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### Exploring the Pulmonologist's Role: Managing Early-Stage Lung Cancer

Announcer:

You're listening to Deep Breaths: Updates from CHEST on ReachMD. The following episode is part of a 4-part educational campaign brought to you by CHEST in collaboration with AstraZeneca.

Here's your host, Dr. Gerard Silvestri, MD, Hillenbrand Professor of Thoracic Oncology of the Division of Pulmonary and Critical Care Medicine at the University of South Carolina.

Dr. Silvestri:

Welcome to Deep Breaths: Updates from CHEST on ReachMD. I'm Dr. Gerard Silvestri, the Hillenbrand Professor of Thoracic Oncology at the Medical University of South Carolina in Charleston and joining me today to talk about lung cancer is Dr. Lonny Yarmus. He is an Associate Professor of Medicine and the Clinical Director of the Division of Pulmonary and Critical Care Medicine at Johns Hopkins University. He is also a world expert in interventional pulmonology. Dr. Yarmus, welcome to the program.

Dr. Yarmus:

Thanks so much Dr. Silvestri, and thanks to CHEST for organizing this and having me. It's a pleasure to be here.

Dr. Silvestri:

Well, let's get right into it Lonny. Tell me why it's not good enough any longer just to make a diagnosis in early-stage lung cancer. I mean, in the past all we've done as interventional pulmonologists, is take a bit from a bronchoscopy of a peripheral lesion and then send them off to the surgeon. What else do we need to be doing in addition to that?

Dr. Yarmus:

That's a great question and things have changed pretty significantly, and I think pretty rapidly over the years so it's as you said, no longer good enough to just have a diagnosis and I think the main reasons are staging, and also specificity of a diagnostic procedure. So, in the latter aspect it's incredibly important to get tumor specificity in terms of different types of cancer, specifically non-small cell adenocarcinoma and squamous cell carcinoma but also the importance of collecting enough tissue for mutational markers, which we'll talk about some more, but the rising importance of that in early-stage disease is really critically important. Another really important aspect is the along with peripheral bronchoscopy we merge the same procedure with endobronchial ultrasound for lung cancer staging and having adequate and detailed staging is critical because these patients no longer just go for surgery. Some patients now opt for radiation therapy and there are nonsurgical patients who are not able to undergo primary resection and especially for those patients appropriate mediastinal staging is critical, so they get the right therapy up front.

Dr. Silvestri:

Lonny I'm told by colleagues out in the community that 'Listen, why bother, we get a PET, we get a CT scan, the mediastinum looks relatively clean on those scans?' Why do an EBUS in that instance? And I know you actually have a lot of experience in here and have published in this area. Care to tell us why it's important to also stage the mediastinum even if you sort of know they're going to go off to surgery or stereotactic body radiotherapy in those that are inoperable? Could you clue us in to why you sort of think this is an important aspect of staging?

Dr. Yarmus:

Yeah, love to. I think first from a radiologic perspective, I think we know now with significant and mounting data that the specificity and sensitivity of CT scan alone for radiographic staging is insufficient. PET scanning has helped and certainly has increased the specificity

of identifying advanced-staged disease, but the sensitivity remains relatively poor still. And even with that and the existing PET data we know from several studies now that 9% as an example of PET-negative CT-negative mediastinum patients end up with positive lymph nodes on EBUS. As we look more prospectively with tissue acquisition as we do more and more EBUS for early-stage patients, we're seeing an increasing trend of higher levels than that up to 15-20% where we're identifying patients who on imaging look like they're clinical N0, but in fact have N1, N2, and even N3 disease. The incremental risk of adding an EBUS to these procedures is incredibly small and as is the cost but the incremental clinical benefit we believe and with mounting data it's really beginning to show that there is a significant benefit to doing it in all these patients.

Dr. Silvestri:

Yeah, and I would completely agree. And I think one of the keys there that you alluded to is this idea about getting the stage correct right? Because the treatment is so different by stage, between stage IA and IIIA for example. You go everywhere from surgery with nothing else all the way through to chemotherapy and radiation at plus or minus immunotherapy for the advanced-stage patients who should never see an operating room because an operation won't add to their life expectancy. Tell us in addition what role would pulmonologists have here you know, there's some domains where you would see the surgeon but where do you feel like we fit in as a profession at the beginning and of seeing a patient with a new radiographic finding suspicious for cancer?

Dr. Yarmus:

Yeah, so, I obviously as a pulmonologist, I'm a little biased but I think we're the gatekeepers here. I think the general referral patterns for solitary pulmonary nodules both incidental and clinically indicated screening finds, I think are mostly flowing through the pulmonary space, so we see them early. A lot of the literature and research that we've engaged in and that you've led many of the trials in and have shown us that both our clinical acumen and just relying on radiologic findings are not enough and we need combined data with robust use of clinical calculators and now the growing evidence and utility of circulating biologics and mutational markers to help identify early-stage disease and then move that towards tissue acquisition. So, the minimally invasive diagnostics we've talked about, both with EBUS and peripheral bronchoscopy and the growing trends and technologic innovation there has really come a long way and right now I think we're really the ones who can do both right? So, in a minimally invasive fashion, stage and diagnose a primary lesion in a single procedure. We know that interventional radiologists are great at doing what they do for transthoracic approaches with a high yield but a higher complication rate with relative inability to stage and on the flip side from a surgical perspective we want to avoid a lot of benign resection cases and EBUS can really help do that as well as peripheral bronchoscopy.

Dr. Silvestri:

That's great. And I feel and I'm beginning to feel is tension that we see in medicine between what we call minimally invasive and small biopsies between that and getting enough tissue to do some of those elegant molecular tests. Can you tell me how that tension is overcome in your clinic and in your bronchoscopy suite? And why potentially do you think it's important to have enough, and what is enough, tissue to do that extra testing?

Dr. Yarmus:

Yeah, the 'enough pieces' is I think still a work in progress but what we do know is the general definition of adequate or sufficient tissue is a firm diagnosis, but also enough additional diagnostic tissue for mutational analysis. And this is really the growing area of need. So a surgical specimen is a larger specimen and can accomplish all those, but I think what we've all worked really hard over the past few years to show, is that with small biopsy specimens, transbronchial needle aspiration with EBUS for example, we can achieve well over a 90% rate of sufficiency formulations that are critical in understanding the treatment paradigm in these patients.

Dr. Silvestri:

That's great. For those just tuning in, you're listening to Deep Breaths: Updates from CHEST on ReachMD. I'm Dr. Gerard Silvestri and I'm speaking with Dr. Lonny Yarmus about lung cancer. Lonny, one of the other aspects of this I think is communication, and communication between the pulmonologist, the oncologist, and particularly the pathologist. Can you comment a little bit on how tissue needs to be handled correctly and how you work out that hand-off if you will, between those three services?

Dr. Yarmus:

Sure, I think you hit the nail on the head there with the use of the word communication, which is I think the most important aspect of this. So, who does it I think is less important than the fact that it gets done. So, open lines of communication with our pathologic colleagues, or thoracic oncologists, or radiation oncologists, or surgeons, or pathologists help that happen and we've morphed over time. So, in the beginning of the sort of mutational developments it was at our center really on the pulmonologist to request those tests, and over time that's really been transferred over to pathology where we have essentially reflex testing for any non-small cell cancer diagnosis. The important things from our perspective is: one, setting up an appropriate pathway that works for your particular institution, but then also figuring out inter-procedural metrics to determine that your QNS or insufficient rates for these ancillary tests are low and how best to do that. We're a big advocate of rapid on-site cytotechnologists or cytopathologists in the room but that we realize is not available to all

institutions and we're working amongst other things on a project with CHEST to look at guidelines to help optimize the acquisition of these specimens for EBUS throughout the community.

Dr. Silvestri:

Yeah, I couldn't agree with you more. I think communication is the key. I want to end up lastly by asking you, as you look ahead to the future, you know, I want to open the floor for you to have the final word on how you see the lung cancer management and the pulmonologist's role in that management evolving over time?

Dr. Yarmus:

Yeah. And again, I appreciate the opportunity of being here and talking with you today. I think that gatekeeper philosophy has long been a tertiary-care, academic-center philosophy for pulmonologists but I think we're now at the point where we can look beyond academic centers into the community where we all should be doing this, as the primary advocates for our patients. So, we're the ones to see them first typically, and we have that control as a field to really treat, diagnose and set these patients up for the correct treatment up front. So as we gain knowledge and move together as a field, I think we can really help make big strides to impact survival in these patients.

Dr. Silvestri:

Lonny, I completely agree and I would say there is so many places for a pulmonologist to fit into the world of lung cancer which include everything from screening, nodule evaluation and management, diagnosis, staging appropriate referral for treatment, and then caring for patients who might have complications of their treatment including things like radiation pneumonitis and immune-therapy pneumonitis, thromboembolic disease, progression of disease, re-biopsy where needed and of course we're pretty darn good at palliative care. So, there is a role of us, an essential role, in caring for patients with lung cancer. I really want to thank my guest Lonny Yarmus for joining me today to talk about lung cancer. Dr. Yarmus, it was great having you on the program.

Dr. Yarmus:

Thanks, Dr. Silvestri. And I appreciate the invite and appreciate the time from CHEST it was great talking to you.

Announcer:

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