GCVL_LU-D03:
Surgery Options for Smaller, Slow-Growing Lung Cancers

TRANSCRIPT & FIGURES
The standard of care in 2015 for an early stage lung cancer is surgery, and that surgery had been established in the early ‘90s as being a lobectomy. The way that was done back then is that we took tumors that were less than 3 cm in size, we went to the operating room,

made sure all the lymph nodes were okay, flipped a coin – half of the patients got a lobectomy, and the other half got less than lobectomy, and that could have been either a wedge resection, or a segmentectomy.
Lung Cancer Study Group Results

Limited resection was associated with:
- 75% increase in overall recurrence
- 67% increase in local recurrence
- 30% increase in overall death rate
- 50% increase in lung cancer-specific cancer death rate

Lobectomy is the clear procedure of choice for node-negative cancer < 3 cm
(at least for lung cancers diagnosed >20 years ago)

Ginsberg, Ann Thorac Surg, 1995

When they analyzed the results of that study, and the first author on that was Ginsberg, they noticed that patients who had had a lobectomy did better: they lived cancer-free longer, they had less recurrence, it was a better operation. So, back in the early '90s, that study established lobectomy as a standard of care.

Now, that was 20 years ago, and 20 years ago we were treating tumors that were larger than what we are seeing today, because today people are getting CAT scans – either screening CAT scans, or for-other-reason CAT scans, and we’re picking up on a lot of little, little tumors that we never knew existed
before because the x-rays were not good enough. As a result of that, we are now seeing tumors that are 1 cm in size, 8 mm, 12 mm, that we rarely, if ever, saw before. The Ginsberg trial – most of those tumors were over 2 cm in size, so the question is, do we really need to do a lobectomy for those little tumors that we're now picking up today? Those 8 mm tumors, 9 mm tumors, first question; the second question is, we're also seeing a different type of cancer today that we never saw when I was in training – I never knew these things existed, and they were so-called, for a while, bronchioloalveolar carcinomas, and now the term is more early, well-differentiated adenocarcinomas,
either *in situ* or minimally invasive, or invasive, adenocarcinoma – it’s a field that’s evolving. But these tumors are small, not very aggressive, don’t metastasize, and there is certainly a fair amount of evidence, mainly out of Japan, to show that you do not need to do a lobectomy for these particularly not very aggressive, early adenocarcinomas that have not invaded.

As a result of that, those new tumors, and the fact that we’re seeing smaller tumors in general, has brought back the concept that maybe we don’t need to do a lobectomy for all of the lung cancers that we’re seeing today. And in fact, there is a study in North America right now that is ongoing, looking at the role of lobectomy, or less, in tumors of 2 cm or less in size; that study is accruing, it’s been accruing for many years, but it’s getting there. In Japan, they’ve already closed a thousand patient study addressing the same question – we don’t have the results yet. So, it’s the same design as the Ginsberg trial, 20 years later, just with smaller tumors to see whether or not we need to do a lobectomy.
The one thing we have to understand though, is that not every 10 mm tumor has the same biology, and there are 10 mm (or 1 cm) tumors that can be fairly aggressive. That’s particularly true when the tumor is a solid tumor, not just one of those, what we call in radiological terms, a ground-glass opacity, which tend to be more of a not very aggressive type of tumor, and we have to be careful that we cannot – I don’t think, personally, not having seen the results of those two trials, but I don’t think that we can just across the board say every tumor under 1 cm should be treated or can be treated with less than a lobectomy, and I think we have to realize that there are some of those tumors where more of a bigger operation may still be warranted.
But, there are a lot of these less aggressive types of tumors, those adenocarcinoma *in situ* (or AIS), or minimally invasive adenocarcinoma where the focus of invasion that is only 5 mm or less in size, where you can do a very small operation, a wedge, and you get away with it. Similarly, if you elect to treat these patients with focal radiation therapy, you probably will do very well – these tumors don’t metastasize, and you can limit your field of radiation for those tumors, just as we can limit our field of surgery, and you’ll probably do very, very well for these particularly biologically favorable tumors, which are new.