strategy for savings without compromising diagnostic accuracy or placing health-care workers at risk of exposure to contagious TB cases.

Two circumstances described in this study deserve special mention. First, both TB experts agreed with the primary care providers that sputum AFB analysis was reasonable for any HIV-infected patient who had either an abnormal chest radiograph or respira-

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