

Minimally Invasive Video-Assisted Surgery for Lung Cancer

Webcast

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Introduction

Andrew Schorr:

Hello and thank you for joining us once again. I'm Andrew Schorr. Welcome to Patient Power, our live webcast. Every two weeks we're here with the Seattle Cancer Care Alliance and leading experts for folks around Seattle and around the world.

You know, one of the most troubling cancers and most common is lung cancer, and it's not a great, no cancer, believe me, I've had it, is a great diagnosis, but lung cancer is terribly serious. Often surgery is used to help people live longer and live better. Wouldn't it be great if you could do the surgery in a much less invasive way? And there is an approach like that, and one of the leaders in it is our guest tonight, Dr. Michael Mulligan, who we'll meet in just a second. He's director of minimally invasive thoracic surgery at the University of Washington Seattle Cancer Care Alliance. But as I always like to say I think the story is best understood when it's told in terms of a real patient, like you and me. So I would like you to meet Mary Dooley, who is 77 years old. She joins us from Prescott, Arizona, about a hundred miles north of Phoenix, over a mile high.

Mary, what happened to you in January of this year? What diagnosis did you receive?

Mary's Story

Mary:

I received a diagnosis of stage IV lung cancer, inoperable with some possible palliative care. And I had had absolutely no symptoms.

Andrew Schorr:

Oh, my. Well, bad news for you. And I know you have Patrick, your husband, who is 82. Now, he's a cancer survivor, isn't he?

Mary:

Yes, he is. Ten years ago he had non-Hodgkin's lymphoma. They thought he had renal cell, but it didn't turn out that way. Anyway he's ten years out and healthy.

Andrew Schorr:

But that isn't what they were telling you with the lung cancer. They were telling you it was much more serious.

Mary:

Right.

Andrew Schorr:

Okay. Well, I understand you're a pretty feisty person, Mary. So you were given that information and then what did you do?

Mary:

Well, my daughter said that's not acceptable. And she used to be the executive director of the Medical Center at University of Washington and was very familiar with Dr. Mulligan and Dr. Martins, the oncologist. And she contacted them and they said come on up. And we got on a plane, we and arrived there about noon. We met with them that afternoon. They came up with a plan and after a PET scan and less than a week, I was in treatment.

Andrew Schorr:

What was the plan, Mary?

Mary:

They decided that they would give me three rounds of chemo first to either slow down or see if the chemo would affect the cancer. And it did, and so then Dr. Mulligan came in with his magic surgery and hopefully I'm cancer-free.

Andrew Schorr:

Now, you had this surgery just on May 8th. We're just at the beginning of junior. Now how big a deal was the surgery? Chemo of course is a big deal, and I've been through it, but the surgery itself, we're going to talk about this minimally invasive approach. How big a deal was that, and how has the recovery been going?

Mary:

The recovery has good. It's certainly was not as bad as I was expecting, and I have a very small incision and few small other incisions where the camera equipment and the drains and things like that went, but you certainly don't have that big incision that goes from your back all the way around to your front. So I was out of the hospital in five days and up walking and doing things, and it was good. I've had to have a little oxygen at this elevation.

Andrew Schorr:

You're over a mile high, right?

Mary:

Yes, but I did not have to have any in Seattle at all.

Andrew Schorr:

That's a terrific story. And so Patrick gets his wife back. Now, I know your hope is you can play tennis and hiking. Does that seem realistic now after you recover?

Mary:

It certainly does. Dr. Mike promised me that he wasn't going to mess with my two-handed backhand.

Andrew Schorr:

Okay. Well, let's meet Dr. Mike. And I should mention Dr. Mike, Michael Mulligan, is one of my favorite guests on Patient Power. He's one of the leading lung transplant surgeons as well, so he flies all around and helps really bring a new life to so many people. Tell us though about this minimally invasive approach. We've heard this acronym VATS, so what does VATS stand for and what kind of a difference does it make to people like Mary, Dr. Mulligan?

What is VATS?

Dr. Mulligan:

VATS stands for video-assisted thoracic surgery, and it has been a technique or an approach that had evolved significantly over the last 16 years. Originally a video camera was inserted to sort of supplement what people might see through a standard incision. And please know that a standard incision is as Mary described, a fairly big and intrusive approach, meaning that the incision typically is about eight inches long, the muscles on your back or side are typically divided or stretched, and the rib is either cut or removed and then the remaining ribs are spread. And that trauma has traditionally been necessary to afford adequate surgical exposure.

But more recently that's been challenged. As videoscopic surgery was introduced there were a lot of naysayers that were probably justified, meaning that the same rigid principles of careful technique and adherence to fundamental cancer surgical principles was not consistent. The techniques were somewhat crude and rendered convenient for the minimal access that they were endeavoring to achieve, but I think that the operations from a cancer perspective were compromised. Over the last five to ten years that's changed dramatically. Now we are able with the current instrumentation and video technology to recapitulate the same surgical approach within the chest that we would typically have to achieve with a large incision using now only three or four one-inch or two-inch incisions with no rib spreading, no muscle division and much less patient morbidity.

So it's a totally new paradigm that uses radically different surgical techniques and approaches that has come to the fore really only in recent history. We now know that the cancer survival outcomes are every bit as good in fact sometimes better using the minimally invasive approach, perhaps because patients' immune systems are not knocked down by a lesser degree of traumatic instrumentation that's just used in the surgical approach. But overall it's gaining wider and wider acceptance. Even year-to-year we're seeing traditional surgeons convert or aspire to convert to less invasive approaches for the betterment of their patients.

Andrew Schorr:

Who is a candidate for it? So here we had Mary who was told, well, no surgery at all, and then you were able, working with Dr. Martins, the medical oncologist, to get Mary to a place where she was a candidate. So who is a candidate right off the back? Or working with a multidisciplinary team are there yet a wider group of people who could be a candidate?

Candidates for VATS

Dr. Mulligan:

I think that in a majority of centers those patients who have relatively small peripheral lesions or small cancers that are out in the periphery of the lung substance are often considered those that are typically appropriate for videoscopic surgery. Those that have advanced disease or extensive lymph node involvement or that have had chemotherapy or radiation therapy before surgery are most commonly turned down by other VATS surgeons.

Now, the range of expertise or experience that one has allows to you to extend the acceptability criteria for VATS candidates. And we or I happen to be one of the relatively small number of VATS surgeons who operate after induction chemotherapy for more advanced disease. Certainly in Mary case the vast majority of surgeons that would have seen her had they offered her surgery at all would have done it through an extended incision with significant rib spreading. The problem is that surgical trauma is much harder to bear in someone who has already had chemotherapy, and we now know that patients who've had a videoscopic approach as compared to a traditional approach tolerate having chemotherapy after surgery much better. So they're less beat up, if you will, by the operation, and their tolerance for the needed chemotherapy is better, and if they can get their therapy in and tolerate if the odds for a long-term improved survival are going to intuitively be better.

Andrew Schorr:

Wow. It sounds like a great approach, and we get obviously the skill and the art of medicine in the hands of the right surgeon as well so people need to explore that. This sound to me, Mary, just listening, this is definitely where you would recommend as a patient, I know I would echo it, where you go get a second opinion, and you really understand from different specialists what are your full range of options. Had you not asked you wouldn't have known, right?

Mary:

Oh, absolutely. I would have come home and said I guess, have a happy life, what's left of it. So I was very, very, very happy that I went to the U-Dub.

Andrew Schorr:

Well, certainly. We're going to take a short break, and afterwards we will begin to solicit your questions. You can give us a call. You can send us an e-mail to patientpower@seattlecca.org. Patientpower@seattlecca.org. You are listening to

Patient Power. We're visiting with Dr. Mike Mulligan, who is the director of minimally invasive thoracic surgery at the Seattle Cancer Care Alliance in the University of Washington and his patient who came from Arizona, Mary Dooley, who is now doing well just weeks after recovering from video-assisted thoracic surgery. We'll be back with much more Patient Power right after this.

Andrew Schorr:

Men have a one in two chance of developing cancer, women one in three. The good news is Seattle's Cancer Care Alliance is part of the world's largest cancer prevention program. A new clinic puts that expertise to work for you. Clinic director, Dr. Scott Ramsey.

Dr. Ramsey:

Our clinic is designed for people who have concerns about their risk for cancer, are unsure of what they can do to reduce their risk for cancer, and want to take proactive steps with a physician that has a lot of information that they can transfer to them.

Andrew Schorr:

Cancer can be prevented 50 to 70 percent of the time. Being proactive with doctors in the know makes good sense. I'm Andrew Schorr:

Andrew Schorr:

We're back live. On that Patient Power minute a second ago you heard an excerpt from a program that Dr. Mulligan and I had done months ago, sort of the short form of video-assisted thoracic surgery.

Dr. Mulligan, you keep perfecting it further. And I got the sense as you were talking about people who have now had some chemo before now you consider it an option. So where are we headed with this? As you keep moving the ball forward what changes have you been making and what's next?

Dr. Mulligan:

I've developed some new instrumentation and have some companies that are soliciting our feedback. We've done extended resections. The operative times are diminishing. And what's been truly rewarding is that I've had the opportunity more than certainly anyone in Seattle to train other surgeons in this technique, not only the residents and fellows that come through our training program but also visiting surgeons who aspire to adapt to the changing times and make that part of their armamentarium. They come up and spend a couple of days learning with me, and then if necessary and convenient I will make a trip down to their hospital and will proctor them while they're down there getting their started. So it's evolving the techniques, learning the best ways to teach it, and then disseminating that information so that we can make it more available to people throughout the communities around the country.

Andrew Schorr:

Now, of course as we talk about lung cancer we wish it didn't happen. Smoking is usually the villain. And Mary, I know you smoked for a long time. I'm not blaming you at all. I'd never want to say that, I'm blaming somebody, but lung cancer can follow for some people and other lung problems. Help us understand first of all just surgery in general. Where does that fit in the scheme of treatments for lung cancer? Is it the typical patient who is diagnosed for lung cancer where some sort of surgery would be recommended or is it the minority? Where does it fit in as a treatment modality?

Understanding Surgery for Lung Cancer Patients

Dr. Mulligan:

Well, it's a fundamental core of any attempt to try to cure non-small cell lung cancer. Unfortunately a large proportion of patients present once they're symptomatic, and their disease is too far advanced to be amenable to complete resection. If the disease has metastasized or is too locally advanced such that you can't clear all the disease, then surgery and particularly surgery alone are not going to impact patient survival. So we see a lot of patients that are resectable, but if you look at all of the lung cancers that present and are registered around the country unfortunately far too many of them present at a very advanced stage. But surgery whenever possible probably more than any other treatment modality affords the greatest chances for cure and local control of disease and prolongation of survival. It's the core.

Andrew Schorr:

Okay. So when you're able to do that surgery and you have, hopefully it is right there, it's not spread all over the lungs, what is the outlook? People say, well, Doctor, how much time do I have? What kind of quality of life will I have? I know it varies greatly by patient but give us some order of magnitude there.

Dr. Mulligan:

Well, the varies by stage, and we have population statistics that tell us that if we look at a thousand patients with stage I disease we expect roughly 65 percent of them to be alive in five years. That's data that's largely derived from the open surgical era or the traditional surgical era. There are studies that have published much more favorable survival outcomes for stage I disease with VATS. Some of them have been in the range of 75 percent, and one study as high as 90 percent five-year survival. We don't know quite why that is or if that's going to hold up when one looks at application of these techniques outside of the more experienced centers or expert centers, but we know that the results are at least as good.

Unfortunately as the stage of disease escalates to II, III and IV the survival goes down such that typically when one receives a diagnosis of stage IV lung cancer you're looking at five-year survival that's in the single digit percentages at best. And Mary was mis-staged. Mary is someone that does not have stage IV lung cancer. Mary is somebody that has probably one very early stage lung cancer and

a second stage lung cancer that was in an intermediate stage and her prognosis is dramatically better than had she been kept from us and simply gone home with that rendering of a stage IV.

Andrew Schorr:

I think there's some important Patient Power points I want to make. One is, and Mary's story really underscores it, I think when you're diagnosed with something super serious like this you always owe it to yourself to get a second opinion. Even if you get on a plane, as she did. I did too. So I really would recommend that.

Second of all, I hear time and time again somebody says, well, I have lung cancer. Well, first of all we know that there are different stages and biology can vary among tumor types and things like that. You got to know what you're dealing with, and so when you come to a place like the Seattle Cancer Care Alliance you're not just getting Dr. Mulligan, the surgeon, or Dr. Martins, the medical oncologist, but you're getting pathologists, radiologists, a whole team to first say what are we dealing with and then what do we recommend we do about it. So getting that right diagnosis it sounds like, Dr. Mulligan, is just critical. What are we really dealing with?

Dr. Mulligan:

Well, not only rendering the diagnosis accurately staging the disease but treatment planning is best done as part of a team. Lung cancer is, we're extending the use of chemotherapy at the earlier and earlier stage diseases. And frankly, one cannot make that decision in a vacuum, and I don't think those decisions should be made as the patient goes from clinic to clinic and gets, and serially obtains information and opinions that then one has to simulate. The best construct and the one that is used in all of the best cancer centers is where the providers may meet with the patient and the family one on one, but then all of the information is reviewed in the context of a clinical care conference or a tumor board where the case is reviewed, the patient is discussed, everyone's opinions and the relevant literature are presented, and then a consensus treatment plan is evolved that involves all of the best opinions and data. It simply must be part of state-of-the-art cancer treatment, and if it's not then the patient should seek the input from a center that does have that paradigm in play.

Andrew Schorr:

I have that image of all these people in white coats sitting in a room, and if it was my case of leukemia or Mary with lung cancer, whatever it is for our listeners, I kind of like all that brainpower brought to bear.

Dr. Mulligan:

Absolutely.

Andrew Schorr:

And I imagine you all have debates about what's right and then you get to some consensus.

Dr. Mulligan:

They're civil, but you know the fact that they get spirited attests to the fact that at least the people at the University of Washington are not only smart but they're passionate about what they do and they're fully invested in their patients' welfare. And the only reason that these things sometimes escalate and there's a clash of opinions is that people really hold to their convictions. But they respect each other because we've got such a world-class team that we're able to achieve things that I think often are either labeled as unobtainable or at least they're treated with a heavy dose of pessimism at other centers.

Andrew Schorr:

New, you being at an academic medical center you're very much involved in clinical trials. And we talked about this juncture between drug therapy, sometimes new approaches in radiation as well and then as you're moving with new surgical approaches how that all comes together. And also knowing that different people react to different drugs in different ways, and I know it varies in lung cancer. Mary said it at the outset, the first step was to see would she respond to chemotherapy and how well. And I'm sure you've seen variation in people. So that's part of the new game, isn't it, is looking at the biology of the tumors, seeing can you shrink them, how well does someone respond and then what are the surgical options that follow. Am I right?

Dr. Mulligan:

You are right. And for years I think the wise clinician has counseled patients to say, how am I going to do, Doctor, and the response should be, We have to see how you respond. Because if the biology of your tumor and its chemosensitivity is such that you get a dramatic response then statistics go out the window. You're a winner. You are a responder. It's been a bit of a black box. It's sort of a trial and error then that we use what has been demonstrated in population-based studies to have been shown to be effective strategies or effective chemotherapeutic regimens but now we're drilling down and trying to identify properties of the cells in individual patient's tumors that would predict responses to certain agents so that we're able to biologically tailor their chemotherapy and optimize their chances for meaningful response. This is where oncology is going, and it's an exciting time.

Andrew Schorr:

It sure is. Now, related to surgery with VATS, is it also appropriate for other things beyond lung cancer? How are you using it now as you expand its use?

Dr. Mulligan:

Actually it's interesting. I have a fellow who was operating with me today and we were doing an operation through a traditional incision for a variety of reasons, and he said that he couldn't remember the last time that we had done a regular incision for something other than a transplant. We're using it to diagnose and treat chest space infections, to remove other sorts of pulmonary nodules, to remove masses that are not necessarily within the lung but they're within the chest. We're using it

to immobilize the esophagus for resections and/or repairs, for a variety of diagnostic procedures of the lung and the lining inside the chest. It's an incredibly common technology, at least in my practice.

Andrew Schorr:

Mike, let's get a little more into the details. Tell us what the prep is and how long the procedure takes versus sort of the full-blown really make a big incision with people. How is it different?

Dr. Mulligan:

My interest in this really developed from my experience in transplantation. And you have to imagine that when one does a traditional cancer operation the patient is positioned on their side. The chest is opened and then the tissues and structures are approached from lateral to medial, or from outer to more central, and typically one begins by trying to separate some of the lung tissue where it's separated along lines or fissures to control certain vessels and there's a rigid sequence that's been taught for years.

When you do it with a transplant, when you approach having to rapidly excise a native lung for transplantation, you have to develop strategies that allow you to move quickly without getting into much bleeding at all and it has to safely protect those structures that you intend to leave behind. As the patient is positioned for transplantation they're placed on their back, and when patients are placed on their back the structures that are presenting themselves have to be revealed from anterior to posterior. So I had to adapt my surgical strategies to do this while I was doing transplantation and I realized that I could probably see these things through a relatively small incision. One thing led to another and then I was looking at them with a camera.

Well, it turns out that this is the more modern approach to lung resections using VATS. The traditional sequence is abandoned, and one follows a sequence from anterior, not back to front, to resect one structure and then move on to the next one that is then revealed to you. The problem with this is that the sequence is different than surgeons are used to, and they're also not used to seeing the anatomy in this way. So one has to develop an entirely new and in my opinion a more comprehensive appreciation for dimensional anatomy, for three-dimensional anatomy in order to feel confident and in order to be safe in the execution of VATS technique. This is an entirely different approach. We achieve the same goals, the same margins, the respect to lymph nodes and tissue planes, but we've turned the surgical anatomy on its ear with this approach.

Andrew Schorr:

That's so cool. By the way, for our listeners if you hear a phone ringing behind Dr. Mulligan, he's a busy guy in that he does lung transplants where people, patients come throughout the western United States as well as he does the video-assisted thoracic surgery. And we're delighted that he has squeezed in the time where we can have him with us tonight.

So really if you have questions you want to give us a call fast or send an e-mail to patientpower@seattlecca.org. We're going to be back with more with Dr. Mulligan before he has to go. He does have to leave us just before the end. And also we'll be back with Mary Dooley who has lived through all this and hopefully for a long life of hiking with her husband. We'll be right back.

Andrew Schorr:

Welcome back to our live broadcast, Patient Power, sponsored by the Seattle Cancer Care Alliance. So there's been a lot in the news about brain tumors with Senator Ted Kennedy diagnosed with one and then having surgery just a few days ago. Well, two weeks from tonight we will have a program with experts from the Seattle Cancer Care Alliance in brain tumors and brain surgeons, and we will talk about that and then help people who have such a diagnosis have reasonable expectations what can be done, what can't be done, what are your options, what about recovery. So that's all in two weeks at this time on Patient Power.

But let's continue our discussion on video-assisted thoracic surgery, and we mentioned that our patient, Mary Dooley, lives down in Prescott, Arizona. She's fortunate though to have a daughter who worked at the University of Washington Medical Center, so when Mary, Mom, was diagnosed with lung cancer with no symptoms and then was told her cancer was inoperable, daughter Kathleen said, Wait a minute. You are checking further. And she was aware that there was a wonderful, talented team related to lung cancer here in Seattle at the Seattle Cancer Care Alliance. We got this e-mail just a moment ago from Kathleen. Mary, here's what she wrote. "I am Mary's daughter and want to thank my mom for her courage and Dr. Mulligan for being our hero and for his outstanding surgical expertise. He and Dr. Martins are a true dream team." Wow, makes you feel good.

So, Mary, so your daughter guided you. What would you say to other people in getting the best care? What advice would you give?

Mary:

Have a daughter like mine.

Andrew Schorr:

Have Kathleen, yeah.

Mary:

Right. Well, she has all the knowledge and knew all the right people. And I'm sure it's very hard if you don't have someone leading you, but don't be afraid to question the doctors or go someplace else. I think a lot of people. . .

Andrew Schorr:

Right. Go someplace reputable.

Mary:

Right.

Andrew Schorr:

And I want to make a couple of points. So there you are, you're 77, and maybe you're not used to like scouring the internet and running around. And certainly you grew up in a generation when people, you went to the doctor and the doctor said I think we should do this, and usually that's where it ended. We sort of have this new age of consumerism, and so here you have an adult daughter who says, Hey, Mom, we need to look at this. So you need to take this in from people.

And actually Dr. Silbergeld, who we'll have on about brain cancer in a couple of weeks, he was mentioning to me over the phone that though also when you hit the internet there can be a lot of baloney out there, and you have a serious diagnosis and it can create false hope. So you want to go to very reputable institution. University of Washington and Seattle Cancer Care Alliance is world class. That's a place to go. There are others that you can see, but it's not just anywhere. And I think as we have been hearing from Dr. Mulligan, he has been perfecting the art of this approach, and he's eager to train others and other people have mentored him. Now he continues to advance it himself. There are many people like that so you need to seek that out.

Well, let's go on with Dr. Mulligan. So, Dr. Mulligan, we were talking about other conditions, and you were talking about how you had this sort of epiphany after a lung transplant of new ways you could do it. I have this image of you being like a Star Wars fighter pilot who can fly through all these nooks and crannies and heads up displays and all this kind of stuff and feel confident where you are. So what kind of illnesses then, we talked about lung cancer, you mentioned some others. So for people who are may have beyond a cancer diagnosis what sort of diagnoses might this apply to?

Dr. Mulligan:

Well, first of all, I'd like you, Andrew, to call my four-year-old and explain to him that daddy's very much like Luke Skywalker. I'd get a lot of mileage out of that.

Andrew Schorr:

There you go. You'd be a hero.

Dr. Mulligan:

Basically the pleural space is the space around the lung between the lung and the ribs on the inside of the chest. And any time that gets infected or filled with fluid or there develops a defect in the surface of the lungs such that air keeps accumulating in there, those things, those pleural space issues where almost always amenable to a VATS treatment as opposed to an open thoracotomy approach. Things where the lung has a nodule in it or there's some abnormality with the lung tissue and we need to find out whether it's an infection or whether it's a malignancy or what have you, a diagnostic resection or a diagnostic lung biopsy, far and away best done with that, not an open approach.

And things that involve the other glands within the chest such as the thymus gland or the lymph nodes that are in the chest that need to be biopsied, VATS is great for

that. And some of you may have heard about the operations that are done for excessive sweating in the hands and underarms, so-called hyperhidrosis. Well, that too is a VATS operation, and typically I am doing that with two five millimeter incisions, incisions that you can barely see afterwards with what of late has been a hundred percent success rate, where patients are able to experience dry underarms and hands and avoid the social embarrassment and stress that comes along with excessive sweating immediately after surgery and for the rest of their lives. So there are myriad things, and those are things just off the top of my head, but we're using this all the time.

Andrew Schorr:

Neat. So does that mean it can be repeated? So, god forbid, if Mary needed surgery again could it be repeated or in other situations?

Reoperative VATS Procedures

Dr. Mulligan:

Well, you know in the majority of centers there aren't people who have a concentrated experience in VATS like I do at the U-Dub, and you wouldn't want to take on situations where the lung is too densely scarred to the chest wall because that requires certain strategies and techniques to take down that scarring safely so that you can then conduct the VATS operation. So most centers, most surgeons would say that prior surgery or prior instrumentation or trauma that led to scarring would preclude the use of VATS.

That being said, I have done reoperative VATS procedures on numerous occasions, and I've even gone back in and done VATS resections on patients who had prior thoracotomies. I had one patient, for example, who had an attempted lung resection for lung cancer and the resection was incomplete and it had been done through a large open incision. She had such pain and suffering from that that she was pleading to avoid another thoracotomy. We were able to oblige her and do her operation VATS, and she left the hospital with very little discomfort and a very brief recovery time.

Andrew Schorr:

Now, I know in the area of cardiac care they try to do angioplasty and go up through a vein I guess it is or an artery, but up from the groin, and it used to be that they'd have a whole heart surgery team standing by in case they needed to do an open surgery. How often have you had to go from VATS, you start doing VATS, and then you have to say, no, we have to do this as a big open surgery? Does that happen?

Dr. Mulligan:

It does happen and in the literature that has been published from the best centers, the most experienced centers, that conversion rate we call it from VATS to open ranges between 11 and 17 percent. Thankfully in my practice that conversion rate is about four percent. Typically the reasons for conversion would be that the disease is more advanced than anticipated or there has been some structural injury

or perhaps some bleeding that has necessitated more aggressive and urgent exposure and control. I counsel my patients well in advance, and I'm typically able to identify those that are not going to be amenable to VATS so that we don't run into conversions very often, and we have not had those sorts of an anatomic complications or bleeding episodes that have mandated that.

Andrew Schorr:

All right. And what would you say, I have a bunch of questions for you, but what's the most common question you seem to get. What do people seem to worry about the most?

Dr. Mulligan:

Is this going to cause me a lot of pain? And how soon can I get back to regular activity? And my experience has been that patients are going to have pain. If you're going to incise and create a port that is effectively a stab injury between the ribs and you're going to do it two, three or four times, that's going to hurt. If you put instruments in there and you're twisting and moving them around, that's going to compound issues. So I think in the first several weeks after surgery there's going to be pain.

But if you look at the published experience with VATS versus open techniques, the experience of pain starts to really separate at about the three-week mark, wherein you may see a number of VATS patients that are on minimal or no narcotics or at times nothing at all for pain compared to the open thoracotomy or rib spreading patients that are very often coming back repeatedly for weeks or even months requesting, appropriately requesting renewals of their medications including narcotics for pain.

Andrew Schorr:

Here's a question we got in from Sam in Boulder City, Nevada. And of course he wants to know about his own reasonable situation, so we'll generalize it a bit. "I have a 1.8 centimeter lower left lobe mass seen in CT scan. It's been there for a year now. This December report showed a .5 millimeter increase in size. The mass is very near the heart, and the risk is high if biopsy will be done. I have no signs and symptoms. I'm PPD positive. A year ago showed an increase in uptake in a PET scan. What is likely that it can be a primary lung cancer? And do I need to go for surgery right away to remove it?"

Dr. Mulligan:

Well, he's got some concerning factors at risk. I don't recall if he said he was a smoker or not, but the fact that it has increased in size and if it were an old, burned-out infectious nodule it should not be increasing in size, and the fact that he has increased uptake on a PET scan, both suggest that this is a lung cancer. The larger question is there anything else diagnostically that can or should be done prior to removal. And what would be left is some form of tissue diagnosis. If he's had a CAT scan and he's had a PET scan, these peripheral nodules are infrequently amenable to transbronchial or bronchoscopic biopsy, and then you're talking about a needle biopsy perhaps that would be done under CT or CAT scan guidance.

The problem is that in patients who are fit for surgery, those that can tolerate the operation I'm not sure what's to be gained from a needle biopsy. Now, that may seem aggressive but let me play out this scenario for you. If you get a needle biopsy and the needle biopsy says it's cancer you have to take it out. If you get a needle biopsy and they don't find cancerous cells but your index of suspicion is high, it may be that you have a so-called sampling error that as the needle passed into the nodule or near the nodule they did not happen to aspirate or recover malignant cells. That's not an infrequent occurrence, and it does not therefore conclusively rule out the possibility that that is a cancer. The only way to conclusively rule out cancer is to remove it and to look at the entire specimen. Now, that is often readily achievable with a videoscopic wedge resection where very minimal amounts of lung tissue are sacrificed, but your diagnostic sensitivity is 100 percent.

Andrew Schorr:

Wow. Well, these are some great answers. We're going to take a break and when we come back we'll give you some more questions, Dr. Mulligan. I want to thank you so much for your time. We'll visit with Mary again. But it's a fascinating area of progress. We're talking about video-assisted thoracic surgery, obviously applying it to cancer, but as you've heard with Dr. Mike Mulligan from the Seattle Cancer Care Alliance applying it to many situations as well. So you need to look into it, you need to seek out an experienced surgeon. He's been training a lot, and come to Seattle or if you are in Seattle I'd certainly recommend seeing him, and you hear it's part of a whole team that discusses your case. We'll be back with more of our Seattle Cancer Care Alliance Patient Power broadcast in just a minute. You're still welcome to give us a call. Thank you so much for being with us tonight too. We'll be right back.

Andrew Schorr:

Hello again. Let's fire some questions at you. Ready to go?

Dr. Mulligan:

Absolutely. Let's do it.

Andrew Schorr:

Okay. Here's a question from Brenda in Kingman, Arizona. She writes, "I'm 39 years old and was diagnosed with myasthenia gravis. I was told that I needed thymectomy and was considering the VATS procedure. Do you know if it would be common for the phrenic nerve to be severed during surgery using the VATS surgery for thymectomy. I used to work in surgery and I know that the phrenic nerve is in the area that would be worked on. Just want to make sure there's no possible way for a mess-up to occur."

Dr. Mulligan:

Well, there's had no such thing as a guarantee in medicine or surgery. That being said, in my opinion using a videoscopic approach to thymectomy affords better visualization of the phrenic nerve. In fact it is the first landmark that is discretely identified before any dissective or resective portion of the operation is begun. What

you do is, typically I do this from the right side is to identify the phrenic nerve and then open the tissues in front of that, keeping the phrenic nerve out of harm's way. And so the entire operation should be done anterior to the phrenic nerve. If the surgeon is skilled in videoscopic surgery and knows his anatomy and follows that basic guiding principle, the phrenic nerve should be kept quite safe. I myself have never had it come anywhere near harm's way, and so I think it's a very reliable, safe procedure. But again there's no such thing as a guarantee.

Andrew Schorr:

All right. Here's a question we got in from Linda in Fallon, Nevada. She writes, "My husband was diagnosed with lung cancer. He has a tumor the size of a golf ball, very well defined and not metastasized. Due to COPD he has only 25 to 35 percent lung capacity, and the doctor thinks he would not survive surgery. He's 64 years old. A life-long smoker. What are the likely options? For instance is the Gamma Knife or thermal ablation technology viable for lung cancer?"

Dr. Mulligan:

Well, those technologists are viable. Radio frequency ablation is not currently FDA approved in the lung although there are centers that are doing it. But the bog standard remains surgical resection, and he does have a number of options that could be considered. One is to do a so-called wedge resection where the tumor itself is removed but the majority of lung tissue surrounding it is actually left behind, and one hopes only then to achieve a negative margin around the tumor and that could suffice.

The other thing to consider is that very often the emphysema may be distributed in such a way that the lobe of the lung that is involved with tumor is actually the lung that is most heavily involved with emphysema. In which case removing it may have very little effect on his lung function. In fact operations that are considered lung reduction for emphysema use that principle in an effort to improve lung function. So he may actually experience a paradoxical improvement in his lung function by removing some of the worst tissue that is affected by emphysema.

The last option to consider is transplantation, and we now know from publications that have only recently come to light that patients that have early-stage lung cancers that are resected as the lungs are removed for transplantation have outcomes that are equivalent to disease and matched to patients who get transplanted without any evidence of cancer. So he's got a sub anatomic or wedge resection, a lung reduction type of operation, a careful videoscopic lobectomy or open lobectomy or transplant.

And one quick note on videoscopic approaches. It's recently been shown that those patients that have impaired underlying function or are otherwise frail in some way may actually benefit and be better served by the less invasive procedures such as videoscopic or video-assisted thoracic surgery.

Andrew Schorr:

Here's a question about talc. Carl from Delano, California writes in. He's saying, "I was wondering how successful talc is in treating pneumothorax." He said also, "Do patients usually have any lingering side effects from the talc such as pain or burning in the chest that lasts for months or longer?" He said he's had surgery for pneumothorax and may have it again and they were considering putting talc in, and he wonders how safe it is. And also he wonders he was told that it's harder for a surgeon to operate on a patient's chest who has previously received talc due to the seal it creates and can a VATS procedure still be done after talc has been put in.

Dr. Mulligan:

He's a very astute patient, and he's asked a lot of very good questions about this issue. Talc does work. It's very effective at scarring the lung to the chest wall to prevent further collapse or pneumothorax. The problem is is that it is probably too aggressive for the indication it's being used for, meaning that the degree of scarring and inflammation that's induced is profound. Not only would subsequent videoscopic surgery be unlikely to be achievable it's unlikely that you would be able to get back in there safely even using a large thoracotomy incision. In some centers patients that are received talc pleurodesis, as it's called, are denied access for transplantation down the line. So I do not generally recommend the use of talc for benign disease.

It's used to palliate folks that have malignant diffusions as part of a very advanced cancer where fluid keeps accumulating in the chest and one wants to adhere the lung to the chest wall so that the potential space where that fluid accumulates no longer exists. But using it for patients that we expect to be alive for years and years to come is not terribly appropriate.

As far as the lingering side effects or downside to this. I think it could be considerable because the inflammation that it incites, the pleurisy that it incites tend to leave patients with a lingering sense of chest heaviness or aching that can persist for months.

Andrew Schorr:

Dr. Michael Mulligan, director of minimally invasive thoracic surgery, you always have such great explanations on Patient Power. Thank you so much for being with us tonight.

Dr. Mulligan:

You're welcome, Andrew. It's always a pleasure to chat with you.

Andrew Schorr:

Thank you. Remember the replays are posted at sccapatientpower.org, patientpower.info and then on the new Microsoft health search engine, health.live.com. Thank you so much for being with us, and I think we can all take a lot of encouragement from this. Remember, knowledge can be the best medicine of all. Broadcasting live from Seattle, I'm Andrew Schorr. Have a good night.



Please remember the opinions expressed on Patient Power are not necessarily the views of Seattle Cancer Care Alliance, its medical staff or Patient Power. Our discussions are not a substitute for seeking medical advice or care from your own doctor. That's how you'll get care that's most appropriate for you.