From Heartburn to Esophageal Cancer
Webcast
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Introduction

Andrew Schorr:
Five percent of Americans will be diagnosed with something called Barrett's esophagus, where acid reflux damages the lining of the esophageal tissue, and it sets up the risk for potentially deadly esophageal cancer. We're going to give you answers about acid reflux, esophageal lining changes and Barrett's and the latest treatment approaches. It's all coming up next on Patient Power.

Hello, and thank you for joining us once again on Patient Power sponsored by Northwestern Memorial Hospital. I'm Andrew Schorr. I'm broadcasting from a blooming springtime here in Seattle, but I'm talking to folks all around Chicago, actually all around the world, and we're talking about something I've always wondered about, and that is something called Barrett's esophagus. I have one friend who was followed for it for years, and we're going to understand what that is. We're going to understand the connection with acid reflux and even GERD, which is a diagnosis as well, and we're also going to know about the risk of esophageal cancer, which is a poor prognosis cancer so you do not want that to happen.

All right. I want you to meet someone who is on down the road with this and also benefited from a new procedure for Barrett's esophagus. So joining us from Aurora, Illinois, down the road from Chicago about an hour, is Steve Waltz. Steve is 70 years old, right, Steve?

Steve:
That is correct.

Persistent Heartburn: A Symptom of Bigger Problems

Andrew Schorr:
Okay. And for many years you were in purchasing at Caterpillar, dealing with heavy construction equipment, but along the way you started to develop heartburn, I guess, right? What would you do for the heartburn?

Steve:
Actually, I would call it more like indigestion. I would just take, oh, maybe a little teaspoon of baking soda in a glass of water and that sort of neutralized it and smoothed things over.
Andrew Schorr:
All right. Now, as years went on did that always work, or did it get to the point where it just wasn't doing the job?

Steve:
It started getting worse and, yeah, the baking soda was a little less effective. And I happened to be in to a local gastroenterologist's office and he said we have something better for that, so he started giving me some of these new proton pump inhibitor pills, and they seemed to work fairly good. But meanwhile he kept watching by doing endoscopies, kept looking down into my esophagus and monitoring things, and it still kept getting worse. And finally it got to a point where he says we have high-grade dysplasia now and Barrett's esophagus.

Andrew Schorr:
And you knew that was more serious.

Steve:
Very, yes. And he made the point to me that up to this point the treatment processes available were not very good. And he said they had this new one in Chicago with Dr. Komanduri which seemed to be having pretty good potential called radiofrequency ablation.

Andrew Schorr:
We're going to hear about that tonight.

Steve:
So he sent me in to Chicago to see Dr. Komanduri.

Andrew Schorr:
And you had the radiofrequency ablation, and you've had little touch-ups I understand along the way. How are you doing today?

Steve:
Today, knock on wood, I believe I am completely cured of any dysplasia, any Barrett's esophagus, and I will have another six-month follow-up coming up in June to verify that everything is still good and the way it should be.

Andrew Schorr:
Wow. Well, it sounds likes modern technology has really helped you a lot.

Steve:
Oh, yes. I consider it a lifesaver for me.

Andrew Schorr:
Really. Do you? Well, radiofrequency ablation, was that a big deal having that?
Steve:
Actually, no. I actually was very nervous about it first of all. I made a special treat in to see Dr. Komanduri to find out what it was, and told me what it was and everything and convinced me it was a good thing to do. So I went in there, they basically put you to sleep. You don't feel anything anyway, and they're sort of computer controlled on the original burn. They determine the diameter of your esophagus and that sort of thing, and the doctor can give you more details on that.

Andrew Schorr:
Yeah, we're going to get the whole story, but from your point of view you came out of it just fine. And how about eating now? Can you eat what you want?

Steve:
Yes, sir. I have no limitations or anything that I'm aware of.

Andrew Schorr:
Wow. So I know with your wife Pat all together you've got eight kids and 15 grandchildren, so you're always having these big family dinners, right? So you can have whatever you want?

Steve:
Well, you always have to use moderation in anything you do.

Andrew Schorr:
Okay. A lot of birthday parties, I bet, though. All right. Let's meet your doctor, Steve.

Steve:
Sure.

Andrew Schorr:
So joining also from Chicago, from Northwestern Memorial Hospital is an interventional gastroenterologist, and it's Steve Waltz's doctor, Dr. Sri Komanduri. He is also an assistant professor of medicine at Northwestern University's Feinberg School of Medicine.

So, Dr. Komanduri, I was giving the statistic earlier, five percent of the population with Barrett's esophagus, that's actually a significant number. What are the symptoms of that?

Dr. Komanduri:
That's a great question. Perhaps the most frightening part of Barrett's esophagus, first of all, is that up to about 25 percent of our patients don't have any symptoms at all. But leading into your question, the most common symptom that we see and what we call, or underlies of constellation of gastroesophageal reflux, or GERD, is
heartburn. And that's about 60 to 70 percent of patients who have this GERD complex, which is acid reflux, is the other name for it, but that's the primary symptom.

Interestingly, beyond that there are lots of other symptoms that can manifest solely in GERD, and specifically other GI tract symptoms like nausea, stomach pain, things that we think of as being almost kind of day-to-day nuisances that don't necessarily mean much but can actually mean significant disease. Secondly, we can have lots of symptoms associated with the lungs and the throat, for example, like hoarseness, chronic cough and even asthma-type symptoms that can be the only symptoms associated with GERD and ultimately giving you this Barrett's esophagus. And the hallmark of all this is that what's causing the link between GERD and Barrett's is the acid exposure, and exposure of the esophagus to acid, whatever the symptoms may be for that particular patient can lead to Barrett's esophagus.

Andrew Schorr:
So our stomachs are built for acid, right. It's kind of like the car battery is built for acid, and I take it that when the acid comes out the top and gets to the esophagus the lining was not built for acid, is that right?

Dr. Komanduri:
Yes, that's correct. The stomach is normally the reservoir where acid is stored, and between the stomach and the esophagus there is a valve which is called the lower . It's like any other sphincter that we have in the body that normally prevents and it functions to prevent reflux of acid into that area precisely because of what you said. Acid can cause changes in the lining anywhere from inflammation locally to this Barrett's esophagus.

Causes

Andrew Schorr:
All right. Let's talk about what affects that sphincter. So I know there's an obesity problem. And it seems like whenever they show usually the TV commercials for, you know, Zantac or all these different products that you can take or the prescription ones, usually the guy is eating pepperoni pizza, and I always think that it's the food that is acidic somehow, and that just somehow escapes. But there are foods, chocolate, coffee, is it acid that's at work, or is it doing something to the way our body holds things in the stomach? Help us understand the difference.

Dr. Komanduri:
We call a lot of these things in the one group called triggers, so things that trigger gastroesophageal reflux disease in general. The first thing we all hear about is the different types of foods, like you said, like the chocolates, the caffeinated beverage, the alcohol, the pasta sauce that we all love. All these things don't directly cause increased acidity by the nature of the food, but instead they each have different chemicals which cause relaxation, inappropriate relaxation of that sphincter we
were talking about. So when you have inappropriate relaxation there is at that time reflux per se or acid coming right up into the esophagus when it's not supposed to. The only time we consider relaxation of that sphincter normal, obviously, is when you eat something and we need the sphincter to relax to let the food go through into the stomach. That's the normal physiology.

But any of these foods that are at high risk for reflux or heartburn are technically not acidic in nature per se, although some of them may be, they really are working on that sphincter and causing it to inappropriately relax and let the normal acid that's in the stomach come up into the esophagus. There is a misnomer that reflux and heartburn is always based on making too much acid, and that's not at all the case. Most of the time it's the normal acid that inappropriately comes up into the esophagus and causes the problem.

To your second point, body habitus or obesity, another aspect to these types of symptoms is anything that would increase the pressure on the abdomen, or the intraabdominal pressure as we call it, which would then cause reflux of acid getting pushed, essentially compressing the stomach and pushing acid back up into the esophagus. And we see this with obesity and actually have found a link between obesity and increased reflux and Barrett's esophagus. This is also mimicked, for example, in pregnancy, and that's why a lot of pregnant women experience heartburn.

Andrew Schorr:
Okay. And heartburn is basically the feeling of the acid hitting the lining that's not prepared for it?

Dr. Komanduri:
Yes. The heartburn is what we describe as burning behind the breastbone or essentially the burning sensation in the esophagus that we see as the most common presenting symptom, and again not the only symptom but the most common symptom of gastroesophageal reflux.

Andrew Schorr:
All right. Now, let's understand more about Barrett's esophagus. So I had a long talk not too long ago with my friend Lee where I live out here, and he as a college student I think would just finding himself needing to take Tums all the time, just try to reduce the acid or the effect of the acid, and ultimately he was diagnosed with Barrett's esophagus and followed for many years, and we'll tell more of the story along the way. But the point is does it take a long time for the effect of the acid to lead to more significant change and Barrett's esophagus and if it is just time or does it vary by person?

Dr. Komanduri:
You know, that's a great question. The natural history of acid exposure and Barrett's is very poorly understood. Part of that reason is a majority of times we
make a diagnosis of Barrett's esophagus or esophageal cancer patients have had symptoms for a long period of time. That being said, there's studies that have suggested that the first time somebody goes under endoscopy and Barrett's is found up to five percent of those patients have advanced disease. In other words, they have bad cells that are either precancerous or cancerous. So in those patients who just got diagnosed because of recent symptoms it would tell you that some of these patients don't need too long of an exposure to develop Barrett's esophagus.

On the other hand, some patients we see have acid exposure for ten years, and we all hear those classic stories or we may be those people who take the Tums whenever they need it or the Rolaids after going out that evening, but these patients have gone years and years and still haven't developed any type of Barrett's or advanced type of disease in terms of cancer. So it's a wide variety, and it can happen very quickly but it can also be a prolonged acid exposure that's needed. The bottom line to that question is any unabated acid into that esophagus for any interval of time can be dangerous.

Andrew Schorr:
All right. So Steve was saying that his community gastroenterologist was following him for a while with endoscopy. So what are you looking for? What changes are you looking for where you say now it's more advanced and we need to intervene?

Dr. Komanduri:
When we diagnose Barrett's esophagus we visually can see something endoscopically that looks different, that looks not like the normal lining of the esophagus. That being said, in order to differentiate this from just Barrett's esophagus and something more advanced, which is what we term dysplasia, and dysplasia means the progression from Barrett's to cancer, and we further subclassify that as low-grade dysplasia and high-grade dysplasia, and as you move down that pathway you get closer to cancer. These diagnoses can only be seen under a microscope. In other words, they are not usually visible to the naked eye in the Barrett's, so they can occur anywhere in that patients where the patient may have Barrett's esophagus, and the only way we can tell you if you have dysplasia or not is to take the biopsies and have the pathologist analyze it under a microscope.

That being said, there are some limitations, and that's why there are these surveillance guidelines. In other words, when we take these biopsies we cannot technically take a biopsy from every inch or every millimeter of your Barrett's esophagus. It's just not possible and practical. That being said, like not being able to visualize the high-risk areas we could theoretically miss certain areas that have dysplasia, and this is one of our problems with Barrett's esophagus. Ultimately it comes down to our pathologists looking under the microscope and telling us if there is dysplasia or even Barrett's esophagus. Another limitation is the pathologists themselves, even the expert pathologists can't always agree on a diagnosis of dysplasia because it is a difficult diagnosis.
For those two reasons, which ultimately make our diagnosis of this condition tricky and difficult, we have these guidelines for surveillance, meaning every so often, whether it's six months to three years depending on the type of disease you have, we do the endoscopy and take biopsies with the ultimate hope that if you do have some progression of disease that we'll pick it up in these biopsies.

**Andrew Schorr:**
Already I've got a million questions but, but we're going to take a quick break. And I bet you, our listeners, have questions too, and here is how you can ask them. First of all, you can call the studio and just like any talk show go on the air. Here's the number. 877-711-5611. 877-711-5611. Or you can send us an e-mail, N-M-H for Northwestern Memorial Hospital, nmh@patientpower.info. We will be right back as we continue our discussion, From Heartburn to Esophageal Cancer, and a lot of Barrett’s esophagus and surveillance and treatment in between. It's all sponsored by Northwestern Memorial Hospital. Stay with us.

**Adverse Effects of Acid**

**Andrew Schorr:**
Welcome back to our live broadcast discussing heartburn, Barrett's esophagus, and trying to lower your risk of esophageal cancer, also about the latest ways of dealing with it. And we have with us Steve Waltz who joins us from Aurora, Illinois. Steve was treated with radiofrequency ablation. We're going to learn about it along the way. And also with us is his physician who is a subspecialist who deals with this all the time. He's an interventional gastroenterologist. I didn't even know about interventional gastroenterologists until I started thinking about specialists who deal with it all the time, and Dr. Sri Komanduri is such a physician and a specialist.

So, Dr. Komanduri, we were talking just before the break about this. I want to just recap a little so I understand. So a lot of us, millions of us, get heartburn. And that is the acid going the wrong way on a one-way street coming up through the sphincter that's relaxed, maybe inappropriately, right? And we feel it on the tissue of the esophagus which really wasn't built for the acid, so we feel heartburn. In some people that causes various levels of cell changes, and if it gets, progresses quite a lot then that could progress to esophageal cancer. And so you have these terms along the way.

Help us understand the different terms. Like one of the terms I've heard is some sort of erosion. Take us through what happens when the cells are affected by the acid, just the continuum, if you will.

**Dr. Komanduri:**
Sure. So when we start off in normal esophagus we have, just again these terms that may come up, the normal lining of the esophagus is called squamous mucosa, and mucosa just means the lining of any area of the GI tract. When there are changes that occur, any part of the GI tract when we progress to cancer there's
usually called something called inflammation cancer pathway, so this is very similar. So whenever there is an exposure such as acid, the first step in this process is inflammation. And by inflammation what we mean is something called erosive esophagitis, or these erosions. Endoscopically when we do a procedure we see, essentially like what we would see with like an ulcer in the stomach, we see some ulcerations in the esophagus. These are then biopsied and these do not show any Barrett's esophagus usually or any cancer, but what they show is just inflammation.

Now, when that inflammation progresses even sometimes on treatment, the next step, the next process that can occur is Barrett's esophagus. So at least in a rudimentary understanding of how Barrett's works, we have a feeling that it goes from these erosions or this erosive esophagitis or inflammation to this change in lining, which is defined as looking like an intestinal cell. So the terminology we use for Barrett's esophagus is called intestinal metaplasia, intestinal meaning looking like intestine, metaplasia just means change. And that's the technical definition of Barrett's. So essentially it's a continuum from normal to inflammation or erosive disease to Barrett's. And then the metaplasia can become what we call dysplasia, which is bad change, and then that goes from low-grade to high-grade dysplasia and then ultimately can become cancer.

**Progression to Esophageal Cancer**

**Andrew Schorr:**
Wow. Okay. Now, Steve, if you're still with us, what did they say your situation had changed to? What did the gastroenterologist tell you it had changed to where he wanted you to go see Dr. Komanduri?

**Steve:**
I moved from low-grade dysplasia to high-grade dysplasia, and that's more of a cancerous situation.

**Andrew Schorr:**
Yeah. You didn't want to go any further than that.

**Steve:**
That is correct.

**Andrew Schorr:**
So, Dr. Komanduri, before we get to radiofrequency ablation, if somebody develops esophageal cancer, and as you said some people, 25 percent don't have any symptoms and it just progresses and they don't even know it, what would be the treatment traditionally?
**Dr. Komanduri:**
The treatment of choice for once we develop esophageal cancer or the best-case scenario treatment would be what is called esophagectomy or removal of the esophagus surgically. The other options are what are available for other cancers like chemotherapy and radiation. The unfortunate aspect is, and precisely based on what we’ve said and what you just restated, that a lot of times when you don’t have symptoms or we dismiss our heartburn as just, oh, another nuisance and we present at those times with cancer, a majority of these cancers present in a setting where the disease has spread somewhere, whether it's locally advanced or spread throughout the body which ultimately limits the number of patients who can have success with this surgery.

As a result, when a patient gets to a point of esophageal cancer, despite whatever treatment, whether it's surgery and removal of the esophagus or chemotherapy, the five-year survival still remains at about 20 percent, which is obviously miserably low in terms of what we would like it to be. So that is why a lot of the focus is on the precursor conditions and trying to prevent anyone from even getting to that point.

**Treating Barrett’s Esophagus**

**Andrew Schorr:**
All right. Now, we’re going to talk about radiofrequency ablation, but there have been other treatments that have been tried before. I think photodynamic therapy. What are ones that are sort of falling by the wayside that have been used up until now?

**Dr. Komanduri:**
Sure. People have always had the thought process that we could potentially burn away some of these bad cells, and we have different devices that we use throughout the body in gastroenterology to do this for other things. And there's basic ablative or burning technologies like electrocoagulation and argon plasma coagulation. These are things we utilize in the GI tract, for example if somebody has a bleeding ulcer, to treat those on a normal, everyday basis. Those are fraught because in general when we're burning we don't have any sense of how deep we're burning. It's not something that can be reproduced on a daily basis, and different endoscopists or different doctors will burn at different levels simply because it's just a touch and burn type of thing. Those quickly were not very effective, as you can imagine, and grew out of favor.

From that point further technology developed was photodynamic therapy. This type of therapy is based on ultraviolet light, and what happens is the patient is injected through an IV with what is called a photosensitizing agent, a chemical that makes the esophagus more sensitive to the ultraviolet light. And then there's a special probe that's inserted through the scope itself when we're down there that then picks up this photosensitizing agent and provides light therapy to that area.
The problems that have occurred with photodynamic therapy is that it tended to burn too deep, and when you burn too deep in the esophagus you can end up with something called a stricture. And a stricture is a scarring within the esophagus that can result in patients being unable to eat their food and getting food stuck in their esophagus and ultimately requiring more treatment to open that up.

The other thing is with photodynamic therapy, when patients are given this photosensitizing agent they have to remain inside because the light from the sun actually can cause significant side effects and give them a very long-lasting rash that can be very painful. So it limits them in a lot of different ways, but the biggest aspect was this stricture formation that has put that out of favor. That was happening in up to 30 percent of patients, which was too high in our opinions.

And then from that we developed the technology which we're going to discuss, which is radiofrequency ablation.

Andrew Schorr: All right. Let's go. So in all of these, whether it was the photodynamic therapy or now radiofrequency ablation, I take it that you do it like when somebody is having endoscopy, that there's a tube that goes down your throat, you're anesthetized somehow, and then you're able to deliver the therapy. If I've got that right then tell us how it works.

Dr. Komanduri: Sure. Most of these technologies are done through a standard endoscopy. These are outpatient procedures, and that applies to all of them including radiofrequency. So the radiofrequency ablation is another heat-based type of therapy, and it is done by advancement of a catheter that has a balloon and basically a balloon that can actually inflate through a computer generator system, and that balloon is actually chosen to be the exact size of the patient's esophagus. And the reason is what happens is this balloon delivers a one-second burst of energy or heat to burn the Barrett's esophagus, the esophagus is a hollow tube, and being a tube the balloon needs to touch all the sides of the esophagus to provide an effective therapy, therefore we need to get the size of that individual patient's esophagus correct. And so we have multiple sizes that the balloon tells us exactly where we need to go with. That provides us one second burst of heat, and it universally ablates or burns down to the level just of the Barrett's esophagus.

So one nice aspect of ablation is that it's computer driven and having a computer generator-driven process it burns to the exact points which the Barrett's ends universally in all patients, and in that way we avoid for the most part complications with strictures.

The second aspect of this, it also provides us with another device, which is called a focal ablation catheter. The way I like to put it is if you think about spray painting a room, for example. When you first paint a room in a circle you paint the entire
room. You may spray paint everything, and then you come back a day later or a
couple of days later, and you find a few spots that weren't hit, and then you take a
small paintbrush to touch up those spots. And that's precisely what we have
available to us with this technology. We have a focal ablation catheter which is
almost like a little touch-up device which is not as big as a balloon but now is just a
small little paintbrush, so to speak, and we can go in. And this is what we tend to
do when we bring patients back for their second therapy, and we can review that
time line. But they ultimately usually have two sessions to complete this therapy.
So we have both options, in other words. The circumferential device that lets us
treat the whole esophagus at once, or we can actually touch up specific spots if
we're focusing on smaller areas.

Andrew Schorr:
And, Steve, you've had a little bit of this touch-up therapy, right?

Steve:
Yes. That is correct.

Andrew Schorr:
So, Dr. Komanduri, I have the idea that you're sort of the Picasso of the esophagus
there. You've got it covered. You can do the fine art and the big wall painting, if
you will.

We're going to take a break. We have a lot more questions that we want to cover
as we understand all this. People have been sending some in and we welcome
more e-mails to nmh@patientpower.info. NMH@patientpower.info or you can call
the studio, 877-711-5611. We're visiting with Dr. Sri Komanduri, who is an
interventional gastroenterologist, and we're hearing about the new procedures now
to deal with Barrett's esophagus, hopefully keep it from ever developing into
cancer. Much more coming up on Patient Power sponsored by Northwestern
Memorial Hospital. Stay with us.

Listener Questions

Andrew Schorr:
Welcome back to our live webcast. I want to point out to our listeners, there really
are not programs around the country like this. If you have this concern, and so I'm
so grateful to Northwestern for making it happen. And we are getting recognition.
For example, Patient Power just won an award and in part because of our program
with Dr. Mahvi from Northwestern on colorectal cancer we won the top internet
patient education award. And interestingly it was the journalism professors and
team at Medill journalism school at Northwestern that judged entries from around
the country. So it was us and CBS on radio and TV and some folks in print
journalism, but we were the internet winners. So thanks to Northwestern and Dr.
Mahvi in that case for helping making it happen. We'll win another one with you,
Dr. Komanduri.
Okay. One other thing I want to mention, by the way, is I'm always amused sometimes what doctors' names are. So in two weeks we're going to do a program on inflammatory bowel disease, and coincidentally our expert from Northwestern is Dr. Barrett. He's not on the Barrett's esophagus program, he's on the IBD program, two weeks. That's two weeks, though, we're going to discuss inflammatory bowel disease. I always joke that my wife's gynecologist, obstetrician was Dr. Stork. That's true. Okay.

Let's go on and continue our discussion here. Here's a question we got, Dr. Komanduri, and it was sent in by e-mail. If you don't have heartburn but you do sometimes get severe burning in your throat after lying down does this necessarily indicate acid, or could it be something else?

**Dr. Komanduri:**
That's a great question. What we briefly touched on on the initial discussion of GERD or heartburn or reflux is that a lot of these symptoms of GERD can be nonspecific, and a lot of them can be in the upper throat area especially where the airway is as well. We do see a lot of patients who have no frank heartburn who do have a sensation of burning in the throat when they wake up.

The other most common thing related to that is throat clearing. We have a lot of patients who have primarily symptoms of throat clearing. They're always clearing their throat. They've been told that maybe it's allergies or sinus related, and sometimes they see ear, nose and throat doctors who tell them that really it's nothing to do with that, or they have allergy testing and it's not that. And one of the important things to consider in these situations is specifically GERD, and in a patient like that who may just have burning in the throat it absolutely could be all due to GERD symptoms.

**Andrew Schorr:**
All right. You were talking about, used the term strictures earlier. Karen sent in an e-mail from Chicago. She said, "I've heard of strictures forming in the esophagus after radiofrequency ablation. Is this common and are there any complications of RFA you want to mention?"

**Dr. Komanduri:**
Yes there's two aspects to RFA, and one is the first question about complications and the other is what to expect post procedurally or after you have this done to you immediately, what types of symptoms you may have. The important thing here and why this has become such a widespread accepted therapy now is that there really are very few complications. Whenever we do an endoscopy or endoscopic therapy the two major complications we are concerned about are bleeding and what's called perforation or poking a hole in the GI tract. And with this specific therapy there really has been no increase in those complications above what is the standard risk of having a regular endoscopy done. The issue of strictures have occurred in sporadic cases, and by that I mean in less than a handful of
approximately 32,000 patients who have had this procedure nationwide. Again, the previous therapies like photodynamic therapy had up to a 30 percent rate. Right now we're still under one percent in terms of stricture formation, and, knock on wood, I've actually never seen one myself.

**Andrew Schorr:**
Here's a question we got in from Janet. I'm not sure where she's from and she has some technical terms in there, so help us through it. Janet says, "What are the pros and cons of laparoscopic fundoplication for GERD and Barrett's and dysphasia with hiatal hernia in scleroderma," which of course is a disease. So maybe we better break that down. First of all, what is laparoscopic fundoplication?

**Dr. Komanduri:**
One of the other aspects we haven't discussed. We talked about the weakness in the sphincter causing the acid exposure. The second aspect to what actually causes acid reflux anatomically is something called a hiatal hernia. A hiatal hernia essentially occurs when there's a weakness where the diaphragm inserts on the esophagus. So what I mean by that is normally not only is there a sphincter right at the junction of where the esophagus meets the stomach, the diaphragm, which actually separates our chest cavity from the abdominal cavity, also meets right at that level where the stomach meets the esophagus. And is actually impinges right on the esophagus creating another mechanism to prevent acid reflux.

In a certain percentage of patients that opening through which the esophagus travels through the diaphragm can be more open than what we normally would like, and part of the stomach can actually herniate or come above the diaphragm into the chest cavity. So the stomach is normally in the abdominal cavity but can come up into the chest cavity. And this little portion of stomach is what is called a hiatal hernia. This is very common, and it's a normal anatomical variant in a lot of patients and doesn't always have to cause heartburn or symptoms. But you can imagine what now happens is that that stomach that has migrated above the diaphragm is another reservoir for acid, but the reservoir for acid now is above the diaphragm and in the same pressure zone as the esophagus, so it creates a very easy way for acid to come up unopposed by the sphincter itself.

That being said, the fundoplication, what the term basically means is it's the repair of that hiatal hernia. So what they do is they tighten that area where there is the weakness or the migration of the stomach up and bring it back down into the abdominal cavity. It's a surgery that is done laparoscopically and can be very nonmorbid of a surgery. In other words it can be done almost in a same-day surgery type of approach.

The problem is not all the time do we have patients getting this type of surgery for the right reasons. And what I mean by that, you can fix the hernia and in a certain percentage of patients you can get rid of the heartburn. The patients who we feel who do well with fundoplication are the ones who actually did well with medication,
and that's actually been shown in multiple studies. And the times we can consider it are patients who are very young who have very chronic heartburn symptoms, but they get somewhat better on medication but don't want to take the medication their entire life. The wrong time to use it and what we see all too often is in patients who do not respond to our medications for acid reflux. They in general don't do well with fundoplication, and having a surgery that doesn't help you is not always the best thing.

The other thing is there are some misconceptions about repair of hiatal hernia. It's not a magical cure for heartburn. Fifty, 60 percent of patients can have their heartburn completely gone, but another 30 percent of patients actually still need medication after fundoplication. Maybe not every day and maybe not as much, but they still need medication.

The other thing is there are a lot of complications associated with fundoplication. For example, if the surgery is done and the hole is closed too tight, then patients can have trouble swallowing or what is called dysphasia also, and we do see that, of course not all too often. The other concept is that we're doing surgery for something that's really just a symptom and is not a cancer, for example. There have been studies looking at fundoplication in progression to Barrett's esophagus, and the data is kind of mixed. A lot of studies show that it actually may have no effect on Barrett's esophagus, meaning that you can get the fundoplication, still have acid exposure and develop Barrett's esophagus. So as a result we want to be very selective on which patients get this, and it's not a be-all, end-all cure for reflux and Barrett's esophagus.

**Andrew Schorr:**
Wow. All right, folks. This is another case of get a second opinion. If you're thinking of going through something like that you'll want to see somebody, like Dr. Komanduri, and another equally adept interventional gastroenterologist and really talk about this.

Now, one other thing. Janet also seems to have an underlying disease going on, scleroderma. So let's talk for a minute, acknowledge scleroderma but also underlying conditions. Are there any situations where you have this disease process going on too and so that complicates things further?

**Dr. Komanduri:**
Yeah, absolutely, and I think scleroderma is a great example. Scleroderma is a disease. It's one of these what we call autoimmune diseases where the body attacks itself. In this specific case there's actually an infiltration of the esophagus, and the esophagus essentially just becomes very noncompliant. It becomes thick and noncompliant. And what ultimately happens in scleroderma is that it infiltrates the disease itself, the antibodies which are attacking the body itself, this autoimmune concept, they're attacking the sphincter itself as well. And the sphincter becomes very nonfunctional. And you can imagine if you take the ability...
of the sphincter to tighten, then you have persistent acid exposure even more than a normal patient with GERD. So this makes it very bad for these patients, and in actuality we see some of the worst heartburn and worst Barrett's, for example, in patients with scleroderma. So it's a predisposing factor because of that underlying disease.

There are other diseases like this and other conditions, for example, in patients who are chronically debilitated. We see a lot of kids, for example, with cerebral palsy, other patients who are recumbent a lot of the time, who don't have normal activities and don't walk like normal people do, what happens is they are predisposed to have that acid flow backwards into their esophagus as well just by being recumbent or being wheelchair bound and these kinds of things. And especially with all the successes we're making with these types of patients and they're living much longer these days we also have to now consider some of these other complications that can occur.

Andrew Schorr:
All right. So if somebody is living with one of those conditions and they have this really aggressive acid reflux, are they candidates for radiofrequency ablation?

Dr. Komanduri:
So the differentiation has to be made between treating reflux and treating Barrett's esophagus, and one important point to make is that radiofrequency ablation is a treatment specifically only for Barrett's esophagus. It does not have any effect on heartburn or acid reflux. I think that sometimes isn't clear. But any etiology of Barrett's esophagus is someone who could be treated for this. So once you have the diagnosis of Barrett's with or without dysplasia you are a candidate for treatment with this technology.

Andrew Schorr:
All right. We're going to take another quick break. We have some people holding on the phone, and we'll get to you as soon as we can. Here's the phone number if more want to join in. 877-711-5611. 877-711-5611. We have a question also from Jeff in Tulsa we're going to pose. We got my friend Lee, it looks like, is calling in from the Seattle area, and we want to talk about genetic connection in Barrett's. And I know my friend Lee, his brother I think had some connection with it. So we want to learn about that. All back with Dr. Sri Komanduri from Northwestern Memorial Hospital and Steve Waltz, his patient, right after this.

Andrew Schorr:
Welcome back as we continue our discussion. Want to take a call from Lee in Seattle. Lee, welcome to Patient Power.

Caller:
Hello.
Andrew Schorr:
There you are, Lee. Welcome to Patient Power. Is this my friend, Lee?

Caller:
Yeah, how are you?

Andrew Schorr:
Okay. Thank you for joining in. I was talking about you earlier. Did I get it right that you started out having the symptoms of heartburn like in college?

Caller:
Not so much college but I was in my mid 20s when it began.

Andrew Schorr:
And then you were followed for years, developed Barrett's esophagus, and ultimately you did have surgery and your esophagus removed, right?

Caller:
Yeah. I was very fortunate because I was followed through a study at the Fred Hutch, which is a cancer research center here in Seattle, and I would have endoscopies anywhere between 12 and 30 months apart. And after about, oh, geez, 20 some-odd years with no changes in my condition with Barrett's then it did progress after about 23, 24 years to esophageal cancer.

Andrew Schorr:
All right. But caught early. And you had the surgery, but you told me one day, we were standing there at Starbucks, that you shared all this with your brother, and your brother is back in Pittsburgh I think. What turned up there?

Caller:
Well, that actually was my cousin but I shared my story with my cousin, and he said, geez I've had this severe heartburn for 30, 40 years, and so after we visited he went back to his doc and ended up having endoscopy and they found that he had Barrett's. And shortly thereafter because it was a first time they did a short-term follow-up, and in that period of time it had changed from low-grade dysplasia to high-grade dysplasia, and so he ended up having surgery at that time. And then in the following year just because I kind of prodded them and things, I had two brothers, and it turns out that they had Barrett's.

Andrew Schorr:
Wow. All right. Well, we've got to worry about genetics. Let's ask Dr. Komanduri about that, Lee. So Dr. Komanduri, you hear Lee's story, a cousin and then brothers. Does this run in families, or if so what percentage of the time?
Dr. Komanduri:
Yeah, I think that this is actually probably the most exciting area from our point of view in terms of understanding this disease. The crux of the research in Barrett's right now is looking at these types of molecular changes or genetic mutations that we could be missing that really are the underlying factor to tell us not only if your family is at risk but also if an individual patient who develops Barrett's has a high risk or low risk for developing cancer from that. The Mayo Clinic, actually, is one place specifically that has done extensive research on familial Barrett's, and they’ve actually identified families just like yours, Lee, where there are groups and clusters of people within that family, all have Barrett's esophagus or esophageal cancer, and they've done some genetic studies. And they've found a couple of different genes that seem to be linking them together. There still needs to be a lot more work because there appears there's probably numerous pathways or mutations that are ultimately responsible for Barrett's, but there are clearly some genetic links.

The other aspect is, and this goes back to radiofrequency ablation, a small study looked at patients and initially they ran these types of mutation analyzes on them before they had ablation and they found various mutations among certain patients. Ultimately after they had ablation and were cured they reran these mutational analyzes and they found they were all disappeared or all normalized. So one important aspect is as we identify these molecular or genetic alterations that are occurring and causing Barrett's or making families more prone to Barrett's, this aspect of radiofrequency ablation is not just getting rid of it superficially but appears to be changing some of those mutations, or all of them actually, and ultimately getting rid of them. And this is important because when we do these types of therapies which are not as invasive, for example, as what you had with resection, we want to be sure that it's not going to come back. And this type of look at these molecular panels that show us that those are also changed and back to normal gives us hope that once we treat these patients that we're not going to see recurrence of disease.

Andrew Schorr:
Lee, you're doing well. I mean it progressed to cancer. You were being monitored carefully. You're doing okay these days?

Caller:
Yeah, I was fortunate that because I was on this regular follow-up of endoscopies that again they did find that it had developed into esophageal cancer but I was fortunate that it was found at the stage I, so I had an esophagectomy and I'm doing fine. Although I do have one answer for the doctor, and that is I do sleep elevated, and I'm probably going to butcher this word, I still get anastomosis. I guess even though I don't have an esophagus anymore I still have reflux. And so the acid occasionally will hit when I'm sleeping, the anastomosis, and so the cancer is gone, but I still continue to have a cough.
Andrew Schorr:
Lee, thank you for joining us, of course. We wish you all the best, and I'll see you at the coffee shop.

Caller:
All right, Andrew. Thank you and the doctor for what you're doing.

Andrew Schorr:
Oh, sure. And I've been thinking about how much coffee I drink now and chocolate and all that and relaxing that sphincter.

Doctor, just so I understand, the surgery that Lee had and fortunately the cancer caught early but we like it not to get to that point, you basically have to create a new esophagus. How do you do that?

Dr. Komanduri:
So the surgery, essentially, they have to remove essentially the entire esophagus, but they leave a little obviously, a little piece that is unaffected, and they essentially bring up the stomach and they kind of tubularize it, meaning they kind of twist it into a tube and extend it, and then they tie it to what is left of the esophagus. The problem is as you can imagine and to what he was alluding to is your stomach is not meant to function like your esophagus, but there's still some normal esophagus, so the acid that's still produced in the stomach is there, and that can still cause some symptoms. There other problems, obviously, associated with having a different organ like your stomach function like the esophagus because it doesn't have the same contractions and motility that the esophagus has.

So there can be a lot of different complications, but the important aspect of Lee is that, it's not that he had the surgery really but it's that he was in a program. And that's very important for patients with Barrett's, that whether or not you decide to do something like ablation the most important aspect is that you're in a continued program with a gastroenterologist so he can find things early and you don't get lost to follow-up.

Andrew Schorr:
Right. And we heard that with Steve. And before we go we're going to hear more from him. We did have a call, by the way, from Florida. Robert Ginsberg called in, and he wanted folks to know should it develop into esophageal cancer there is an organization. The website is ecaware.org.

But as we were saying, we really hope people don't get to that point. Steve, I want to ask you a question. You were being followed carefully. Sounds like that regular endoscopy was a good thing for you because it didn't get to the cancerous point.
Steve:
Yes, that is correct. They started off with a once every year checking it. Then they started seeing a little activity so every six months. Then finally it hit the high dysplasia rate rates and in I go to see Dr. Komanduri.

Advice for Others

Andrew Schorr:
So what would you say to folks who are experiencing these symptoms? There you were with the baking soda and the water for years, but you finally went to a gastroenterologist, I know for a different reason, but it sounds like it's a good thing you went in.

Steve:
Yes, it was. Very much so. In fact I had no idea of anything about a Barrett's esophagus or that type of thing, and just by luck, I don't know how the other doctor determined to look there, but he punched around in my stomach area and made a little sore spot he said, and so we better look at it. So he went down and looked and sure enough, there it was.

Andrew Schorr:
So just to recap your situation. So that recognition, following ultimately in this case new technology, the radiofrequency ablation in the hands of Dr. Komanduri that's made a huge difference for you.

Steve:
Most certainly. It was a major lifesaving event. That's how serious I consider it.

Andrew Schorr:
Dr. Komanduri, so in that sort of situation where you're able to do the ablation and then the touch-up with your art work, is someone considered cured then, or do they have to keep being monitored. What's the story there?

Dr. Komanduri:
The biopsies after we do the ablation confirm whether they are technically cured, and that's what we showed for Steve, for example. So they are cured. The question remains whether we can ultimately stop watching these patients. That remains to be seen, and that simply is because of a matter of time. Right now the earliest patients that have been monitored closely are about two and a half years out who have done just as well as Steve has, and we have not seen recurrence of disease. I think ultimately when we get out to about five years of having a lot of patients followed we can start making recommendations of decreasing the surveillance intervals in these patients, or ultimately stop following them, and that would be the most cost-effective thing about this type of therapy.
I think the other aspect of it right now is although we still do surveillance endoscopy it's kind of in my mind better to have an endoscopy when you don't have any Barrett's or dysplasia than have it while you do. So in that sense ultimately we're going to be able to stop doing a lot of these procedures, but until that time frame comes we still have to do some surveillance this these patients.

Andrew Schorr:
One quick question before we run out of time. Jeff sent in one from Tulsa, Oklahoma. He says, "I suffered from GERD for many years, but I was able to get it under control. Then two years ago I had an endoscopy and had grade C erosion but no dysplasia. If there were no signs two years ago and the GERD was under control is it normal for Barrett's to have cropped up now?"

Dr. Komanduri:
A lot of times we either see it or we don't in the initial endoscopy. But that being said, we do know there is progression of disease in this case. So if there is inflammation, as characterized by his erosive disease or erosions, there is always potential for Barrett's to develop. So that still means that the acid is not fully controlled, and even if the patient is asymptomatic he should have some further evaluation.

Andrew Schorr:
So, Steve, you're going to continue to be evaluated but hopefully you can party with all that extended family you have and feel good and hopefully not worry. Are you feeling pretty good about the future?

Steve:
Yes. At this point in time, knocking on wood, I feel great about it. There is one thing that we talked about. Yes, you will probably need to have a couple of extra pillows or something like that to prop your body up a little bit to avoid any acid coming, while you're sleeping, coming back up in there. There's even some people recommend you prop up the legs at one end of your bed at a tilted angle. I haven't tried that yet. But right now I'm very grateful to Dr. Komanduri for what he has done for me.

Andrew Schorr:
I wish you all the best in your now more senior years, and hopefully you have many enjoyable times with your family. I thank you for joining us, Steve Waltz from Aurora, Illinois.

Dr. Komanduri, so good idea, propping ourselves up in the pillows as we get older?

Dr. Komanduri:
Yeah. And I think that's one of the many lifestyle modifications that we talk about. In other words things that you can do for yourself to limit reflux, and just keeping your esophagus above your stomach will create less acid exposure when you're
sleeping. But all those other things we talked about. If you can learn to limit certain food triggers, the smoking, and control our weight and prevent obesity we will ultimately curb reflux and esophageal cancer.

Andrew Schorr:
All right. I want to thank you, Dr. Sri Komanduri who is an interventional gastroenterologist at Northwestern Memorial Hospital. Thank you so much for being with us and telling us about this new procedure, the radiofrequency ablation. All the best to you.

Dr. Komanduri:
Thank you.

Andrew Schorr:
Thank you, sir. I want to mention also, we're talking about esophageal cancer. If you're in the Florida area, you want to reach out to someone who leads a support group for it, Robert Ginsberg's e-mail address is rginsberg@ecaware.org. And I'm sure that organization helps a lot of people. But let's head off the risk of esophageal cancer if we can by close monitoring. And if you develop Barrett's esophagus that can one of these procedures help.

Thank you so much for being with us. This is what we do on Patient Power. In a couple weeks we'll be back. We're going to talk about inflammatory bowel disease. Interestingly, our expert is Dr. Terrence Barrett. We're going to talk about IBD, that's Crohn's and colitis. We're going to learn all about that. Always send your questions to nmh@patientpower.info. And all of our programs are in the ihealth area of nmh.org. So it's ihealth.nmh.org. I'm Andrew Schorr. Remember, knowledge can be the best medicine of all. Good night.