One in every 14 patients with early-stage lung cancer is not being treated!

Benny Weksler, MD, MBA

From the Division of Thoracic Surgery, University of Tennessee Health Science Center, Memphis, Tenn.

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Address for reprints: Benny Weksler, MD, MBA, Professor of Surgery and Preventive Medicine, Chief, Division of Thoracic Surgery, University of Tennessee Health Science Center, 1325 Eastmoreland Ave, Suite 460, Memphis, TN 38104 (E-mail: bweksler@uthsc.edu).

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Graham is credited as the first surgeon to perform a curative surgery for lung cancer, completing a pneumonectomy on a physician from Pittsburgh.¹ Since then, numerous developments in surgery and anesthesia have allowed more patients with lung cancer to receive treatment. Brunn² is credited with the first single-stage lobectomy; however, pneumonectomy remained the standard of care of the surgical treatment of lung cancer until pleural drainage systems became available in the 1950s. The popularization of lobectomy for treatment of lung cancer then expanded the population of patients who could be treated surgically.

Many advances have increased the treatment options for patients with early-stage lung cancer, including minimally invasive surgical techniques, initially described in the 1990s³ and popularized in the 2000s^{4,5}; sublobar resection, a lung-sparing surgery popularized in the mid-2000s^{6,7}; and stereotactic body radiation therapy (SBRT), introduced in 2003, for medically inoperable patients.⁸ One would hope that this increase in treatment options would decrease the number of untreated patients. In contradiction, the findings of McMurry and colleagues⁹ in the current issue of the *Journal* demonstrate a stable population of patients with early-stage lung cancer who remain untreated despite advances.

McMurry and colleagues⁹ used the National Cancer Database to analyze 15 years of trends in the treatment of clinical stage I lung cancer. Among the more encouraging trends identified was an increase in the percentage of patients with stage I lung cancer diagnosed, from 26% to 28%. Although most patients treated surgically underwent lobectomy, the rate of lobectomy decreased from 55% to 50%, and the number of patients treated with sublobar resection increased (from 12% to 17%). Lymph node staging improved, with more lymph nodes sampled and a higher rate of upstaging after surgery. Less encouraging findings of the study were the lack of improvement in the percentage of patients not receiving any treatment for stage I lung cancer through the 15-year period and the fact that

Patients with early-stage lung cancer (1998-2012): Untreated versus treated with SBRT.

Central Message

Despite advances in surgery, anesthesia, and radiation therapy, there is a sizable population of patients with potentially curable lung cancer who are not being treated.

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minorities were more likely not to receive treatment. Although the percentage of untreated patients with a Charlson comorbidity score of zero was slightly lower in the untreated group than in the surgical or SBRT groups, 57% of untreated patients had a comorbidity score of zero, suggesting that comorbidities did not limit their ability to undergo surgery or SBRT. Insurance status also does not explain the number of untreated patients, because 95.7% of untreated patients were insured by Medicare or private insurance. As outlined by McMurry and colleagues,⁹ this study demonstrated a sharp increase in the number of patients being treated with SBRT (from 0% to 6%) and a decrease in patients receiving standard radiation therapy. It is surprising that SBRT did not decrease the number of patients with early-stage lung cancer who remained untreated. SBRT has been touted as an effective modality for patients with medically inoperable stage 1 lung cancer. The findings suggest that there is a small but consistent group of patients who, for unknown reasons, have not benefited from the development of less-invasive procedures to treat stage I lung cancer.

It may be encouraging to some that SBRT has not (yet) diverted many patients away from surgery for the treatment of lung cancer. In 2012, however the number of untreated patients was quite similar to the number of patients being treated with SBRT (Figure 1). For surgeons, focusing on the number of patients choosing nonsurgical treatment may obscure a more important public health problem: the

FIGURE 1. Patients with early-stage lung cancer (1998-2012): Untreated versus treated with stereotactic body radiation (SBRT).

relatively sizable population of patients with potentially curable lung cancer who are not receiving any care at all. Clearly, further work is needed to understand our shortcomings in serving this population.

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