recently, doctors who do not work in family planning have not come forward to question such legislation. In the past few months, a handful of physicians have spoken up about bills requiring ultrasonographic examinations before abortions.[2] And I appreciate that they have spoken up so eloquently.

But, quite frankly, I wonder why so few have come forward and what has taken them so long. Arizona passed a bill that legitimizes lying to one's patients. Where were the medical associations testifying against this law? Why did they not pull out their full lobbying power to put a stop to this intrusion into the doctor–patient relationship?

How does a doctor's ability to stop an abortion supersede a woman's right to full knowledge of her medical condition? Doctors in the antiabortion movement continue to declare themselves more virtuous than me. But I ask which one of us tells only the truth to our patients, and which of us is willing to lie to get what we want. I will not lie to my patients, no matter how difficult it may be to deliver the news. I trust them to ask good questions and make educated decisions, with my help if they ask for it. I had hoped that the rest of the medical community shared my beliefs about being honest with patients. I am greatly saddened to learn otherwise.

Deborah J. Oyer, M.D.

Aurora Medical Services
Seattle, WA
deb@auroramedicalservices.com

Disclosure forms provided by the author are available with the full text of this letter at NEJM.org.

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Central-Airway Necrosis after Stereotactic Body-Radiation Therapy

TO THE EDITOR: Stereotactic body-radiation therapy (SBRT) delivers large doses of radiation with millimeter accuracy.[1] With SBRT, control rates for stage I non–small-cell lung cancer are 90% or greater, and this effectiveness has led to its worldwide adoption in treating patients with inoperable disease.[1,2] Despite technological advances that permit the precision required for SBRT, normal tissues near the tumor receive higher biologic doses of radiation than with standard treatment. Consequently, patients with tumors adjacent to radiation-sensitive structures, such as the large airways, great vessels, heart, phrenic nerves, and spinal cord, may be at an increased risk for severe radiation injury.[3] Documenting the extent of the toxic effects on these central structures represents a challenge given the competing risk of death in patients with lung cancer and the extended time required for toxicity to develop.

In a seminal study, patients with centralized tumors treated with a full-dose regimen of 60 to 66 Gy of radiation administered in three fractions, the risk of severe toxicity was 11 times as high as the risk of the development of peripheral tumors.[3] Consequently, an SBRT "danger zone" was defined and subsequent multi-institutional trials have excluded patients with tumors in this area. A more protracted and presumably safer fractionation scheme (in which 50 Gy of radiation were administered in five fractions) has been widely adopted for the treatment of centrally located tumors and is the starting point for a dose-determination trial.[4,5] Below we describe the clinicopathological features of central-airway necrosis in a patient who had received SBRT, with 50 Gy administered in five fractions, 8 months earlier.

A 61-year-old woman with a smoking history of 52 pack-years presented with two primary non–small-cell lung cancers: a central tumor measuring 1.4 cm in diameter (Fig. 1A) and a peripheral tumor measuring 2.4 cm in diameter (Fig. 1B). Biopsies of the tumors confirmed that both were adenocarcinomas. Staging studies revealed no metastatic disease. Poor pulmonary function precluded the performance of surgery.

The patient was treated with SBRT in accordance with a protocol for a registration study that allows for long-term surveillance of adverse events; the protocol was approved by an institutional review board. Dose, fractionation, technique, and constraints were established and applied in accordance with published standards.[5] Acute toxicity was not observed, and the patient had an excellent radiographic response.

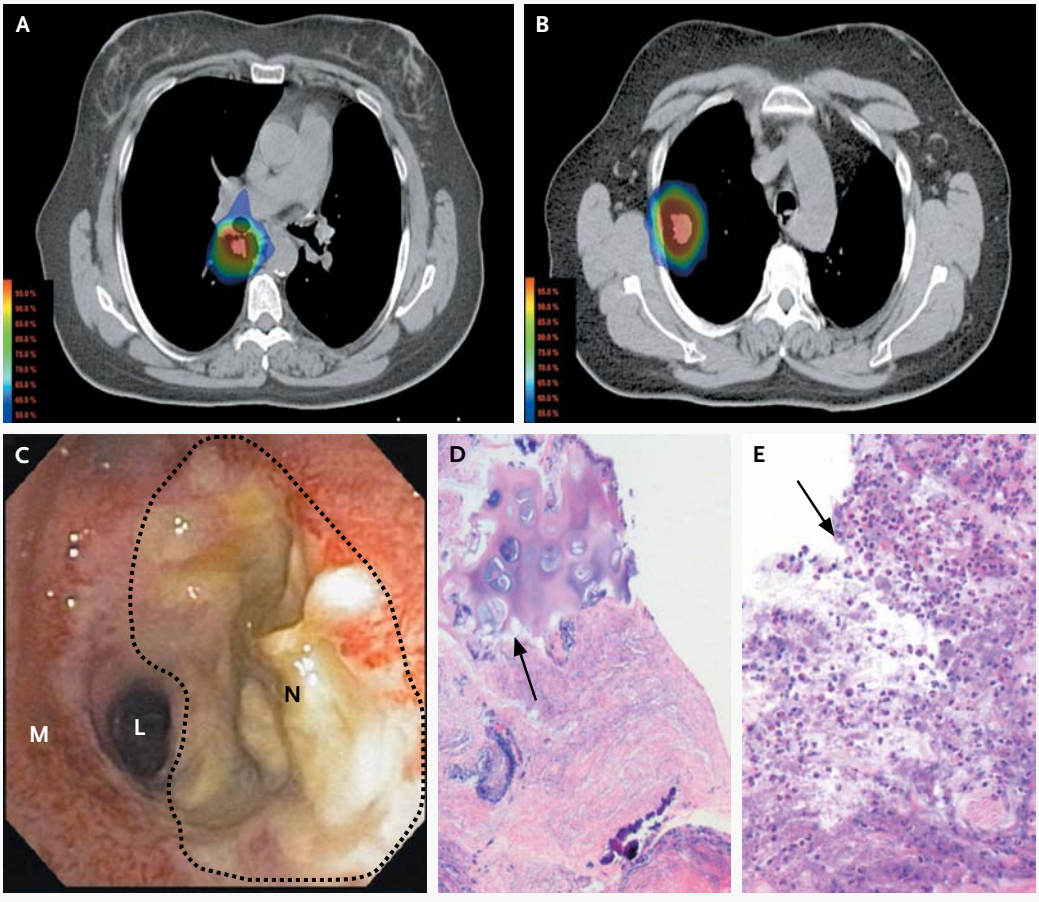

Figure 1. Initial Tumors and Post-SBRT Necrotic Tissue in a Patient with Non–Small-Cell Lung Cancer.

Panels A and B, respectively, show axial images of a central tumor in the right lower lobe of the lung and a peripheral tumor in the right upper lobe obtained at presentation with computed tomography, with overlaid treatment plans for stereotactic body-radiation therapy (SBRT). Target doses are as indicated in the color key, with blue indicating 50% of the prescribed dose and red 100%. A composite dose plan (not shown) indicated that there was no significant overlap between the two treatment fields. Endobronchial ultrasound-guided bronchoscopy, performed 8 months after SBRT, shows a plaque-like area of mucosal necrosis in the right mainstem bronchus (Panel C). The necrotic area extended from the midright mainstem bronchus to the right bronchus intermedius and right hilum along the posterolateral aspect of the airway. The necrotic area (N) is outlined and is adjacent to normal mucosa (M) and the lumen (L) of the right mainstem bronchus. Biopsy specimens stained with hematoxylin and eosin revealed cartilaginous destruction (Panel D, arrow) and parenchymal necrosis with an inflammatory infiltrate (Panel E, arrow). No viable tumor was seen, and no fungal organisms were detected with Grocott methenamine–silver nitrate staining (not shown).

A video showing the area of necrosis is available at NEJM.org

A surveillance scan obtained with the use of positron-emission tomography–computed tomography 8 months after treatment showed new mediastinal metastases, both of which were confirmed on the examination of biopsy specimens as recurrent adenocarcinomas. Incidental findings included an extensive area of necrosis in the proximal right airway (Fig. 1C, 1D, and 1E) in the tissue within the radiated area. (A three-dimensional video reconstruction of the larynx, trachea, and proximal main bronchi that shows of the area of necrosis is available with the full text of this letter at NEJM.org.)

The patient received one cycle of treatment with pemetrexed and cisplatin before plans for salvage chemoradiotherapy were abandoned. Several weeks later hemoptysis developed, necessitating intubation. Bronchoscopy confirmed that the bleeding

originated from the right proximal airway. With the consent of the family, care was transitioned to comfort-only measures, and the patient died 11 months after her original presentation.

This report of fatal central-airway necrosis in a patient treated with SBRT underscores the importance of long-term follow-up of patients with central tumors and the necessity of protocol-based treatment. Furthermore, it may be prudent to consider post-treatment bronchoscopic surveillance of patients with central tumors to determine the true frequency of tracheobronchial injury.

SBRT is an effective treatment for patients with peripheral stage I non–small-cell lung cancer that is inoperable. However, the long-term effects of this treatment, especially on central lesions, should be carefully documented and reported.

Michael N. Corradetti, M.D., Ph.D.
Andrew R. Haas, M.D., Ph.D.
Ramesh Rengan, M.D., Ph.D.

Hospital of the University of Pennsylvania
Philadelphia, PA
rengan@uphs.upenn.edu

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