

Minimally invasive surgery is best treatment for early lung cancer

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The best treatment for small-sized localized lung cancer is a confusing topic for patients to understand. There are many claims available saying cure is possible without any incisions using technologies such as “cyberknife” or stereotactic radiation or that a patient may want a “biopsy” done using a blood sample. Perhaps unleashing the immune system may be the answer with the newest additions to the armamentarium, the PD1- or PDL1-targeted drugs. However, despite all this conflicting information, high quality, least invasive surgical resection is still the patient's best bet as reported by Cornwell *et al.* in their study comparing video-assisted thoracoscopic (VATS) lobectomy to stereotactic radiation therapy for clinical stage I lung cancer in a Veteran population (1). Certainly focused radiation [known as either stereotactic body radiation therapy (SBRT) or stereotactic ablative radiation (SABR)] is a technique that has gained ground and appears to be relatively safe and better than traditional radiation. The key issue is whether when either surgical resection or the most cutting-edge radiation technique is used to treat a localized lung cancer which is better at curing the patient. The randomized studies that attempted to answer this question failed due to poor accrual and the study published that used the data from these two studies is quite flawed (2). The concept is how could a procedure that treats the cancer with a small margin and does not address the draining lymphatics or the regional lymph nodes be better than an operation that removes the cancer and its anatomic structure of origin (the lobe) with all of the draining channels and lymph nodes? Assuming close to zero mortality and very limited

morbidity of the surgical procedure, as typified by the study mentioned above, it does not seem realistic to think that the radiation technique can outperform surgery. The only way this seems possible is if the radiation somehow induces the patient's own immune system to help with cancer surveillance and treatment which has been suggested by some preclinical studies (3). Nonetheless this is quite a stretch and the reason most of the data coming out now that compares stereotactic radiation for small lung cancers with surgical resection favors surgical resection particularly when propensity-matching is done to balance the comparison populations.

Going forward we need to continue to try to do well-conceived trials that compare our best non-surgical therapies such as SABR with our best surgical therapies such as vats lobectomy or perhaps segmentectomy. We may need more creative statistical designs since randomization does not seem feasible. In the meantime, however, surgeons must continue to focus on performing high quality, near flawless surgery that is least invasive and minimizes patient's hospital stay to 24 hours or less and results in very little pain and disruption to normal life. Using this type of surgical approach, as demonstrated by Cornwell *et al.*, the best current treatment for early stage lung cancer is anatomic surgical resection and lymph node dissection.

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Footnote

Conflicts of Interest: Dr. Scott J. Swanson is a consultant for Medtronic and Johnson & Johnson.

References

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