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LEAYN Welcome, everyone, and thank you for having me. One of my jobs as a PA in the Department of Radiation is to
FLAHERTY: prepare patients to be able to deal with and anticipate the side effects that we know that we're going to cause from radiation. I think education is very important for our patients so that it can help to alleviate some of the anxiety and uncertainties that they are experiencing when they first come. So radiation is indicated--

[PHONE BEEPING]

for the treatment-- my phone is listening-- for many GI, but also GU and GYN malignancies. It can be used either definitively, meaning radiation is going to be the primary curative therapy that the patients are going to receive, or it can be given pre-operatively or post-operatively. Oftentimes, it is also given in combination with chemotherapy, and so we have to be cognizant of that when dealing with or anticipating side effects as well.

So the majority of the radiation delivered is going to be external beam treatments. 3D IMRT means a whole lot to you guys and it means a lot to us as far as reducing the potential for side effects and what we anticipate patients to experience at certain points in their treatments. But also, brachytherapy is used as part of the treatment as well for prostate cancer, although the interstitial is less popular now with active surveillance as part of the treatment guidelines. But also, it is used as boost treatments for cervical and endometrial cancer treatments, particularly used in curative therapies.

And then we treat the vaginal cuff with vaginal cylinders. That's generally not associated with as many side effects, but patients can still experience them. So pelvic organs-- what are we going to contour when patients come in and are anticipating getting treatment? So we're going to affect the bladder, we're going to affect the bowel, both small and large, the skin affects, reproductive organs, uterus, prostate, ovaries, and we're going to contour the bones. So we work on the contouring to make it look pretty. [LAUGHS] And then we send it to our dosimetrists, who are going to make it look even more fabulous.

So irritation of the bladder is going to cause some side effects of frequency of urination, some discomfort or pain when emptying the bladder, and definitely some urgency. Patients are going to have to run when they feel like they need to go. Getting up at night is going to disturb their sleep. And incontinence of urine or just trouble with emptying-- its slow flow, it's a weak stream, takes a long time, and/or just frank urinary retention, I can't empty my bladder at all.

So the first thing that I'm going to do when patients come to me and say, it hurts, is I'm going to encourage them to continue to drink. Because as soon as patients start to have some side effects-- I'm in the bathroom and I don't feel like I've got to go-- then they're going to stop drinking as much as they were drinking. So always encourage them to continue to drink their water and hydrate. Quick, easy test to do is urinalysis to rule out infections. Infections are so common, particularly because of anatomy and how close the urethra is, particularly in women, along with the risk for cross contamination. So you want to rule out an infection and treat it because that's the most important thing that you can do for a patient.

Then we can use medications. One of them is Pyridium. It's an analgesic for the bladder that's excreted in the urine. It's indicated for a short term usage, like one to three days. It can be helpful as an analgesic to decrease the pain. It's only indicated for just short term because you want to make sure that a patient doesn't have an underlying infection. If you completely ruled out an infection or if you're treating an infection, it's fine to add this medication to help your patient along. But you must tell your patients that this medication is going to turn their urine bright, bright orange. Because if you don't and when it happens, they will come to you shocked.

Another cause of pain within the bladder is some spasm of the prostate or of the bladder. And so anticholinergic medications, particularly ones like Ditropan, are selective to the bladder muscles themselves and can help to relax the prostate, and it can also help to relax the bladder. So you can use it for patients that are experiencing pain from spasms. Anticholinergic medications though do also have side effects. Some of the side effects can be dry mouth, can cause dry eyes, and it can cause some drowsiness and unsteadiness in your patients. So just be aware of that when you're educating patients when you're prescribing these sorts of medications.

For men and women complaining that it takes a long time to empty their bladder or their stream is weakened, there are medications that you can use to help to relax the muscles around the prostate. So medications like Flomax or alpha blockers can be used. These medications will lower a patient's blood pressure. So I typically dose these medications in the evenings. And let the patients know that if they have to stand up or get up at night to urinate, that they're going to want to stand up, get their bearings first before they go running off to the bathroom.

And then also talking to patients about lifestyle modifications. If some of our male patients haven't figured it out already, I do encourage them that they might have more success if they sit down to empty their bladder. The change in position oftentimes does help to just relax things and improve their urinary flow. So irritation of the small bowel is called enteritis. There are varying amounts of small bowel that are found within the pelvic field of radiation. Other organs, like a full bladder, can help to occupy some of the space in the bladder, or sometimes the uterus also helps to reduce the amount of small bowel within the field.

So enteritis does cause some painful cramping and diarrhea. So how are we going to deal with that? Well, first of all, let's quantify or clarify what exactly diarrhea is. So diarrhea, for clinical purposes, are loose, watery bowel movements that occur with a sense of urgency. I have a lot of patients that mistake frequent bowel movements, if they're soft or not formed, as diarrhea. So they'll come to me and say, I was up all night and I was in the bathroom 10 times. I say, was it watery? And they're like, well, no, it's just a little bit of stool or little piece of stool. It's not the number of times that you go to the bathroom, it's what actually falls into the toilet that is classified as diarrhea.

So patients that start complaining of diarrhea or frequent bowel movements, I ask them if they've stopped their stool softeners. Patients come to us oftentimes already on stool softeners. It's in their medication box. They're taking it every single day and just forget that they're taking it. So review their medications with them and stop your stool softeners. Talk to your patients about what they're eating. Diet is so important. Review what fiber is and where it occurs in your diet, and the types of fiber as well. Patients, after being diagnosed with cancer, will say, oh, I started eating healthy. I'm changing my life, trying to improve things. And they are drastically changing what they're eating, and sometimes what they've never eaten before is a source of their diarrhea or adding to the diarrhea that we know that we're going to cause from pelvic radiation.

So a good talk about what fiber is, where it occurs in their diet, and how they can limit it. Go over what a BRAT diet means-- bananas, white rice, applesauce, tea or toast. Avoiding spicy foods or gassy foods. We are rolling into fall, football weather. Patients will indulge on the weekends chicken wings and pizza and chili, and then come to me on Monday morning and tell me, I had a terrible weekend. We sit down, have the whole diet talk again, and talk about making choices about what they want to eat or not eat. And if they decide that that's really what they want to eat, then how are we going to deal with it?

Again, encourage your patients hydration. Patients want to be drinking about two to three liters of fluid or more to replace the GI losses that occur from diarrhea stools. I oftentimes recommend that patients use a water bottle or something that has the number of ounces marked on the outside of it, so that they can quantify how much fluid that they've been able to drink over the past 24 hours. Or if they're drinking from single use, disposable water bottles, I tell them, when you finish it, don't throw it into the recycle bin right away. Leave it out on your counters, so you know whether you drank four of them today or you only got two of them in today. So that they know that they can keep track of how much fluid that they're taking per day.

They'll want to start using some sort of antidiarrheal medication. At the onset of treatments, I recommend that all of my patients go to their pharmacy or their local store and pick up some Imodium. They're going to want it, they're going to be glad they have it when diarrhea strikes at 2:00 AM. Then you ask them to follow initially the instructions on the box. That would be one to two tablets at the onset of watery stools, and then one tablet every two hours if the watery stool continues. They can take up to a maximum of eight a day, even though the box tells them that they can only take four.

But if their symptoms are not well-controlled with up to eight tablets a day, then we can prescribe other medications. One of them that we use frequently to slow down the transit through the intestines is a medication called Lomotil. It's a combination of Atropine and another medication that's very chemically similar to opiate medications. And so it can help to just firm up that stool and decrease the transit time through the small intestine. So Lomotil is dosed to take one to two tablets every eight hours, with a maximum of six of them in 24 hours. And patients can flip flop back and forth, depending on how much diarrhea or cramping that they are having Lomotil and Imodium.

So if you started with Imodium and have now prescribed Lomotil, it doesn't mean that patients can't flip back and forth or use them interchangeably. Some patients need to receive IV hydration because they just haven't done a good job of managing their diarrhea at home or fell behind on their fluids. And so we need to assess for that and support the patients if they need that. And also, staying in contact and good communication with their medical oncologist. Because patients who are receiving concurrent chemotherapy sometimes need to have their chemotherapy doses adjusted because chemotherapy often is adding to the diarrhea or the irritability of the bowel that they may be experiencing. And so being in contact with our medical oncology colleagues is very important for us.

This was one of my patients. On the right-hand side of the screen, you can see what his pelvis looked like on the day of simulation planning session. And three weeks into his radiation treatments, he developed severe cramping and diarrhea requiring IV hydration. And it was refractive to the Imodium and Lomotil that we had been giving him. And so we got imaging on him, and we see inflammation along the small bowel now. This patient did require a break in bowel RAST and admission to the hospital. Unfortunately, we had to discontinue his treatment early because of the enteritis that was caused because of radiation and chemotherapy.

So the majority of the large bowel that's within the pelvic field is going to be the rectum. Irritation of the rectum is called proctitis, and it causes a lot of pain for patients, but also a feeling of tenesmus, which is the feeling of incomplete emptying. Patients will come to me and say, I just constantly feel like I have to move my bowels. And I go into the bathroom and I sit there and sit there and sit there, nothing happens. So the treatment of proctitis can sometimes be to add stool softeners. If you're not having diarrhea, if they come to you and just say, I feel like I have to go all the time, make sure that they're not constipated. Constipation can occur in these patients. So talking to them and adding a stool softener can help.

A sitz bath is a little thing that you can offer your patients that can help to relax the muscles of the pelvic floor. It's basically a bowl of water that they sit in. It can just help to decrease the pain and the sensitivity by relaxing those muscles. For patients that are complaining of mild to moderate pain, you may want to consider a steroid cream. They come with applicators. There's Proctofoam or Anusol that they would insert into the rectum itself to topically coat the irritated tissue and can help to reduce some of the itching and pain that they're experiencing. And if patients are more symptomatic with moderate to severe pain, you can consider oral steroid medications or a non-steroidal medication called Mesalamine, which is frequently used in the treatment of ulcerative colitis, or Crohn's colitis sometimes, to reduce the inflammation. It's medication that's similar to aspirin in that it's a non-steroidal medication.

For long term treatment of proctitis, you can consider sulcrafate suppositories or enemas. I will tell you that they're difficult to find because you have to get them from a compounding pharmacy, and oftentimes they require some prior authorization from insurances. So while it exists as a potential treatment, it's sometimes difficult to access. So taking care of a patient's skin is very important during this treatment. We know that some of the treatments that we do are going to cause skin irritation and inflammation. But skin irritation and inflammation is also going to occur in patients who are having diarrhea, if they're having incontinence from bladder irritation.

And so not just for our anals and our vulvars that we want to take good care of their skin. We want to talk to all of our patients about taking good care of their skin. It can help to prevent irritation from occurring. We want to protect their skin in these very sensitive and delicate areas and treat skin effects as they occur. There's a grading system for skin toxicities. Grade 1 is just your early erythema, looks like a little bit of a sunburn or some dry peeling. Grade 2 is the brighter red, maybe some moist peeling in the skin folds of the inguinal creases or along the gluteal crease.

Grade 3 is more confluent moist desquamation. That area is all starting to break down. And Grade 4, the ulceration of a patient's skin that we know sometimes has to occur or will occur because of the locations of their tumors. So I'm going to ask all my patients from the get go to start moisturizing their skin. It can help to just prevent some of the irritation from occurring. Patients will put lotion on their elbows and their arms and their legs, but I really remind them that they're going to need to go over the buttocks, over their pelvic area, areas that are often overlooked when people are putting on their lotions on a day to day basis.

They can use whatever non-artificially scented lotion that they prefer to use. There are lots of creams out there that are made specifically for radiation, like TriDerma or Myaderma. RadiaCare is an old one, or Genes Cream. And patients will search these out on the internet and come to me, can I use these creams? And if it's something new that they haven't used before, I would recommend that they start using it prior to the onset of radiation. Because if it is going to cause some contact irritation, you're going to want to know that ahead of time. Instead of, they started putting it on when their skin was red, and now you can't figure out if they're sensitive to the cream that they're using or is it truly from the treatments themselves.

Again, encourage patients to hydrate, hydrate, hydrate. Patients are going to tell you that they're sick of drinking water, or I don't like to drink water. And so some suggestions that we can give to patients are to get those little Crystal Light packages or those little Neodrops or anything that they can do to just put a little flavor in that water and help get it down, or put a slice of fruit in their water or fancy it up with some herbs and cucumber and that kind of stuff, anything to encourage them to continue to drink water. Moisturize from the outside, hydrate from the inside.

Talk to patients about reducing friction. Part of preventing skin irritation is to reduce friction. Talk to them about what kind of underwear that they plan on wearing or that they typically wear. They're going to want to choose light fabrics that are breathable. You're going to want to avoid your thong bikinis, anything that's going to rub and cause friction. Instead, encourage them to choose boxer shorts, or for women, go out and buy some boxer shorts or use your husband's boxer shorts or briefs, anything that's not going to rub in the skin folds.

If patients have to wear disposable underwear, if men and women are wearing incontinence pads or sanitary napkins, encourage them to change them as frequently as possible. That's just another layer of added irritation and friction. And so they're not going to want that rubbing against their skin, so encourage those to change often. And as far as wearing clothing or what they should wear during the day and when coming for treatments, I encourage them to wear light cotton pants, jogging pants. For women, they can wear Maxi skirts or nice flowing dresses. It makes it a whole lot easier for our therapists when they show up to treatment and they can just pop up on the table and pull their skirts up and set up for treatments.

They're going to want to avoid their jeggings or their tight fitting jeans because all that is going to do is just cause more friction and irritation. Also reminding caretakers and our patients, if they are spending a lot of time laying down, they're going to want to frequently change positions as well so that they don't develop pressure points on the back or on the sides. Keep turning over, get up out of their favorite chair of theirs so that they can just keep repositioning to avoid pressure points and further irritation of their skin.

Hygiene and taking good care of their skin. So cleaning up using non-irritating soaps and cleansers. When they're showering and bathing, they want to allow their skin to dry completely before getting dressed for the day. When they're cleaning up after using the toilet, they can use water instead of as much toilet paper that causes a lot of friction and irritation. So providing patients where they're able to get a sitz bath from their local pharmacies. Or oftentimes I just give it to patients and instruct them how to use it. I just have them fill up a nice pitcher of warm water, dump it in there. They can sit and it can help to soothe the skin and that irritated area and provide water for cleaning up.

I provide my patients with a Peri bottle which they can use like their own personal bidet I've had two patients in 16 years actually have a bidet that they found very, very helpful when they were undergoing pelvic radiation for cleaning up and helping to just deal with the skin sensitivity. A lot of patients will also ask about using wipes. And so I do recommend if they're going to use the disposable wipes, to get sensitive baby wipes, or they can find on Amazon-- because Amazon has everything-- something called RectiCare wipes, which are glycerin-based and also have a little bit of lidocaine or a pain reliever in it, which can be helpful.

In addition to moisturizing their skin, I recommend that they start using barrier creams, particularly in all of the skin folds. So in the vulva region, in the inguinal creases, around the scrotum. They're going to want to use some sort of barrier cream. You can get any of these creams in the baby aisle, but it's going to help to reduce friction for our patients and it's also going to create a nice barrier on their skin that helps to prevent any body fluids or urine or things like that from remaining in contact with their skin for long periods of time and further causing irritation of their skin. So encourage them to start using barrier creams to reduce the potential for irritation.

So as our patients start to develop irritation of their skin while the skin is still intact, if they're complaining of some discomfort, in addition to all of the things that they're already doing to take care of their skin-- they're keeping it clean and dry, they're moisturizing their skin-- they can also use a low to intermediate potency steroid cream to help reduce some of the discomfort and itching within the skin that they may be having. Or consider topical anesthetics, like a lidocaine gel, in the areas that are bothersome for them. Another problem for patients, particularly in the pannus folds or for larger patients are that they can just have a natural overgrowth of fungus within their skin. So early skin reactions and treatment oftentimes are not even due to the irritation from the radiation, but they'll have an overgrowth of fungus within the abdominal folds. So look for and treat those for your patients because you can make a huge difference in the quality of their skin throughout treatments.

As your skin irritation progresses to be areas that are starting to break down and where we see moist desquamation, again, I still encourage all of that initial skin care of keeping it clean. But now we're going to want our patients to dry their skin out a little more when they come out of the shower. We recommend that they spend some time open to air or use a light fan over the desquamated areas to really help to dry up some of that area before they get dressed or put any of their other skin care products on it. Within the inguinal or vaginal or vulva areas or perianal areas, also use medicated creams, like Silvadene. It has a little bit of an antibiotic property, so it can help to prevent infections in these areas. But also, it is effective in drying out the skin in those areas.

But Silvadene contains sulfa, and so a lot of our patients are sulfa sensitive. And for that reason, then we need to think about using other non-sulfa-based things. So there's Medihoney or Solosite. And if you're not familiar with these, contacting enterostomal nurses can also be very helpful. We have a great nursing staff within the hospital that we utilize to help meet with the patients and offer suggestions for how they can take care of their skin throughout these treatments.

And lastly, as we're treating their skin reactions and just irritation that they have from the side effects that we are causing with the pelvic radiation, we need to remember to treat their pain as well. And sometimes pain can be managed by water and sitz bath and that kind of stuff, and other times it's becoming more severe and it's starting to limit eating and drinking and limit what the patients can do. And so those are the times to consider if they can take a non-steroidal anti-inflammatory or an over-the-counter medication, like Aleve or Motrin or something like that, it can be helpful. As the pain becomes more severe, we can use medications.

An effective pain medication is Gabapentin. It's a anti-convulsant medication that is used frequently for neuropathic type pains. And the pain that patients are experiencing from their skin reactions and from proctitis and irritation of the bowel are because of irritation of the nerves within those organs. And so it's an effective pain medication for these patients and can be used alone or in combination with opiate pain medications. And then if all else fails, consider pain management for your patients. There's people out there that can help with managing their pain. And so feel free to call on other colleagues to help manage their pain.

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