

**SYNCHRONOUS COLON AND RECTAL CANCER: TOTAL PROCTOCOLECTOMY
WITH END ILEOSTOMY
RETREAT HOSPITAL
RICHMOND, VA
July 24, 2007**

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ANNOUNCER 1: The program is sponsored by Ethicon Endo-Surgery Inc.

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ANNOUNCER 2: Welcome to Retreat Hospital in Richmond, Virginia. Over the next hour, see an expert discussion of the technical aspects of an open total proctocolectomy and total mesorectal excision using Harmonic technology. During the presentation, surgeons Cary Loughton Gentry and Sean O'Donovan will discuss the implications of multiple colon and rectal cancers as well as the recent pathological designation of serrated adenoma. OR-Live makes it easy for you to learn more. Just click on the "request information" button on your webcast screen and open the door to informed medical care. Now let's join the doctors.

00:01:02

CARY L. GENTRY, MD, FACS, FASCRS: Good evening. I'm Cary Gentry, colorectal specialist here in Richmond, Virginia. I'm here with my partner, Sean O'Donovan. We're glad you're here with us tonight. Tonight we're going to discuss a patient who has colon and rectal cancer, and we're going to set up a format where we'll discuss the actual patient, we'll have a slide presentation, and during the presentation, please feel free to e-mail your questions in to the OR-Live site so that we can answer them at the end of the discussion. Let's start off first by saying that Retreat Hospital, we are proud to have the only colorectal program in the market, and we are certainly glad that you're here with us tonight. Let's first start out with the first slide in our presentation tonight. This slide is showing the U.S. cancer cases that were estimated in 2006 presented by the American Cancer Society. As you see here, the prostate cancer for men is the most prevalent cancer, lung is number two, and colon and rectum is number three. The next slide that you see is looking at for women. For women, the number-one col-- number-one cancer is breast cancer, followed by lung, and then colon and rectal cancer.

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SEAN O'DONOVAN, MD, FACS, FASCRS: Now if you look at U.S. cancer deaths, you'll see that with men, on the next slide, colon cancer deaths are actually the second most common, accounting for about 10%. And in women, it is still, as you see on the next slide, is third, behind breast and lung cancer.

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CARY L. GENTRY, MD, FACS, FASCRS: The next slide that you'll see looks at the cancer death rate for men over the last 70 years. And it's interesting that both colon and rectal and prostate cancer, the number one and two -- number one and three cancers -- or two and three cancers actually have gone down in incidence. For women, the cancer deaths have gone down for breast as well as colon and rectal. I think this represents the increase in screening efforts that we've had in this country to reduce those numbers of cancers. Sean, one of the things that I'm asked about

frequently is, "what can I do as a patient to reduce my chance of getting colon and rectal cancer?" And what are the things that you impart to them about why people have colorectal cancer?

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SEAN O'DONOVAN, MD, FACS, FASCRS: Well, typically, I'll explain it as in half of what their risk factors are are things they do to themselves and the other half are genetic. And we're going to touch on the genetic part later. As far as lifestyle modifications that they can do, I strongly feel that adequate amounts of dietary fiber, reducing the amount of red meats that you take in, increasing amount of exercise, and moderation in alcohol and other things that have been shown to predispose people to developing malignancies.

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CARY L. GENTRY, MD, FACS, FASCRS: So environmental factors are very important in the prevention of colorectal cancer. The other component, as you mentioned, is the genetic component. And if you look at our next slide, you see that from a basic science standpoint, there's two pathways. There's the loss of heterozygosity pathway and the replication-error pathway. And we're seeing more and more patients who are coming to our office educated through the internet about their cancers. As you'll see later in the discussion, knowing these genetic pathways does impart some understanding about the way these patients should be screened. So let's review the two things that we've looked at, environmental factors and genetic factors. For genetic factors, traditionally, carcinoma was seen as a three-step process. We have initiation, promotion, and then progression. The initiation involves a complex interplay between environmental factors and then the host susceptibility. We're seeing more patients who have hereditary factors where the underlying genetic reasons overpower the environmental influences. And lastly, in sporadic cancers, which most of our patients have, environmental factors do play a significant role. The other question that I'm asked is, "is there a greater chance for you to have a right-sided colon cancer if you have genetic reasons or do you see a trend in the number of cancers you're seeing on one side of the colon or the other?"

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SEAN O'DONOVAN, MD, FACS, FASCRS: I think because of more aggressive screening protocols, we're picking up right-sided colon cancers certainly a lot more early and a lot more commonly than we used to when we just used to do flexible sigmoidoscopies and barium enemas for evaluation. There does appear to be a right-sided predisposition in patients who have a genetic predisposition to developing colon cancer, however.

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CARY L. GENTRY, MD, FACS, FASCRS: So basically that's some basic science and some baseline elemental factors that we can use to help these patients become more educated about their disease and about treatment for colorectal cancer. Let's present the patient. The patient is a 79-year-old female who presented with rectal bleeding and mild abdominal pain. The patient was subsequently referred to a gastroenterologist and had a colonoscopy, which revealed two masses: one was in the right colon, which biopsy proved it had no carcinoma, and one in the rectum which also proved to be an adenocarcinoma. Interestingly, the patient had eight polyps throughout the colon, and they were characterized histologically as serrated adenomas. This patient was then subsequently referred to genetic counseling because the patient had had some other family members who had had cancer. She was not aware of the type of cancer because they were her grandfather and grandmother, but nonetheless was referred counseling. And interestingly, had a positivity for the mismatch repair genes hMLH1 and hMSH2, which we'll discuss more and further in the disc-- in the broadcast. But again, she had some genetic reasons

for her colorectal pathology. She then was asked to come to see a surgeon, and I saw the patient in discussion. So if you look at the next slide, by definition, this patient had a synchronous colon and rectal cancer, which is a neoplasia, which is identified within six months of the treatment of the primary cancer and includes two or more separate colon malignancies, as we've mentioned. This is a fairly uncommon condition, and we see a greater frequency in patients who have genetic reason, such as HNPCC and those with inflammatory bowel disease and familial adenomatous polyposis. Sean, are you seeing more patients coming to you with education about colorectal cancer and is that allowing you to go further into this genetic discussion or what are you seeing with your patients?

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SEAN O'DONOVAN, MD, FACS, FASCRS: Yeah, I think the awareness is out there. It's unusual I think still to see a patient who's been referred, been through the genetic workup before they see a surgeon, but I think we all need to be strongly aware when a patient presents like this -- multiple synchronous cancers, a suspicious history, and particularly these serrated adenomas -- that you need to be concerned about a genetic predisposition, work up the patient appropriately, work up the family members so you can talk about the risk that the rest of the family's going to face, too. We are definitely seeing more patients who are aware of this, more patients are attuned to some of the genetic risk factors, more patients are coming in to get screening colonoscopy at an earlier age because their family member had colon cancer or a young friend had colon cancer. So I think the awareness is definitely out there.

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CARY L. GENTRY, MD, FACS, FASCRS: Right. And this certainly impacts our ability to educate and discuss the surgical options. If you look lastly at the slide, there is -- most of the cancers that we see, however, are sporadic, about 60%. About a third are familial, which means that there are some other family members with cancer, whether it's colorectal, endometrial, breast. And then there's a -- lastly, the more prominent genetic findings that we see is an HNPCC, which is about 3-5% of the cancers. So at this point, why don't we go ahead and show the video and we'll answer questions at the end of this particular segment, so please feel free to e-mail that during your -- during the discussion. This is, again, a 79-year-old female. We're making a typical lower midline incision, a midline incision. She's going to be in the modified Lloyd-Davies position with the legs in candy-cane stirrups. Pressures -- pressure points padded, SCDs, et cetera. The important point here is that do what's comfortable for you. Once we get into the abdomen, then we can start to explore and you see the identification of the colon mass with the tattoo.

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SEAN O'DONOVAN, MD, FACS, FASCRS: Do you find that that's important to tattoo perioperatively?

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CARY L. GENTRY, MD, FACS, FASCRS: I think for patients who you're doing laparoscopically or minimally invasively, that certainly is important, but again, this -- this pathology is obviously in palpation. Here you see the basically the dissection beginning. I start on the left side of the patient and begin the right colon resection initially. At this point, we're coming up to a small pedicle at the hepatic-- hepatocolic ligament, which you can divide with cautery or -- or with the Wave Harmonic instrumentation. We find that the -- the Wave Harmonic is nice because there's less lateral spread, and so as you can see here, we're by the liver, we're up near some very sensitive structures, and the Wave Harmonic is a nice technique there. At this point, there's a -- beginning to divide the meso-- the omentum here, leading down to the hepatic flexure, and we'll be able to identify the right branch of the middle

colic and the ileocolic vessels. I've found that the Wave gives you nice control there, good hemostasis, and we don't need to use clamps and ties, you know, with that instrumentation. Do you find that to be the case, Sean?

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SEAN O'DONOVAN, MD, FACS, FASCRS: Yeah, I've found sometimes, particularly when the patient has a very fatty omentum, that using the Bovie cautery tends to make it very slow and tedious, whereas using the Harmonic with the cavitation that you get from it really helps to dissect out the planes very nicely and exposes -- gets the omentum off very quickly and bloodlessly.

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CARY L. GENTRY, MD, FACS, FASCRS: Here you can see again a division of the vascular pedicle at the takeoff. This is near the middle colic vessel. And again, the Wave Harmonic is a nice instrument to use there with good hemostasis.

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SEAN O'DONOVAN, MD, FACS, FASCRS: Do you feel like you have to put ties on as well or clips at all on some of those vessels?

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CARY L. GENTRY, MD, FACS, FASCRS: The only time which you may want to use the Harmonic twice or use the instrument in a longer interval is when you have a patient with a calcified vessel. Those tend to be less difficult to coagulate. Because you remember, the Harmonic technology is looking at breakdown of protein. And if you're on a calcified vessel, you're going to have a less -- less tissue to work with, as it were.

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SEAN O'DONOVAN, MD, FACS, FASCRS: But you're comfortable taking all the mesenteric vessels with the Harmonic technology.

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CARY L. GENTRY, MD, FACS, FASCRS: Absolutely. At this point, we're taking -- we're coming across the mesentery where there are no vessels leading down to the left colon. Again, I've -- at this point, we're going to divide the terminal ileum, which will allow us to again mobilize the colon out of the -- out of the right side and work our way over to the left side of the colon. Again, the principles here oncologically are proximal to vess-- proximal division of vessels, gentle handling of the tissue, and again, division of bowel when appropriate. Again, we're coming across the omentum here. Again, the Harmonic is nice because it allows you good control; much quicker, much faster than the clamping and tying. We didn't mention the protractor, which is the wound protector. Again, from an oncologic standpoint, helps. Now at this point, we'll switch sides, we'll move over to the right side of the patient, and begin the -- the left colon mobilization, taking that off of the lateral peritoneal reflection. At this point, we can then start taking down the -- again, the lienocolic ligaments fairly easily. Again, Bovies are still helpful and efficient when you have a non-vascularized pedicle or non-vascularized tissue.

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SEAN O'DONOVAN, MD, FACS, FASCRS: Do you have any problems working in tight spaces with the Harmonic scalpel like that?

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CARY L. GENTRY, MD, FACS, FASCRS: The way it's designed, it seems to work fairly well in the pelvis, and we'll show a later point in the procedure where that's true. At this point you can see here the branch of the middle colic, and we're able to identify that and again, to divide that, clamp it, or come across it with the Harmonic Wave.

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SEAN O'DONOVAN, MD, FACS, FASCRS: Did you find that a number of this lady's vessels, being 79, were fairly calcified.

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CARY L. GENTRY, MD, FACS, FASCRS: There were, and one of the most difficult things is to know when to use it, when not to. So you err on the side of caution with that. Now at this portion of the case, we're coming down in toward -- into the pelvis. We'll be able to get behind the IMA here and enter into the retrorectal space, which will allow us to identify the left ureter, as you see right there, being able to grab that from the other side of the IMA. Excuse me, mesentery.

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SEAN O'DONOVAN, MD, FACS, FASCRS: I see you didn't have a stent in there. Do you selectively stent, or you always stent these patients?

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CARY L. GENTRY, MD, FACS, FASCRS: I typically don't stent. If the patients have -- had previous radiation or had previous surgery, those are the patients you're going to want to -- to probably have a stent in. the other -- the other times you'll want to have a stent in is when you have inflammatory processes like diverticular disease. So if you look back at the video, we're coming down into the pelvis quite nicely, and again, dividing some of the mes-- the omentum. We'll then divide the rectosigmoid junction with the TLC 75, again, allowing proximal division -- proximal lateral division there so that you can then do the mesorectal excision.

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SEAN O'DONOVAN, MD, FACS, FASCRS: Do you find it's helpful to get the bulk of the colon out of the way when you inch into the rectal part of the dissection?

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CARY L. GENTRY, MD, FACS, FASCRS: Right. Again, you're doing two cancer cases here, and so once -- you know, it's much easier to do the colon portion first and then do the rectal portion last. Getting the colon out of the way just helps technically and also is helpful. Now here's a point where we start the rectal dissection. We're down in the -- this is the left -- the left side wall where the Wave Harmonic is very helpful. Again, this is -- can be used for sharp dissection. This is the sharp dissection total mesorectal excision, so we're getting behind the rectum, we're down to the pelvic floor, coming up on the anacoccygeal ligament. Again, the Bovie again is a great apparatus for this, but you may get into a little bit of issue with the lateral stalks. Have you had any issues, you know, using the Harmonic in tight spaces as well?

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SEAN O'DONOVAN, MD, FACS, FASCRS: Well, I think the Wave helps a lot. Sometimes you can use the 5mm Harmonic, particularly when you're deep in the pelvis. I've had some issues with electrical current sometimes in the pelvis there, and I think using the Harmonic works very well as far as minimizing the lateral spread of electrical energy deep in the pelvis.

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CARY L. GENTRY, MD, FACS, FASCRS: I agree. At this portion of the case, we've gone from the abdominal portion down to the perineal portion of the proctectomy and beginning the dissection laterally at the pelvic floor. Here I'm using the cautery dissection, however have you had a chan-- do you use anything other than the cautery at this point?

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SEAN O'DONOVAN, MD, FACS, FASCRS: Yeah, I and a couple of my other partners will use the Harmonic for this part. It works very well going through the ischiorectal fascia, it works very well to divide the levators outside of the rectum, and really makes it a pretty bloodless dissection.

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CARY L. GENTRY, MD, FACS, FASCRS: Again here grabbing the rectum and taking the rectal specimen posterior once you open up the anacoccygeal ligament, reflecting

the vagina anteriorly and then taking the rectum off of the vagina with fairly minimal difficulty. At this portion of the case, basically the specimens are out, we'll irrigate from above with antibiotic safety irrigation. And once all that's done, we close the pelvic floor with long-lasting absorbable suture and subcuticular stitches as well.

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SEAN O'DONOVAN, MD, FACS, FASCRS: Do you always close the pelvis? I know some of my training, we were always told to pack the pelvis because it was always going to be infected if you closed it.

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CARY L. GENTRY, MD, FACS, FASCRS: I have not had to -- the incidence of infection that I thought I was going to have, and so I've closed it. Now here's a picture of the -- or a diagram of the colon, the colon cancer. We're opening up the rectum here, looking at the rectal cancer. And as you can see there, that's there. Now at this portion, we'll take the skin and perform a ileostomy -- Brooke ileostomy in the standard fashion, taking down the skin in elliptical fashion.

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SEAN O'DONOVAN, MD, FACS, FASCRS: Was there a reason you decided not to reconstruct this woman? It looked like you had a decent margin there on the rectal cancer. Is there a reason you didn't put her back together?

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CARY L. GENTRY, MD, FACS, FASCRS: Other than her physiologic age, a couple things came into play. Number one was that even though the preoperative ultrasound showed that this was a fairly early rectal cancer, we weren't sure whether or not she was going to need chemo-- or, you know, radiation or chemotherapy post-op, and so performing a J-pouch, ileal J-pouch would be something that I would want to defer until we found the final -- found out the final pathology. Interestingly, her final pathology was a stage-one rectal cancer. It was a T2 lesion, and her colon cancer was a T3 lesion, which was, by definition, stage two. So she had fairly early cancers, but due to her physiologic status and overall the risk of her possibly getting chemoradiation, we felt doing a pouch would not be appropriate for her, although it is not a contraindication to -- considering that.

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SEAN O'DONOVAN, MD, FACS, FASCRS: Did you give any consideration to doing a synchronous resection but still preserving some of the colon?

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CARY L. GENTRY, MD, FACS, FASCRS: Right. Good point. I mean, without the genetic information and without the -- certainly the colonoscopy work it's certainly something where you'd want to discuss that with her, but she has mucosa at risk, and I would not leave that behind in that situation. Yes, there are patients who you can do that with, but not in her situation.

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SEAN O'DONOVAN, MD, FACS, FASCRS: Did the serrated adenomas play a role in that?

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CARY L. GENTRY, MD, FACS, FASCRS: They did, and we'll talk about those serrated adenomas. Here, we're finally -- we're turning the ileostomy, and we can now come from the video and go back to the presentation. So in summary, we have a 79-year-old lady who had a synchronous colon and rectal cancer. The stage of the colon cancer was stage two. The stage for the rectal cancer was stage one. This patient also underwent a total abdominal hysterectomy and a bilateral salpingo-oophorectomy due to the fact that she has a greater chance for endometrial cancer and also for ovarian metastasis. So let's talk about her pathology. Sean, she had serrated adenomas, and serrated adenomas are something we're hearing more and

more about. Tell us what is going on with serrated adenomas. What are they and what do we need to be concerned about histologically and pathologically?

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SEAN O'DONOVAN, MD, FACS, FASCRS: Well, it's a relatively recently described entity. Basically, they look like, under a microscope, they look like typical hyperplastic polyps, but they behave cytologically more like an adenoma. The problem is in our training many years ago, we were taught that hyperplastic polyps were a benign entity, you didn't need to worry about them, you didn't need to aggressively screen them; they were just one of those things that you found occasionally in people and so what? But due to this more aggressive nature of these polyps as well as some of the polyp syndromes that are now being described, I think it's very important that people recognize that this is a genetic abnormality and that these lesions, despite the fact that they clinically appear very benign are actually much more like adenomas and patients need to be screened far more aggressively than we traditionally would just for a simple hyperplastic-looking polyps.

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CARY L. GENTRY, MD, FACS, FASCRS: And the PowerPoint presentation, if you look at a photo micrograph of the serrated adenoma, it looks like a hyperplastic polyp, but it's on steroids. It has these dilated basal crypts, it has occasional goblet cells and mucinous cells, and it can be found on either side of the colon. And as we talked about earlier with the genetic pathways, serrated adenomas follow the replication error pathway, and so you can look for microsatellite instability in those patients. If you compare those with the hyperplastic polyp, as Dr. O'Donovan was mentioning, hyperplastic polyps have no dysplasia, they're more on the left side, they're smaller, and they look distinguishably different than the serrated adenomas. They have no malignant potential. So what are you counseling your patients on in terms of serrated adenomas if you have one with a serrated adenoma? Should they be screened every five years or three years, like a regular adenoma, or should we be more aggressive?

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SEAN O'DONOVAN, MD, FACS, FASCRS: I think first of all, all the polyps need to be removed. You need to make sure that all the polyps have been cleared and then follow them fairly aggressively like you would anybody who has tubulovillous adenomas so long as, again, they don't have any other risk factors like a much stronger family history, et cetera. But I think just paying attention to the polyp, if you get the -- if you took out a large polyp that you were worried about and you get the pathology back and it says simple hyperplastic polyp but this was a 2.5cm polyp, I think you need to have a lot of suspicion that maybe this was not really just a hyperplastic polyp, that maybe something of that size was a serrated adenoma, and you need to follow them much more closely.

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CARY L. GENTRY, MD, FACS, FASCRS: Right. In terms of the follow-up with these patients, I think the general feeling is that they should be followed as closely as adenomas and maybe more frequently if there's a genetic reason. Let's look at the next slide briefly, at the Harmonic technology. One of the things that we like about the instrument, things that we like about the way it's used is that we're spreading energy across a very narrow area, and this Harmonic technology uses the breakdown of protein to -- denatured protein, which allows you to have a coagulant. As you saw during the procedure, there was very minimal spread, very minimal damage laterally, and you could do the procedure fairly easily with just the Harmonic. We didn't use any clamps and ties, we didn't use any suture material and had a good result. At this portion of the discussion, we're going to field some questions that have been presented on the e-mail. One of the questions that we just received looks at

the use of minimally invasive surgery with this Harmonic technology, and do we do minimally invasive surgery? Do you perform laparoscopic colon surgery?

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SEAN O'DONOVAN, MD, FACS, FASCRS: Yes, and I think it's one of the things that's helped us revolutionize some of the -- some of the laparoscopic surgery that we do. One of the big concerns always in the past has been use of electrical energy, and you worry about capacitance and remote injury outside of the operative field using electricity in a closed abdomen, and the use of the Harmonic technology has allowed us to use safe dissection, cautery, minimize blood loss all with -- with no worries about stray electrical energy causing unanticipated injuries.

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CARY L. GENTRY, MD, FACS, FASCRS: What about the concern about colon cancer and, you know, the spread of the tumor cells within the belly when you're doing laparoscopic colon surgery? Has that changed the last five or six years or are we able to now do laparoscopic surgery for colon cancer?

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SEAN O'DONOVAN, MD, FACS, FASCRS: Well, initially when the laparoscopic technology and techniques began, everybody started to use laparoscopic surgery for colon cancer. There were big concerns, however, about early spread and implantation of tumor cells at trocar insertion sites. But what happens is there was a quick moratorium put on resection for colon cancer laparoscopically. Since then, there've been some nice studies, the COST trial really answered this quite well, looking at laparoscopic colon surgery in colon cancer patients, looking at tumor implantation, looking at recurrence, and has shown that laparoscopic colon surgery done by accomplished laparoscopic surgeons and accomplished colon surgeons is appropriate for appropriate stages of colon cancer, yes.

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CARY L. GENTRY, MD, FACS, FASCRS: The other thing that we're finding is that, with laparoscopic surgery, is that it's a faster procedure, and with the use of this harmonic technology, we can, you know, get through the procedure quicker, less operative time, less trauma to the patient. One other question that we've received is what is the average length of stay for these patients who undergo laparoscopic colon surgery, and what is your typical stay?

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SEAN O'DONOVAN, MD, FACS, FASCRS: Well, again, it's very -- it depends on the patient. A simple right colectomy versus a complicated procedure like this, if you'd done this laparoscopically, it's still not going to be as impressive, but all the data have shown that the length of stay is generally a day or two or sometimes even more so less than if you'd done the same procedure in an open or conventional fashion. The other advantages that we've found with laparoscopic colon surgery is there's significantly less pain and also there's a better cosmetic effect by limiting the size of incisions that you have to do to resect the specimen.

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CARY L. GENTRY, MD, FACS, FASCRS: One of the questions that comes in from Australia is: what time savings does the Wave offer for the perineal dissection, and as Dr. O'Donovan mentioned, he and several other partners use that in the dissection. I think that the perineal portion can be done, you know, 50%, 60% quicker without clamps and ties. The -- of course, patient variability is important, but I think there is a huge savings not only in time but, you know, patient discomfort as well. Another question we have here is: is the Harmonic as good a dissector as the -- the Wave Harmonic as good as previous dissection Harmonic instruments? I've found that it's probably a little bit better in some cases. It does not allow you to have as much dissection in the peritoneum, but usually those are avascular planes, so I

haven't found that to be a real problem. Just one comment about the colon cancer that Dr. O'Donovan was mentioning is that with laparoscopic surgeries, it's fairly clear that for colon cancer, the laparoscopic technique is acceptable, the results are as good, and in one study from -- from Spain, the actual survival was better. This cannot be said for rectal cancer, and the debate's still ongoing about rectal cancer. Do you use laparoscopic techniques for rectal cancer and how does harmonic help in that venue?

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SEAN O'DONOVAN, MD, FACS, FASCRS: Yes, I'm still uncomfortable using it for a big bulky rectal cancer, particularly if it's low down, particularly if it's a male with a very narrow pelvis, but for women, upper rectal cancers, I think the visualization is excellent, the Harmonic allows you to dissect through the mesentery very nicely. As you saw on the operative video that you had, that picture of the rectum and dissecting it out following the appropriate planes is also very easily seen and done laparoscopically just like it was shown in the video. I think big bulky cancers, narrow pelvises, very scarred pelvises, again, I think you have to use your surgical judgment and adjust the operation to the patient.

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CARY L. GENTRY, MD, FACS, FASCRS: How long does it typically take to do, let's say, a laparoscopic sigmoid colon with this technique?

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SEAN O'DONOVAN, MD, FACS, FASCRS: Well, I think, again, that's going to depend where you are on your learning curve as far as doing laparoscopic surgery. Early on when we started, it always took us about an hour longer to do a procedure, but since -- since, you know, we've become more facile with the technique and also since we've adopted a lot of hand-assisted laparoscopic technique, our operative times have shrunk significantly, and quite frankly, I can do a laparoscopic sigmoid colectomy far quicker than I can do it open now. I still take a little bit longer on the rights and a rectal resection still it's a little bit longer than if I was doing it open.

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CARY L. GENTRY, MD, FACS, FASCRS: Sure. We have another question here. The question is is that if these synchronous lesions after resection would have allowed for a colonic J-pouch reconstruction, would we have considered this option, and if so, what is my opinion about the colonic J-pouch? I think that the key point here is that we're there for cancer, and if the decision was made preoperatively to not give chemotherapy and radiation, even if the ultrasound illustrated a -- I'd say an appropriately radiated-type lesion, I would still recommend a total proctocolectomy for synchronous lesions because this patient has mucosa at risk in this patient. If there is someone who wants to avoid an ileostomy, then the discussion regarding a segmental colectomy can be entertained, but it's going to require vigorous follow-up with a colonoscopy every year to two years. What do you think about the colonic J-pouch? And we'll comment about that.

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SEAN O'DONOVAN, MD, FACS, FASCRS: I think for this patient, this was very appropriate and I think what the majority of people would've decided to do. A 79-year-old lady, quite frankly, her sphincter control is not that good, even with a colonic J-pouch, and particularly if you had to add postoperative chemo and/or radiation to that area after reconstructing her, I think her quality of life may not have been that good. And I think this is a discussion you have to have preoperatively with the patient and compare and contrast what to expect. If this had been a 50-year-old, a 40-year-old, a younger vigorous person with hereditary non-polyposis colon cancer, yeah, I think I certainly would've offered them the option of a J-pouch depending upon adequate sphincter function and other things that would've told me

whether that was an appropriate thing or not. But I think you should not exclude surgery like that just -- as an option, but in this patient, it was very appropriate to do what you decided to do.

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CARY L. GENTRY, MD, FACS, FASCRS: Right. And there is nothing worse than a radiated colonic pouch or ileal pouch. Typically the function's poor, and so if there was an option to do this, and let's say the patient wanted to do a segmental colectomy, you do the proctectomy, you leave them a rectal stump if there's room, and then you -- you look and see what the final pathology is and you come back if you indeed have a situation where you don't have to radiate them. I think that's fair. Another question comes in asking which vessels do we take with the Wave Harmonic? In this case, as you saw, we were able to take all the major vessels: the ileocolic, the middle colic, the branches of the middle colic, and also the IMA, as well as the lateral stalks. So I haven't seen any situations where you can't take a large vessel. I think the limiting size is about 7mm. Is that your experience?

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SEAN O'DONOVAN, MD, FACS, FASCRS: Yeah, certainly the mesenteric vessels are all easily done and safely done using the Harmonic technology. I think the concern is you have to make sure that you use appropriate technique. When you do the calcified vessels, make sure you're on slow cook. You may want to burn it a couple times proximally and distally before you divide. And the other thing is when you do divide the vessels, you want to make sure you don't divide them while they're on tension because if they're on tension, sometimes you will get partial denaturation of the protein, the vessel will retract, but you won't have got as good a seal as you normally would have, and you want to make sure things aren't on traction when you divide them.

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CARY L. GENTRY, MD, FACS, FASCRS: Another question comes in asking about operative blood loss with the Harmonic Wave. Again, fairly minimal blood loss with this technique. Again, as I mentioned before, you may want to divide and coagulate twice those calcified vessels in those older patients.

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SEAN O'DONOVAN, MD, FACS, FASCRS: I would echo that and say that I think our blood loss has diminished, particularly using that instrument. Our times have diminished because there's frankly a lot less wasted time with clamping and tying. And nowadays I'm quite often surprised, I'll finish a case and I'll look up on the nurse's Mayo stand, and there'll be all these 2-0 Vicryl ties that I normally use, and they're just sitting there and I haven't used them at all during the case. So you know, you really can get through the case a large percentage of the time without having to waste any time clamping and tying vessels.

00:35:22

CARY L. GENTRY, MD, FACS, FASCRS: Next question that we have here is: is there a situation where you would not want to use the Wave Harmonic? And when would that be? I think there would be cases where if you have pelvic inflammation and major vascular structures, the ureter are around you, those are situations where you're going to want to continue to use a sharp dissection to avoid, you know, injury, regardless of -- regardless of the technology that you're using. And in this particular patient that we had, there was no pelvic inflammation, the ureters were easily identifiable, and that was not a problem.

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SEAN O'DONOVAN, MD, FACS, FASCRS: Have you had the occasion to use it when someone's had a previously irradiated pelvis? Like if a patient's had upper rectal

cancer, you've known about it, you've preoperatively radiated it, have you had the chance to use it and have you seen any significant difference in bleeding?

00:36:16

CARY L. GENTRY, MD, FACS, FASCRS: You know, I've had the chance to use it in patients who have preoperative radiation for rectal cancer, and in those patients, it's been fairly clear that, it again, it works very well. The tissue's a little more friable, and so this is a situation where you are going to have a little better control with the Harmonic Wave. Getting back to the question about how long patients are in the hospital, typically our patients are in the hospital anywhere from, you know, three to five days for laparoscopic colon surgery. The patient that you saw this evening was in the hospital for about five days and went home, you know, eating regular food. So that's the general -- the general consensus. Have you done any laparoscopic total proctocolectomies like we did today -- showed today? Have you done anything that extensive?

00:37:06

SEAN O'DONOVAN, MD, FACS, FASCRS: I've not to date done it. I know a couple of my partners have. I've done many laparoscopic total abdominal colectomies. I've not added the proct-- the proctectomy part. I've done several patients separately who had previous resections for Crohn's disease and they needed a proctectomy and have done that part laparoscopically, but to date I've not done a complete total proctocolectomy laparoscopically. But I certainly see no reason not to, finding the appropriate patient.

00:37:35

CARY L. GENTRY, MD, FACS, FASCRS: Right. We have another question that came in asking about drains: do we use drains for colon and rectal surgery? My typical answer is I don't use drains across the board for colon cancer, however for rectal cancer, if they've received radiation, because of the edema that you see in those patients, I have used a drain in those initially.

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SEAN O'DONOVAN, MD, FACS, FASCRS: My feelings would be the same. I think if you have cavity that is going to drain, if you have a well-defined abscessed cavity that is why you had to operate or if you have a deep pelvis that is going to just fill up with fluid, it's nice to leave a drain in for a few days, reduce the amount of inflammatory fluid that collects in there or infected fluid in the case of an abscess and just minimize the chances of a patient developing another abscess. Again, I would say what you did, on a straightforward left colectomy, sigmoid colectomy, right colectomy, I don't traditionally leave a drain in at all.

00:38:37

CARY L. GENTRY, MD, FACS, FASCRS: Sure. Another question comes in about the Harmonic technology: how did you justify the increased cost of the Harmonic technology versus the standard clamp, cut, and tie techniques in open surgery? I think this is where the time savings is important. You can cut off at least 30 minutes, maybe even 45 minutes with the Harmonic technology versus the open, you know, with the clamps and ties. And I would say that that would be where your savings would come in. Fair answer, do you think?

00:39:10

SEAN O'DONOVAN, MD, FACS, FASCRS: Yeah. You know, I think the technology's there. If you -- you know, all of our operating rooms here have Harmonic instruments in them. If we're not using them, the general surgeons are using them, the head and neck surgeons. It's certainly a technology that is very prevalent, and most Western O.R.s, 20th-century O.R.s -- 21st-century O.R.s are going to have them inside. It's a technology that's very useful, it's a technology that saves time, it's a very safe technology. The only downside that I've discovered is that the tips of the

blade get very hot, and you need to make sure that when you put the instrument down that you protect the surface that you're putting it down on. But it is very quick, very efficient, and has really made our life in the O.R. a little bit easier and certainly helped a lot of patients.

00:40:01

CARY L. GENTRY, MD, FACS, FASCRS: We have a question here about colon and rectal surgery programs. Do you think there's a trend in the United States with colon and rectal surgery being in dedicated units, like cardiac units, like bariatric units, and is there a role for colorectal programs like we have here at Retreat Hospital?

00:40:20

SEAN O'DONOVAN, MD, FACS, FASCRS: Yeah, I think the -- the literature is profuse with data that's coming out that's showing that people who do a lot of the same thing have good results. And I think it's not just limited to colon and rectal surgery, it's also in pancreatic surgery and some of the much more complex surgery that happens. Having a dedicated colorectal surgery unit or a team approach really makes a difference as far as everyone being on board, that it's the same thing every time, and it tends to minimize the amount of complications, everybody's aware of what the next step is. In the progression of a patient going straight from the O.R. or even in the preoperative work-up is, if you have everybody focusing on that patient and that disease, the patient tends to have a better result.

00:41:14

CARY L. GENTRY, MD, FACS, FASCRS: I think that's fair. Well, that's about all the time we have, Dr. O'Donovan. I'm Cary Gentry. We thank you for joining us here tonight at Retreat Hospital at HCA Richmond, and we hope that you have a good evening, that you learned something about colon and rectal cancer and the new treatments and technologies used to treat colon and rectal cancer.

00:41:33

ANNOUNCER 2: This has been an expert discussion of the technical aspects of an open total proctocolectomy and total mesorectal excision using Harmonic technology from Retreat Hospital in Richmond, Virginia. OR-Live makes it easy for you to learn more. Just click on the "request information" button on your webcast screen and open the door to informed medical care.

00:41:55

ANNOUNCER 1: The program is sponsored by Ethicon Endo-Surgery Inc.

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[end of webcast]