Welcome to Yale Cancer Answers with your host, Doctor Anees Chagpar. Yale Cancer Answers features the latest information on cancer care by welcoming oncologists and specialists who are on the forefront of the battle to fight cancer. This week it’s a conversation about neuroendocrine tumors in colon cancer with Doctor Pamela Kunz.

Pam, maybe we can start off by setting the context? What exactly are neuroendocrine tumors and what do they have to do with colon cancer?

Great question. So neuroendocrine tumors are just another type of cancer. They can originate actually in almost any part of the body, most commonly in the GI tract and in the lungs and what makes them
different from colon cancer is what the cells look like under the microscope. So it’s actually a completely different type of cancer than colon adenocarcinoma, which is the most common type of colon cancer.

So these neuroendocrine tumors can arise in the colon, which would make them a colon cancer. But they look different under the microscope. So they’re not exactly the same garden variety colon cancer that we usually think about?

That’s correct, and so we would call those a neuroendocrine tumor of the colon and what’s unique about these is that we try our best to identify where these cancers start, because that has implications on how we treat that cancer. So they may start in the colon, which is in fact actually quite rare. Most commonly, they’ll originate in the small intestines in the pancreas and in the lungs, and they can spread to lymph nodes or to the liver. And so when someone says they have a colon cancer, we often just assume that’s colon adenocarcinoma.
The garden variety, as you said. But what’s very important is that we rely on our pathologists to tell us exactly what histologic type, that means, what the cancer cells look like under the microscope to determine whether it’s an adenocarcinoma or a neuroendocrine tumor.

Let’s talk a little bit more about how that process actually happens and what the big deal is. I mean, for many people they may think a cancer is a cancer, and I don’t want neuroendocrine cancers. I don’t want this cancers, and I don’t want that cancer, I just don’t want cancer. I’m beginning to sound like Doctor Seuss. But how do we differentiate between an adenocarcinoma and a neuroendocrine tumor? And why is that important?

So when a patient first develops symptoms that may bring them to, for example, their primary care doctor or a gastroenterologist, some of the symptoms may in fact overlap between having any sort of cancer of the colon or the GI tract. They may have abdominal pain or changes in their bowel habits,
and then they may undergo a biopsy. That biopsy could be through a colonoscopy, or, if the cancer has spread somewhere else it may be a biopsy of that spot, like a biopsy of the liver and once that biopsy is taken, that tissue, the tumor tissue goes to a pathologist as a doctor that specializes in looking at cells under the microscope to help us determine exactly what type of cancer it is, they will look at what the cells look like. They will also do very special stains to help us identify certain characteristics of those cells, and it matters because every cancer is treated differently. We now have large clinical trials that tell us one cancer may do better with a different chemotherapy versus another, and so it’s very critical in fact to determine what type of cancer that is in order for us to tailor that treatment to the patient. And also you know, I think going back to what you had said earlier, the cell of origin for adenocarcinomas as you mentioned, those are cancers that arise in the
col in the glands of the colon, whereas these neuroendocrine tumors may arise somewhere else. Now do normal endocrine tumors that you mentioned that can arise most commonly in the small intestine, or the pancreas or the lung. Do those metastasize to the colon, or when you find a neuroendocrine tumor of the colon, is it generally a neuroendocrine tumor, albeit rare that started in the colon? Usually we label these based on where they start, so if we’re calling it a colon, neuroendocrine tumor or a small intestine neuroendocrine tumor, that’s because we believe they started in those places and they start, you’re absolutely right from cells that are different from these glandular cells that an adenocarcinoma originate from neuroendocrine cells are unique. They happened to be scattered throughout the body. They share features of some typical cancer cells, but one thing that makes them unique is that some of them can actually secrete hormones.
That’s how they get their name endocrine. And so these cancers that originate in the small intestine, for example, sometimes can secrete a hormone called serotonin that can cause things like diarrhea and flushing. And some of the pancreatic neuroendocrine cancers can secrete other types of hormones, for example, insulin, that can make your blood sugar quite low. So it’s a combination of things that helps us eventually lead to that diagnosis, and then tailor that treatment and so if a patient were to present and they go and they have a colonoscopy and they have a biopsy and the biopsy shows a neuroendocrine origin is it likely that started in neuroendocrine cells of the colon itself? Or does this prompt then a little search to see whether that neuroendocrine tumor that was found in the colon actually came from somewhere else, or how common would that be for it to migrate to the colon? Many of our listeners may know that garden variety colon cancer goes other places.
It goes to the liver and so on and so forth. But do these neuroendocrine tumors that may start, for example, in the small bowel, end up in the colon? That would be very unusual. They would more commonly spread to lymph nodes and to the liver, but to your original question, we do something called a staging work up really at the time anyone is diagnosed with any sort of cancer that helps us determine the extent of the cancer where perhaps has spread anywhere else. We do that by using a CTE or a CAT scan that helps us look at the chest, the abdomen and the pelvis. For other areas of cancer we will also sometimes do blood work that includes looking at blood tests, cell counts, liver tests, kidney tests to also see if there is any other effect on other organs. You’ll do this regardless of whether they presented with a neuroendocrine tumor or whether they presented with an adenocarcinoma? That’s correct, yes.
and kind of getting back to where we started in terms of patient presentation, you had mentioned that neuroendocrine tumors, because they tend to secrete these hormones, they can present with symptoms of diarrhea and flushing and so on and so forth. Whereas many colon cancers actually may be completely asymptomatic often because we have screening, For our listeners, there was an update to the screening guidelines for colon cancer that was recently put out. Do you want to tell us a little bit more about that? Yes, definitely, and I think that’s also another key between the garden variety, colon adenocarcinoma and neuroendocrine tumors is that there are precursors or pre cancers to colon adenocarcinoma that we can detect as polyps. So small little growths within the colon, we can detect and remove and prevent cancer and the way we do that is through colonoscopies and so last week the large guidelines body called the United States Preventive Services Task Force, a large organization that helps determine guidelines for screening,
came out with a new recommendation. It’s in draft format right now, to lower the colon cancer screening age to 45 from the age of 50, so this is moving it earlier by five years, and that’s for people that have an average risk of colon cancer, so no strong family history or personal history or other risk factors that would increase your risk. This is for average risk individuals. And so why did they do that? Why are they now thinking that people need to get screened earlier? Are we finding cancers at earlier ages? We are in fact finding cancers at earlier ages really, since the 1990s, we’ve seen an increase of 2% per year of the incidence of colon cancer in people under the age of 55. Some other organizations, the American College of Gastroenterology decreased their screening recommendation age to 45 years for black men. This was in the mid 2000s and in 2018 the American Cancer Society reduced that colon cancer screening age to 45 for all people and that was just two years ago, and I think that over the last few years
we’ve seen just stronger evidence to support lowering this screening age, and therefore the United States Preventive Services Task Force came out with this recommendation last week and the screening guidelines for colon cancer may be a little bit confusing for some of our listeners because it really depends on the type of test. Sometimes they say get a colonoscopy every 10 years, but then there are other tests like flexible sigmoidoscopy. There are contact tests. There are now tests like Cologuard so stool DNA tests. There are fecal occult blood tests, can you help our listeners to understand these different tests and what they should be doing in terms of screening? Because when they read the guidelines it may get a little confusing. So your team of doctors will help guide you to select the test that’s best for you and full disclosure,

my husband is a gastroenterologist and we talk about this a lot at home, and I’ll quote something that he says which is any
screening is better than no screening. And so I think your first stop is talking to your primary care doctor. So these are the doctors that will often refer you to get colon cancer screening that is right for you. Your next stop usually is with a gastroenterologist and they will talk with you about this range of screening and you did a very nice job listing those options and these are tests that look for hidden blood in stools. Those are called occult blood tests. There is the DNA based test so we know that colon cancers can actually shed DNA into the stool. And we can look for that.

A sigmoidoscopy will look just in the bottom portion of your large intestine, called the sigmoid colon, so it will only detect that and it is an actual camera that’s inserted into the sigmoid colon. A full colonoscopy will have a camera inserted into the entirety of your colon, and so there’s a huge range of options. And I agree it can be confusing, but I think that the best thing is to really talk with your primary care doctor and gastroenterologist about these options.
Some tests may be better for different patients, but let me talk a little bit about some of the advantages of why colonoscopy and perhaps even sigmoidoscopy outweigh some of the others right after we take a short break for a medical minute. Please stay tuned to learn more.

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This is a medical minute about genetic testing which can be useful for people with certain types of cancer that seem to run in their families. Patients that are considered at risk receive genetic counseling and testing so informed medical decisions can be based on their own personal risk assessment. Resources for genetic counseling and testing are available at federally designated comprehensive cancer centers. Interdisciplinary teams include geneticists, genetic counselors, physicians, and nurses who work together to provide
0:15:20.718 –> 0:15:22.961 risk assessment and steps to prevent the development of cancer.
0:15:26.74 –> 0:15:27.63 Welcome back to Yale Cancer Answers.
0:15:31.63 –> 0:15:33.63 This is doctor in Anees Chagpar and I’m joined tonight by my guest doctor Pamela Kunz.
0:15:42.43 –> 0:15:43.537 We’re talking about colon cancer, and neuroendocrine tumors,
0:15:46.184 –> 0:15:48.149 right before the break we were talking about some recent updates to the colon cancer guidelines that recommend that everybody at average risk start getting their colon cancer screening done at the age of 45.
0:16:00.992 Now, for anybody who’s read those colon cancer screening guidelines,
0:16:04.41 it’s a little bit confusing.
0:16:06.12 There’s all kinds of tests that are out there, and Pamela,
0:16:10.33 you were telling us right before the break that this is a decision that you really need to make with your health care team.
0:16:18.43 But you are going to make a pitch for a particular form of screening.
So tell us a little bit more about that.

That’s right, so there are a number of options, but I was going to talk a little bit more about colonoscopies.

I think that colonoscopies really meet a number of different needs in terms of the screening goals, so number one, to take a step back to describe them, your gastroenterologist will use a small camera on the end of a tube and that allows them to detect small polyps, which are these precancerous spots and remove them, and I think that is critical in terms of cancer prevention.

Some of these other tools might identify that perhaps you have a precancerous lesion, or perhaps you have a cancer, but don’t also enable the ability to actually remove that polyp, so that’s why I think colonoscopies really are probably the best tool and considered the gold standard.

So just to be honest, I think a lot of people when they think about colonoscopy, the things that kind of make people less than enamored with the technique, is number 1, the prep because your colon needs to be really clean for somebody to
put a camera in there and actually be able to see anything and #2, the whole thought of having to put up your bottom end is not particularly appealing to people when they can think of instead just sending in a stool sample, which although not appealing, sounds a little bit nicer than putting a tube up your bottom end so if you were to do the other, say, a fecal occult blood test or a stool DNA test that now is being marketed to patients, if that’s negative, how confident are you in the results? If it’s positive, you’ll likely end up needing a colonoscopy. Is that right? That’s right, so if those tests are positive, you will still need to do the prep. I think that’s one of the aspects of a colonoscopy that most people are worried about. That’s when you have to drink a special fluid that helps clean out your colon in order for the gastroenterologist to really see a shiny, clean colon and detect the polyps so the prep is scary. And in terms of these other options,
if it’s negative, so if a fecal occult blood test is negative, or the stool DNA test is negative, it’s reassuring, but it’s not 100%. And colonoscopy really allows the gastroenterologist to look inside your colon and see if there are any polyps, and to remove them. Now before the break we were also talking about neuroendocrine tumors and you had mentioned that these are from a different cell of origin. They often secrete hormones, and rarely they can actually reside inside the colon as well. Now does a colonoscopy find these as well, or are these kind of hidden and the only way that you can really find them is when you present with symptoms? A colonoscopy will help us detect any abnormalities in the colon actually, and it will help detect other types of cancers. It will help detect other types of conditions such as inflammatory bowel disease, but what’s unique about neuroendocrine tumors is that they don’t have a precursor or a precancerous spot that develops before the cancer. So very likely if a neuroendocrine
tumor is present in the colon, it’s already a cancer, whereas for colonoscopy the intent is to try to catch cancers earlier before they are even cancers. So detect the polyps. And the guidelines for colonoscopy, if I remember correctly, are for a colonoscopy every 10 years. Some people may look at that and say 10 years. What happens if I develop one of these precancerous polyps in the interim, is 10 years really the guideline, and what do you say to people who have those concerns? 10 years is the guideline that’s assuming that you again have average risk, and assuming that colonoscopy is completely normal. If that colonoscopy shows polyps, very likely you’re asked to come back sooner, often within three years to see if there are any more polyps. But if your colonoscopy is totally clean, you are often asked to return in 10 years, and that’s because what we’ve learned about the biology of polyps is it often can take 10 years for
a polyp to turn into a cancer. Now that’s I would say on average or typical there are exceptions to that rule, and so the good news for all of our listeners, of course, is that if you do undergo a colonoscopy as Doctor Kunz is recommending starting at the age of 45, if it’s completely clean, you don’t have to drink that prep for another 10 years, which is always a nice thing to know as well. Doctor Kunz, you had mentioned that for these polyps you can kind of take them out at the time of the colonoscopy and potentially prevent colon cancer and potentially prevent colon cancers that are already in the form of a colon cancer before finding it just as a polyp. Is that right? Yes, and so the biopsy that’s done at the time of the colonoscopy can help us to tell what kind of cancer this is, is this an adenocarcinoma? Is it just a pre cancer? Is this a neuroendocrine cancer? So if it’s a pre cancer and
the polyps removed is that it?
Do you have to take anymore medications or is removing the polyp and getting your follow up all you need to do?
If all that is detected is a polyp and they’re able to completely remove it then the recommendation is just following up your gastroenterologist says in terms of recommended intervals.
So if they find multiple polyps, or even just one, it will certainly be, please come back and see us before 10 years but there is no treatment needed.
There’s no chemotherapy needed, and nothing else is needed. Let’s move on to the other two scenarios.
Let’s suppose this is an actual garden variety adenocarcinoma.
What happens then?
So if we determine that based on the biopsy that it’s a colon adenocarcinoma, then patients are usually referred to see an oncology team.
That team consists of usually a medical oncologist, like myself, and often a surgeon, and we will embark on this staging work up that I’d mentioned a little bit earlier.
So that includes blood work and that will usually also include a CT scan of the chest and the abdomen and the pelvis. To determine extent of disease, meaning, where has the cancer gone? Is it localized just in the colon? Has it spread to nearby lymph nodes or has it spread further, perhaps to the liver or to the lungs?

And so, let’s say it hasn’t spread anywhere then what? Then we will often have a multidisciplinary team meeting. We do this for many of our cancers. It’s called a tumor board.

In fact, we have our GI cancer tumor board this afternoon, and the tumor board is a place where there are multiple specialists, medical oncologists, surgeons, pathologists, radiologists, a whole group of doctors that will help determine the next best plan for someone who has a localized colon cancer that often the next step is often a surgery to remove a portion of the colon that contains the cancer plus some additional colon to make sure that we’ve removed enough and
also some lymph nodes to help us determine if the cancer has spread to those lymph nodes. And then is chemotherapy or radiation in their future as well? That depends on the stage of the tumor. So now that the patient has had their surgery, we are able to accurately determine what stage they have in this stage is determined based on three key features, and that’s called the TNM staging. The CT scan itself also helps us.

The T stage generally refers to a combination of the size and then how deep in the lining of the colon that tumor has spread, the N stage refers to the number of lymph nodes involved and the M stage refers to has the cancer metastasized to a distant location, like the liver or the lungs, and so our pathologists help us with that. The CT scan itself also helps us, and so for someone with a colon cancer it’s a little bit nuanced, but I would say in general, if someone has a colon cancer
that is stage three or greater, that would mean that they have local lymph nodes involved that usually does mean that they need post surgical chemotherapy and so now let’s move to the neuroendocrine situation. How are these different? How often do you find metastases at the time of diagnosis? Are these resected surgically? Is there more often medical management? How is your approach similar or different to regular colon cancer? Well, I think that the work up for many of these GI cancers are the same where we get a biopsy and we do this staging work up with blood tests and a CT scan. And then we meet and we have a tumor board discussion to come up with the next plan, so those are the common principles. But you’re right, the treatment plan and tailoring that treatment to the patient often differs by cancer and so that is true for neuroendocrine tumors. Neuroendocrine tumors are often much slower growing than their adenocarcinoma counterparts,
and neuroendocrine tumors have a very different system of classification. I won’t go into all of those details now, but that does help us determine what the next best step is and we do include things like surgery. Sometimes patients will have had the cancer spread at the time of diagnosis, and if that’s the case, we have medications, including some chemotherapies that help us slow down the growth of that cancer, and so the chemotherapies though are different than what you would get for a regular colon cancer? This is an important take home for every cancer type. The chemotherapy regimen is often different depending on that cancer type. There’s sometimes some overlap, but for the most part, the way we determine if a chemotherapy regimen works for a given cancer is through a clinical trial. Clinical trials are ways we test new medicines or new combinations of medicines and prove that it works in a very specific cancer type.
Doctor Pamela Kunz is the director of GI Medical Oncology at the Yale School of Medicine. If you have questions, the address is canceranswers@yale.edu and past editions of the program are available in audio and written form at yalecancercenter.org. We hope you’ll join us next week to learn more about the fight against cancer here on Connecticut Public Radio.