

Carlecast #6 – Colonoscopy. I'm sorry I just can't put any sort of pithy comment here.

Dr. Graham: And welcome once again, to this, our sixth Carlecast. Carlecast is of course that medical podcast with doctors discussing your health and issues of medicine important to you. We're glad to have you back today. Once again, I'm Dr. David Graham, I'm an oncologist at Carle Clinic in Urbana, Illinois. And I'm having just loads of fun making this show for you folks.

We have really an interesting topic out here today. Yes it's a little bit in oncology, in my field, and maybe it's not the nicest thing in the world to be thinking about. But colonoscopy is a topic that is becoming more and more important in people's everyday health. It's more accepted as a standard for screening of colon cancers, and, in fact, we have some interesting information out now, that it can actually help protect you from getting colon cancer if you get the study done on an every-so-often basis.

I've got a great person to talk about it here with us today. Dr. Paul Tender, who is one of our colorectal surgeons in the Division of Colorectal Surgery here at Carle Clinic. A really nice guy to talk to, I think you'll enjoy this conversation, so let's get to it. Dr. Paul Tender.

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Dr. Graham: And we're joined today by Dr. Paul Tender. Dr. Tender is fellowship-trained and board-certified in colorectal surgery, so just going through all the time to train as a surgeon wasn't good enough for him. He had to put the extra effort in there. Dr. Tender, we're glad to have you here with us today, talking about something that is really timely. We're recording this in March, which happens to be *Colorectal Cancer Awareness Month*. We're here today to talk a little bit about colonoscopies.

Now, colonoscopies are things that can sometimes be scary for people to think about, but there are certainly people that need to think about having this done, and should strongly consider having this done. Dr. Tender, what is your usual recommendation about when people ought to think about having colonoscopies?

Dr. Tender: What we like to recommend, for average risk individuals - someone with no particular risk factors for colon cancer, no colon cancer in their family, and no symptoms referable to their lower intestinal tract - that they undergo a screening examination at the age of 50, Dr. Graham.

Dr. Graham: Are there people that you would say, “Maybe you ought to get looked at even before you're 50?”

Dr. Tender: Yes, obviously, if one has a family history of colon cancer, and by family history I think the strongest area there, is what we call a first-degree relative (which would be father, mother, sister, brother, or child). Those particular people relative to family history probably have a three to four times risk of developing colon cancer over their lifetime, compared to the general population. They should get a colonoscopy no later than 10 years before the time that the affected family member was diagnosed. Otherwise, we think anyone that has any symptoms referable to their lower intestinal tract, such as bleeding, change in their bowel habits, abdominal complaints, ought to be evaluated. And certain individuals that have had other cancers, particularly women with breast cancers, probably ought to have their colon evaluated at some point as well.

Dr. Graham: Now, in my mind, as an oncologist, a colonoscopy really has an advantage over a lot of other screening tests, in that it can do more than just screen.

Dr. Tender: That's right, Dr. Graham. To really answer that question though, one needs to understand that most colon cancers don't just spring up in the colon. They develop from a pre-existing growth called a polyp, which is the old followers of Inspector Clouseau would call it a “bimp.” It's a bump. It's a growth in the colon, usually very small.

Oftentimes, it can be removed through the colonoscope, or during the colonoscopy procedure. And many of these growths are precursors to a colon cancer. The sort of the thinking is that colon cancers are typically felt to be fairly slow growing, as cancers go, and they also have a fairly long pre-cancerous state, a pre-cancerous time interval. Our best scientific evidence is that it probably takes years, maybe 5 to 15 years for a polyp to turn cancerous, so there is a very long window of opportunity, where people can be checked, and intervention can be done that can prevent cancer in the future. That is, removal of the polyp, but the diabolical nature of this is that polyps typically don't have any symptoms whatsoever, so one has to recognize the risk, and be willing to undergo the examination at a time when they're not having any symptoms or problems. And I understand that can be a difficult decision to make sometimes.

Dr. Graham: Now for most people as I talked to them, the difficult thing about the study isn't really the study itself, but actually getting ready for the study.

Dr. Tender: That is commonly believed, and I believe that as well. The hardest part about a colonoscopy is the prep. It's cleaning yourself out, but you know, if you're going to expect me to boldly go where no man has gone before, then we've got to have it clean so that we can see. The quality of the exam is only as good as the cleanliness of the exam, and the preps have actually improved quite a bit lately. I think every major drug manufacturer in the country would like to come up with a better tolerated prep, because they understand that is the biggest limitation to people agreeing to the examination. But even the preps are getting better, and once you've gone through that, for most individuals the examination is a breeze. A light sedative is given for the exam; most people don't even remember the exam or have very little recollection of the exam or what happened.

Dr. Graham: A lot of people who talk about these things in the press or on the radio. They'll talk about one of the older preps, and we don't need to give any names here, but basically they involved drinking a gallon or more of liquid at a time. Is that still commonly used?

Dr. Tender: That is commonly used, although one of the more common preps now actually uses mixing the prep with Gatorade, or ginger ale; something that is a bit more palatable and kind of masks the salty taste of the electrolyte in the solution. But what you're referring to is a Lavage prep, still fairly commonly used because they are extremely effective.

Dr. Graham: But there are ways that maybe you don't have to drink quite that much.

Dr. Tender: There are ways that you don't have to drink quite that much. The volumes are being limited, and in fact there is a new product on the market that basically provides the same quality of prep with half the volume.

Dr. Graham: Oh, that's fantastic. Now, the other thing that gets a lot of press is the whole notion now of virtual colonoscopies. Can you tell us a little bit about that?

Dr. Tender: Well, let me make sure that our listeners essentially understand the difference. When we talk about colonoscopy, or traditional colonoscopy, this is a flexible tube with a fiber optic camera that is physically inserted into the colon, through the anal opening, and it's gently passed around the colon, to directly visualize through the camera, with a human eye, the inner surface of the bowel. The virtual colonoscopy is really a totally different technique. It utilizes cross-sectional imaging technology and advanced software to reconstruct pictures of the colon, that have

accuracy rates that are in the right hands just as good as that of a true colonoscopy.

Dr. Graham: But if you see something on the virtual colonoscopy, on the pictures, you can't take it out, like you can on a regular colonoscopy. Can you?

Dr. Tender: No, you can't, and that's the main advantage of the traditional colonoscopy: if you see something, particularly a polyp or a pre-cancerous type of growth, you're poised to remove it right there on the spot. And I would point out, that some of the later evidence coming out, suggests that even in average risk people, the chance that they may find a polyp of a pre-cancerous nature in the colon can be as high as 25 to 30 percent, and so for two to three out of every 10 people that have this, they would have to go on to have another examination after the virtual colonoscopy.

Dr. Graham: Now is the prep for the virtual colonoscopy any easier?

Dr. Tender: No, it is essentially the same, although I understand there is software in the development stage that is trying to image the colon and subtract out the luminal contents of the colon — that is what the prep would clean out. But to my knowledge that is still very much in its infancy; those techniques have not been compared to the standard techniques, and I don't think that can be recommended just yet.

Dr. Graham: So if I I'm thinking right here, you go through the prep once for the virtual colonoscopy: They see something, they say “we've got to do a regular colonoscopy,” then you've probably got to go through the prep a second time.

Dr. Tender: You've got to go through the prep twice. And that continues to be the main practical limitation, and it's a major limitation, to what is, in theory, reasonable technology.

Dr. Graham: Are there other things that you would consider using a colonoscopy, for other than just screening for colon cancers?

Dr. Tender: Yeah, there are quite a few therapeutic applications for colon cancer. You know, of course we like to diagnose and treat the colon cancers before they cause symptoms in the patient, but sometimes patients can present with blockages of the bowel, and the colonoscope can be used to deploy technology that can actually relieve the blockage, and make the treatment less complicated for the patient. That would be one example.

Dr. Graham: That's fantastic, and advances are being made in the technology of the studies? And the other advantages that you can give to the patients?

Dr. Tender: Every day. That's one of the challenges of this kind of work is keeping up with that, to be sure the patients have available to them the latest treatments, the latest therapeutic options and tailoring those treatments to what is going to be best for their particular situation.

Dr. Graham: And it's nice that you make that commitment for your practice.

Dr. Tender: Well, we get a lot of joy out of it. I like to say, if the patient's having chest pain or if the patient's having trouble with their bowels, a lot of times they'll come and see the doctor about their bowel trouble first. [laughs] So we're very excited about that.

Dr. Graham: Just because I can't emphasize this point enough, the preparation is easier than it's been before.

Dr. Tender: The preparation is easier than it's been before.

Dr. Graham: The study itself for many people isn't even remembered?

Dr. Tender: That's true.

Dr. Graham: We only have to put a person through it every 5 to 7 years?

Dr. Tender: Well, it depends on what's found. If the exam is clean, and the patient has no family history, generally not more than every 10 years. But if a polyp is found that has a pre-cancerous state, we generally like to put them on a slightly more increased surveillance interval, so it may be every 3 to 5 years.

Dr. Graham: And we're looking at a study that may not only just find cancer early, but potentially prevent it from happening to begin with?

Dr. Tender: Yeah, that's a very good point. There are now large analyses being developed that show that applying colon cancer, I'm sorry, applying colonoscopy to a screening population, not only removes pre-cancerous lesions but may very well lower the incidence of colon cancer in that population. And being that we don't really know exactly know what causes colon cancer, the only real hope for cure is early detection.

Dr. Graham: And fortunately, most insurance companies are now accepting this and covering colonoscopies for screening.

Dr. Tender: I would certainly encourage anyone to check with their local carrier to make sure that is the case. But you're exactly right — insurance companies and even Medicare does cover the screening exam.

Dr. Graham: Well, Dr. Tender, this has been very enlightening. And I hope the rest of the folks listening to this can really take this to heart, and if you're the right age, and the right population, call your regular doctor; consider being seen about getting one of these done.

Dr. Tender: Thank you, Dr. Graham.

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Dr. Graham: Once again, I have to thank Dr. Tender for a great conversation. It's always fun to talk to an all-around nice guy, a technically incredible surgeon, and a fountain of knowledge, one with some humor and wit, in taking a topic that is not the most fun thing in the world to talk about. Not the most appealing topics to consider, I hope I'm not catching any of you at meal-time, but making them worth listening to and getting some real good information out of things.

So, what else is going on in medicine these days? There's a broad question if there ever was one. What I want to try and do with these other stories is find something that relates a little bit to the topic we've been discussing, but takes it not quite to prime time readiness. We've got an interesting topic here to look at today.

Now, I do want to put in here, I am an oncologist, that's an area that interests me amazingly, but I don't want to make this just a show about cancer. There are so many other incredibly interesting fields of medicine. Yes, I touched a little on cancer today, but with colonoscopies I thought it was really important to do that.

This story goes a little bit along that same topic; it touches a little bit on cancer, but has a lot of really interesting ideas in here as well. Today's story comes from the January 2006 *Journal of the Science of Food and Agriculture*. It's a study that was done at the University of Massachusetts Dartmouth, by a Dr. Katherine Neto. Some really interesting things, looking at a compound that is in cranberries, proanthocyanidins, or PACs. Now maybe you understand why we use abbreviations as much as we do, because I really don't want to say that word as many times as I might need to in this story. I've got to be straight with you, I had to practice a few times before I was even able to say it like I did.

Anyway, back to the story, these PACs. We've known about them for a long time. There are some common types called B-structures PACs, and they're present in a lot of different foods. But, then there's these rather unique structures called A-type PACs, and they are pretty much uniquely in cranberries. And interestingly enough, it is these A-type PACs that help prevent things from sticking. And that's actually what is of use, when there is a urinary tract infection, you drink a lot of cranberry juice, and it gets better. It's those A-type PACs that are keeping the bacteria from sticking to the wall of the bladder and causing the infection. Well anyway, Dr. Neto wondered if there might be some other uses for these A-type PACs. So what she did, she took whole cranberry extract, and then broke it down into different fractions that were variously PAC-rich. And then she did what is really the most basic type of study, looking at: does something affect cancer or not?

She took these extracts, the fractions of these extracts, and put them in a dish with different cell lines. There were cell lines from lung cancers, there were cell lines from colon cancers, there were cell lines from leukemias, and then as a control, some mouse embryonic cells, just to see what it would do on "regular" type cells.

And what she found was really interesting. What they found on eight different cancer cell lines, was that these A-type PAC rich fractions slowed the growth of the cancer cells. Good information, interesting information. But let's make absolutely sure that it isn't just slowing the growth of everything. And interestingly enough, the mouse embryonic cells had normal growth patterns. No slowing the growth of those cells. Now we're looking at an effect that is seemingly uniquely 'against' the cancer cells. Well like I said, this is the first kind of study that we ever do to see if there is some sort of compound in treating or preventing cancer, and this passed the first step.

It's just the first step. In all honesty, very few of the compounds that get past this first step ever end up meaning anything. But it's an interesting first step, and it's one that deserves a lot more study. And believe you me, I'm going to keep my eyes out for it, and if I hear something interesting about it, I'll let you know right away.

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Well, that brings us to the end of this sixth Carlecast. I hope you found our discussions and our stories interesting, enjoyable and enlightening. I know

every time I get to talk to one of these other doctors and dentists, as in shows to come, I learn tons of new information that I get to use every day when I deal with patients. I hope it's information that you learn something from, that you get to use in your daily life as well.

We'd certainly love to hear from you. We have an email link on our webpage: www.carlecast.com. Send us information for show topics, send me something to call this other medical story that I throw in here on a regular basis, let's give it a new title. Or just any various comments that you might have for us. We're always open to helpful criticism. In terms of show topics, I know I say this about every time, I can't emphasize this enough, there is no way I am ever going to be able to discuss a specific case-- laws prevent me from doing that. If we want to hear about general topics, if there's just some general thing you'd like to hear about, I'd love to hear about that, and let me find the expert in the field, and get more knowledge about it out there.

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So until the next time we get a chance to sit down and talk together, I am Dr. David Graham from Carle Clinic in Urbana, Illinois saying, stay healthy.