

Surgery of the Liver, Pancreas, and Bile Ducts, AKA Tiger Country

Wed, Jul 12, 2023 5:16PM 50:38

N Narrator 00:01

You're listening to the Cancer Assist Podcast. Wherever you are in your experience, we are here to provide help and hope as you navigate cancer prevention, treatment and care hosted by Dr. Bill Evans and brought to you by the cancer Assistance Program. Help when you really need it.

D Dr. Bill Evans 00:17

Welcome to the cancer research show with Dr. Bill Evans. And today I'm going to interview Dr. Deepak Dath, who's a professor of surgery at McMaster University, and have had a biliary surgeon at Hamilton Health Sciences. And I think at St. Joe's healthcare, as well. Yes. Well, welcome to the program. And I think it'd be very interesting to our listeners to first of all understand what is a habito biliary surgeon?

D Dr. Deepak Dath 00:39

Thanks, Bill. So hepatic biliary surgery refers to surgery of the liver, the pancreas and the bile ducts that connect them. And I need the diseases that have to affect those.

D Dr. Bill Evans 00:49

And some of that's cancer. And that's what we're gonna focus on. But that's kind of what I when I was kind of doing a bit of surgery way, way, way back again, in the my past, as an intern resident, called Tiger country in the pancreas and biliary tree, there's a lot of important structures in that area. So it's a specialized area of surgery, it's not what general surgeons typically do. So maybe tell us a little bit about the training involved to get to the point where you wear that name of hepatic biliary surgeon?

D

Dr. Deepak Dath 01:20

Sure. So all the surgeons who do have it released or discharged after General surgeries, as general surgeon, sorry, and then go into what's called a fellowship where you do a focus your your training, and looking after surgeries with respect to the bile ducts, the liver and the pancreas. A good bit of that is cancer, as you mentioned, because that's kind of what we typically end up having to deal with that. But other things like sometimes simple things like stones in the bile duct etc. Very difficult issues with gall bladders and things that is what can sometimes be a problem too. But we focus on that so that we can pay attention to the specific diseases that happen there. And the special skills that we develop so that we can do that well.

D

Dr. Bill Evans 02:00

So it's a specialized area, and you've had advanced training and the right that many of you think there's only what three or four in the city. There are five, five now and and I've just shared my practice with a new surgeon called Dr. Dr. Yasmina saggi, who's joining my practice. And so now now there are six of us at the Durban ski Cancer Center. Well, it's quite a formidable team you now have and that's that's good to hear. And it's not just surgeons, but you're you have a team of medical and radiation oncologists and others who get together to discuss cases I think as well. Absolutely. So there, there are several key other players as well. So the medical oncologist helped us because we, we very commonly will use a combination of of medical oncology, as well as what we call surgical oncology. Sometimes radiation oncologists help us with that too, because there's certain particular cancers or cases where that's useful. But but just a specialized nursing on the wards to specialist nursing in the operating room, the equipment we have there, and so on is very important as well. And lastly, there are two other specialties we don't see very much one is radiologists. They're very important to us and us being able to identify things, interpret things really well decide, you know, what are the next steps to to to investigate things really well.

D

Dr. Deepak Dath 03:18

And also with the pathologist who look at these, because sometimes the decision about whether something is or isn't a cancer can be very nuanced. And we have specialized pathologists who help us with that as well.

D

Dr. Bill Evans 03:29

I think you get together for conferences on a regular basis to talk through the management of these patients.

D

Dr. Deepak Dath 03:35

Absolutely. So I tell my patients, when they come to see me, they come to see six surgeons, because they all will be able to be very frightening to hear. Well, the good thing is you get you get six heads instead of one. Exactly. And that discussion and the What about this? And what

about if you try this here instead, those kinds of things are what we tried to do to advantage the patient in terms of these difficult situations that sometimes come up,

D

Dr. Bill Evans 03:59

right? So why don't we talk about each of the major organs that you would operate on that might have cancer and maybe start with the liver. Maybe the average person doesn't know what the liver does so sure is a good place to start as explaining liver function. And then we can talk about the cancer cancers that are affected.

D

Dr. Deepak Dath 04:20

So the liver is this big organ that sits just under your diaphragm just under your chest. It's a top organ in the in the in the belly, more cross to the right side and the gallbladder hangs just underneath it. And the liver is what people generally termed as a factory of the body. So it makes a lot of the chemicals that your body uses to run it detoxifies things so when you eat something, if something were not that great, the liver helps detoxify it before it gets into your blood. Those are some of the big things that it does is synthesize it or mix things and the detoxifies as your cleans things. It's also very unique in that its position allows it to Do you know its position is crucial to how it does his work, it has to stay between where the bowels are. And then where the blood gets back to the to the, to the heart. And so blood flows through there before it gets anywhere else. And that that particular positioning can sometimes be a problem to you when you hear about things like cirrhosis. Cirrhosis makes the liver hard, the blood has a hard time going through. And so some patients who have cirrhosis of the liver, and I bring that up, because that's something that affects people with cancer too. But if you have cirrhosis of the liver, it sometimes can can can make things very difficult for us to work on the liver. But it's position gives gives it that that risk of having that problem.

D

Dr. Bill Evans 05:44

So like every organ in our body, it can develop cancer. And so there are liver cancers, or we call them hematomas or paracellular. cancers. But there's a spectrum of them. And there are things that are on the benign end and things that are on the malignant, maybe explain a little bit of that, and what actually are some of the risk factors for developing the cancers you might operate on? Sure.

D

Dr. Deepak Dath 06:11

So within deliver, there is the substance of the liver itself, plus the bile duct, which are the two we said take the ball into the bowel, you can think of those as two, almost almost like two separate organs in one organ. So let's put the bile ducts by themselves separately, that's what it's called. That's called collegial gardening. We'll just put that separately for now. And look at the stuff of the liver. And in this stuff on the liver, the kind of cancer that can come there would be called the hepatocellular cancer. So hepatocellular cancer is one that arises from that liver cell itself. And it's one of the most common cancers in a world actually, we don't see it as much in North America. But there are certainly areas around the world where it's what we call

endemic, it's, it's there, because there are lots of risk factors for people in those areas to have that kind of cancer. And it's one where we don't have tons of great things to do yet, but there's been lots of advances recently. So we find that that kind of cancer is something that grows in a liver where the cirrhosis happens, and the cirrhosis can happen from lots of things hepatitis, for one is the big thing. But there are other kinds of infections as well. And so in terms of hepatitis, we have Hepatitis B and C, those kinds of things, we now have medications for some of those things. So so we are we are treating people and minimizing some of those things that much better than we used to. And then there's alcohol which also causes some damage to the liver and can cause cirrhosis. And that's more common here because we have less of the viruses that cause it. But in general if the liver starts to get damaged with cirrhosis, that ongoing smoldering damage that happens with the virus or with the cirrhosis can lead the need certain places in the liver to become cancerous. And the problem with that is it can become cancerous in more than one place. When we do an operation or try to look after patients with that we first tried to make sure that their function is okay. The cirrhosis affects the function of the liver. And so we talked about people we work with so some of our gastroenterologist or hepatologist, who are gastroenterologist that specialize with the liver, they'd help us to maintain the patient's function to try to optimize things so that the livers working as well as possible. And then in that situation, we look at what the cancer is doing, where it is, what we can do to lead to take it out. The gold standard, or the best thing we know right now still is surgery. But there are lots of other things that are coming up. Some of those things are what we call ablative therapies where we bleed or destroy the tumor. We can do that in several ways. The most common ways to do that in Hamilton are to put something called a radio frequency probe. So it's a needle is a very specialized kind of radiosurgery to put it that way where the radiologists actually do the work. And they put the needle in using your fancy techniques of ultrasound and CT scans to know that to put the needle exactly where they need to. And then they can ablate or destroy the tumor by putting the tip of needle within the tumor and destroying it that really heat using a radiofrequency current, they can do something similar with a microwave. And those two those two techniques exists within within Hamilton right now. There are some other things coming down the road as well. So they can ablate things that way. They can do something called an embolization where they can target the exact artery going to that particular type of the cancer therapeutic place and it liver with the cancer is and they can shoot some chemotherapy into the liver in that area. And they can give a very high dose of Kemet chemotherapy to that one spot. And then the liver will kind of degrade the chemotherapy before it goes to the rest of the body. So it's not like you have lots of other side effects of the chemotherapy. So you Use a high dose and a very, very specific area to try to get rid of those kinds of cancers as well. And we have that here too, we can do that. It's called taste or trans arterial chemo embolization. Sometimes, if the chemotherapy part might be toxic, we can even just put what we call small beads are tiny bits of, you can think of it like dust, but dust in the artery and plug up those arteries, so that the artery leading to that tumor itself will not give the tumor enough blood supply, the tumor can die away. Some of these are curative, but they're helpful. And patients have done pretty well with those. And we've had some good results with that here in Hamilton as well. And then the last thing is, is chemotherapy. So sometimes, we have no choice but to say the only way to look after this is to give the patient a kind of chemotherapy, like more conventional chemotherapy in the veins and allow that to try to look after the the the tumor itself. So those are lots of ways to look after hepatocellular cancer.

D

Dr. Bill Evans 11:00

So the decision making is complicated and figuring out which patients can tolerate the surgery, versus those would be better candidates for ablation. And, you know, liver surgery wasn't

common when I was practicing, but better knowledge and better lobes and lobules. And the techniques of liver surgery have made that much more viable as an option. Even substantial amounts of the liver I surprising how much of the liver can be removed, and then it will regenerate itself. Correct.

D Dr. Deepak Dath 11:35

Correct. So we've gone from from not being able to operate on liver when I was in training, to being able to do you know, some pretty major operations to now being able to do those operations laparoscopically. So one of my one of my colleagues and I in Hamilton began doing laparoscopically breast surgery back in 2005.

D Dr. Bill Evans 11:55

And just for our listeners maybe just explain what laparoscopic surgery is.

D Dr. Deepak Dath 11:59

So laparoscopic surgery is where we use some tiny incisions, what we call keyhole surgery. So instead of making this large operation that's under the ribcage and across the midline to under the other side of the ribcage, we now make something that's as a small incision big enough to just about the size of my wrist actually. And with that, we can use some tiny instruments, the size of pencils, long skinny pencils. And those are the instruments we use to manipulate, deliver, and to then resect or remove that tumor from the rest of the liver, we take then we take that piece of that liver out through what's called a handpoured, or that one incision you make with one hand. And so instead of making an incision big enough for everyone to put their heads in and see, we make a tiny incision, just big enough for one hand to go in and use other tiny ports to be able to see and manipulate well enough to be able to manage the operation. So my patient right now and in the hospital right now, he's post op day three, and he's about to go home, and he's going to have a small incision in one corner. And he's been walking around and doing pretty well.

D Dr. Bill Evans 13:05

So there's a lot less trauma to the patient and that kind of surgery so that shortens the recovery time and speeds, departure from hospital all of which is good for them. And for the health system at the same time.

D Dr. Deepak Dath 13:18

You can imagine that if the operation included this, like 20 inch long incision, the liver, which we've just decimated, you're just taking a bit of it out, would have to look after regenerate itself plus look after this huge incision, and all the trauma from the incision. But now the incision is much smaller

D

Dr. Bill Evans 13:35

in terms of the liver regenerating itself is there anything you have to do in terms of support with parenteral nutrition or things of that nature, or just regular feedings has to recover on its own, it seems like such a big thing to remove, say half a liver and have it regenerate.

D

Dr. Deepak Dath 13:53

I like to think of liver as a magical organ. Because because we don't really do much we take a piece out. And because of the way the liver functions and the way it's set up in the blood, like I said, between the bowel and the liver, it receives its own kind of what we call growth factors from the bowel. So as we take a piece away, there's more growth factors for the rest of it. And so the rest of it says I've got all the growth factor myself now. So I'll just grow all I want, and it will grow up to almost the size of what it was before we took things out usually about 75% of the size it was.

D

Dr. Bill Evans 14:27

That's remarkable. So and what are the results like with liver surgery like when you do resections for a pedestal, you're assuming that you've selected them carefully and they're not big tumors and multiple lobes and so on what are the results like?

D

Dr. Deepak Dath 14:44

So it's it's variable, I guess, but But what we tried to do is to is to pick and choose that what we use for surgery versus radiofrequency ablation or embolization, etc. has to match with what what the patient's need. So In those patients where we choose surgery as the best option for them, they're usually somebody where we expect that the operation is curative. Right? So we're trying to see if we can cure the operation. And surgery is the best way to try to cure that. The good thing about hepatocellular cancer is that it grows in one area. And if you take that entire piece out, right, as long as it's a single, a single lesion, or a single spot, if you take that whole thing out, you're probably not going to get that recurring. Right. Now, we said that hepatocellular cancer is one that can regenerate in different, you can have different ones. So it's not the cancer may come back, but you may actually have a new cancer form because the other parts of the liver are still cirrhotic. They're still that cirrhosis, and they're causing an ongoing smoldering process that generates cancer. So that can happen to some patients do tend to end up getting another cancer some someplace else sometimes, but, but with surgery, we tend to be able to take that out and then watch people to see that things are okay. And it's not a one shot deal. So if we did that surgery on someone, and then several years later found that there was another cancer, we can still sometimes go back and do another surgery. But more than more than likely we will end up being able to do at least something like an ablation. And the other thing is that because we watch patients closely when they've had surgery, we continue following them afterwards. We pick up those other tumors if they're coming up when they're a small size. Yeah, and when we can do something about it.



Dr. Bill Evans 14:55

D Dr. Bill Evans 16:30

And are there any blood tests or particular imaging tests you use to follow the patient to pick up those lesions early,

D Dr. Deepak Dath 16:39

there are two things First of all, like I said, our gastroenterologist also work with us and they are the ones who follow patients who have hepatocellular cancer will have a risk of hepatocellular cancer. So somebody has cirrhosis sees the family doctor, that Cirrhosis is diagnosed, and a hepatologist or a gastroenterologist might follow the patient, make sure that they don't have funny blood vessels growing, make sure that they don't have worsening of the liver function, and genuinely watching to make sure that they don't end up having a tumor growing in liver. If they do find that then they send the patients to us. But they can confirm that with a blood test. Right. So it's called Alpha philia protein, which is a blood test as a marker for each for hepatocellular cancer, which is also called HCC, by the way hepatocellular cancer. So, so we can do that to make sure that we find those things and watch them and and use that that marker as a guide. When we do the operation, we can then follow up with it with the Alpha fetoprotein. Again, on a regular basis along with CAT scans, so that the patients who have done this operation on right now, every six months, I will follow up with a hepatocellular with a with a hepatic CT scan, or CAT scan, as well as the Alpha fetoprotein. And along with me, they hepatologists also false information to leverage doing well. So they end up having two doctors continuing to follow them after their operation.

D Dr. Bill Evans 18:06

Great. Well, I guess maybe we should clarify to anybody listening that we're talking about tumors that arise from the hepatic cells, but far more commonly, it's metastasis from cancers and other parts of the body that go to the liver. And sometimes there's a role for surgery for those metastatic deposits as well. Right?

D Dr. Deepak Dath 18:29

Yes. So metastasis is a two minutes left its original place and gone someplace else. And the common thing that we see, first of all, like you said, there's lots of things that can go to the liberal liberal ends up being because of its of its function and its place, it ends up being able to trap sometimes these metastases or these these unusual growths in different areas. So it will come from the lungs, or from the adrenal gland or from the breast or prostate or anywhere, you could end up in there. And there's certain kinds that more often than not, but the types commonly see in North America that end up there are the ones from the bowel, and bowel cancer. So colon cancer is one of the like, I think it's a fourth common most common thing right now. So we see more colon cancers, and we see liver cancers. And those colon cancers, if they do metastasize or spread, they tend to spread within the abdomen, and then within the abdomen, they tend to spread to the liver. So when I first began my training, again, just to see how things are going over the course of time, about 30 years ago, if we saw someone who had a metastasis or a spread from the bowel to the liver, we would try our best but we knew that our results were very, very poor to try to help those patients. We would expect that the chance of them having any long term survival was very poor and then, but now with surgery, we can

actually take out those tumors as well. Now those tumors can end up anywhere and sometimes they're more than one. Again, so. So again, the operation that we that we did just recently For one of the patients means that took out some of the liver on the left side, some another piece in the back, and another piece on the right side. So as you said earlier, we know about how the anatomy of the liver works and how we can go in and specifically take out what we call an anatomic section. And by doing so, we see with the rest of the liver properly, so that the piece we leave behind can function well. So he's having good function right now, because we left him with lots of the volume of the liver to manage. But we've taken out the metastases or the tumors in these three specific areas that our radiologists have helped us to find. And that's again, that's kind of that collaborative process. We talked about. The chemotherapy doctors with a medical oncologist have already prepared him by giving him chemotherapy for the operation, or radiologists. And I would have gone through and plan what we could do for the operation. We carry the operation through our nurses, no special helpers all through the hospital help to make sure he's well. And hopefully he goes home tomorrow, you know, with his family and doing okay.

D

Dr. Bill Evans 21:04

I guess again, thinking back in time, as you said, we wouldn't have operated on at a certain point. Then it was a small number of metastases surgeon said that they would take maybe up to three seems to me they've gotten even further now in terms of the number of metastases if they can remove them in their in anatomical areas and leave a sufficient amount of liver. So it's really quite a radical change in the I guess the aggressiveness but colon cancer can be in itself even though metastatic fairly indolent, so that it's worth respecting those those lesions to get good quality of life for the patient.

D

Dr. Deepak Dath 21:41

So we knew that if you have one tumor, and it's and let's say someone has a colon cancer, they have the tumor removed in the colon, they're doing okay, two or three years later, when they're getting followed up, they find that there's a spot in the liver, it probably was there to begin with microscopically, we didn't see it, it's just come up now, because it's kind of reactivated, let's say. And we know that if that scenario happens, then going and taking out that one specific tumor, if we can do that means that the patient has a pretty good chance of a good outcome. If we see somebody who has a colon cancer, and at the same time they have a whole bunch of other tumors in the liver, the prognosis for that patient is not as good, the chance of us being able to cure the patient is not that good is not as good as it would be. But there's no reason why we can't try and give that patient that opportunity if it's technically possible. And the technical possibility has a lot to do with first of all whether chemotherapy does help with them. So in patients who have who are chemo sensitive, they tend to do better. And in patients who have who have tumors within the liver, where we can design an operation, like I said for my patient recently, whether it's in one place where we take one piece out with all the cancers in it, or even if it's in several places where we specifically go and choose a resection or removal and different places, right three different places and live at the same time on Friday. If we can do that, and get rid of all the visible cancer, and that patient who has chemosensitive they also stand to have a good outcome.

D

Dr. Bill Evans 23:20

So it's quite an evolution in in approach to metastatic disease of liver. It's it's impressive, and it's producing better results for patients and it's great to hear. I think we'll take a brief break now and come back and then talk about the two other types of cancer that a hepatic biliary surgeon works with the Kalanchoe carcinoma or bile duct cancers and pancreatic cancer, so we'll be right back.

N

Narrator 23:44

We'd like to take a moment to thank our generous supporters and Family Fund and Benko creative studio who helped make the cancer assist podcast possible. The cancer Assistance Program is as busy as ever providing essential support to patients and their families. We remain committed to providing free services for patients in our community, including transportation and equipment loans, personal care and comfort items, parking and practical education. These services are made possible by the generosity of our donors through one time gifts, monthly donations, third party fundraising, corporate sponsorships and volunteer opportunities. Visit cancer.ces.ca to see how you can make a difference in the lives of cancer patients and their families.

D

Dr. Bill Evans 24:27

We're back with Dr. Das talking about hepatic biliary surgery for cancer and we talked about hepatoma or Patis out here cancer in the first section, we're going to talk about two other types of cancer that the hepatic biliary surgeon operates on. First ones that arise from the bile ducts or, or the gallbladder are called Kalonzo carcinomas. And then we'll touch on pancreatic cancer but I guess the Kalanchoe carcinomas are much rarer. Well, it's a pretty rare cancer to begin with and And then there are different types of them but either within the liver, in the bile ducts that are within the liver and those that are in the sort of the hilum, where they come out of the liver, and then the extra Patek biliary tree, and I guess the surgical approaches are dependent on location. And I guess their survival and benefits to the patient vary as well and the anatomical location. Tell us about that kind of surgery and how it's maybe evolved over time. Sure.

D

Dr. Deepak Dath 25:29

So Calandra carcinoma is one of the spectrum of diseases that happened within that hepatobiliary area we talked about. And there are lots of similarities, sometimes between those and the pancreatic cancer as to gallbladder cancers, and so on. And along with Qalandia, we tend to put together gallbladder catchers. So, gallbladder cancers are not that common. But but they can happen as well. And they come from the biliary tree, because the gallbladder basically is like a bed of the biliary tree. It's kind of a specialized place where we just store the bile. You can think of Calandra carcinoma as three different types. One is, it happens within the liver itself within those tiny tubes within the liver, and the bile ducts. I'm not sure if I mentioned this earlier, but the bile ducts are basically the collecting system within the liver that collects all the bile the liver makes and transfers it into ever bigger, ever bigger ducts, kind of like the small branches in a tree will will get whatever the the nutrients the leaves make and take it down to the root etc. The bile ducts take the bile, and bring them into bigger and bigger box

until it gets to the one central bile duct that goes from the liver down to the bowel. Now, the bile duct takes a shortcut through the pancreas as it gets to the bile, it has to that last 1/3 of the bar that goes through the pancreas itself, so we'll get to that in a second. But if we start off at the top, in the tiny tubes, a tiny ducts are the bollocks. Those are called the intrahepatic or the within the liver cancers of the collapse of the of the bothers the intrahepatic cholangiocarcinoma. And sometimes those that end up you know, Ken can grow very big because the liver is it's, it's a magical organ, things can happen within the liver, and it's a large organ, and nothing's really going on in terms of symptoms, until until it gets to the edge or the outside layer, where you might feel something because that's where the nerve endings are. But other than that the liver goes about his business. And if one area is being affected by a colonic carcinoma, the rest of its going about doing its factory work and doing it the decontamination work. And it doesn't really bother about that one spot. So you can have some other symptoms like you know, weight loss, or maybe fevers or feeling lousy, etc. Those kinds of things that kind of general, the general kind of symptoms that many cancers can do go into your garden, we can do that too. And sometimes that's how we find them. But more commonly, we end up finding them because somebody had something done to check for something else, we find a spot there. And it can look like any other kind of cancer, it could look like a bowel cancer, we have to figure out then whether it is some other kinds of cancer with that kind of cancer Colegio carcinoma. Sometimes that requires a biopsy. But then once we figure that's what it is, if it's just a Calandra carcinoma in an area of the liver, and the rest of liver is in good condition. And it's someplace where we can take that collateral carcinoma out, we go ahead and do that. Right. If the patient's fit for that operation, the patient should have that option, because that's the best thing to get them better. And then the survival of that is not bad if we can make sure that we can get all of it. So if we will, we will, what we hope to do in surgery is have what's called a negative margin, which means that where we come across the liver where we cut the liver and divide it into that cancer piece, a non cancer piece, that edge where we come through, can't have cancer at the edge, because microscopically, then it could be cancer on the good side. So we want to make sure that as far as we can manage, we take out the cancer with a kind of a rim of normal tissue because that throat tissue may have microscopic disease in it bigger and far enough to make sure that that doesn't happen. If that does happen, that's the best outcome for the patient. And then we watch again, like other cancers, we watch again to see how things are going and see if anything's going back and deal with it. If it does, then they're the central ones which are really hard. And they're hard because we said the liver is a big organ, and we said it's complicated has lots of things to do. So the bile duct comes out of the liver to go to the bowel, but along the bile duct right next to it are several other other structures. So the artery that leads in and the vein that these interleaver are right next to the bile duct. So if a Calandra carcinoma starts to form, it takes very little before it gets outside the bile duct and starts affecting the blood supply And most of the time, if the blood supply is affected, it might mean that we can't take that piece of liver because we can't, we can't sacrifice that blood supply from liver. So I think of it like, like the keyboard that's going to this microphone will have several wires in it, you have to collect your carcinoma is one is, is a tumor in one of the wires in this cable, then the other words within the cable can also be affected within that cable very easily. There's no space there, right. So the minute it grows outside the bile duct is touching something else. And that makes it hard for us to do surgery sometimes for patients. For the ones where we can do surgery there, it's usually a very large thing as well, because if it's if it comes to the, to the area where the bile duct splits into two, and that affects one of that well that one bile duct is is serving half the liver. So sometimes all the tumor itself may be very tiny, it's already affected all the support structure for half the liver. So those end up being bigger surgery sometimes. So we do try those and do those as best as we can. And

patients when they do have these kinds of problems. And we have some successes. But we're very, we don't have the same kinds of success in this kind of cancer as we do with hepatocellular cancer or with with bowel cancers and metastases, for instance.

D

Dr. Bill Evans 31:23

Just makes it impossible because of the proximity of these important example of vessels.

D

Dr. Deepak Dath 31:29

And other trouble is the gallbladder is the same way. So the gallbladder when the gallbladder has a tumor, gallbladder tumors tend to grow a bit faster than say liver cancers are in sometimes even pancreas cancers. And so they can because the gallbladder is right tucked up under the liver and in the same areas, this basically this cable going into the liver, it doesn't have to grow very big before it can get to a point where it ties our hands, we can't do something because the vital structures to the liver are already affected. So we try we do that. There's one caveat to that, which is sometimes a person will go in to have a typical gallbladder operation for gallstones. They've got symptoms, we diagnosis has got gallstone disease, we go in, when they take the tube when they take the gallbladder out, the pathologist who looks at all these specimens afterwards, anyhow, can sometimes find that there's a spot there, that's cancer. Sometimes, according to some fancy kind of algorithms we have or ways to look at what the best options are. Sometimes, we will say that, according to these particular factors, we should go back and do a bit more of an operation than just is all about operation, to try to get those negative margins we talked about, or to try to get beyond the cancer surgically. So sometimes those things happen. And we try our best to look after that too. But they are very difficult to do. You're in Tiger country. That's that's the type of country for sure.

D

Dr. Bill Evans 33:02

And I imagine that number of times that operating for gallstones, you find a small cancer that in the gallbladder is pretty rare. So that probably the collective experience of managing these things is challenging. In my reading for this podcast, I I came across a reference to surgeons doing liver transplantation for some of these and I guess in some sites have in some centers have maybe done it seems like a real heroic, maybe a Hail Mary kind of initiative to do a total liver transplant for either a pet of cellular cancer or Colegio carcinoma. What's the thinking and it Hamilton in Canada.

D

Dr. Deepak Dath 33:42

So in Hamilton, we don't have a liver transplant team because there's one in Toronto and one in London. So we're bracketed by good people who can do that already. And reproducing that, that that function here, it didn't seem to be a good idea at the time. So it hasn't happened yet. With respect to liver transplant, we typically will say the cure rate for hepatocellular cancer by taking it out is pretty good. If you do a liver transplant and take that out, that's also pretty good. But the chance of recurrence by doing a transplant is very, very, very low because you've taken out all the cirrhotic liver, right so the the remember we said that, that in called in

hepatocellular cancer, the liver cancer is that if you take that, that cancer out, you've done a pretty good job of trying to make sure that's not there anymore. And that's a pretty good, it's usually very good because it's not like the cancer spreads all over the place and tiny areas here and there. It's it's pretty good that if you do that operation, you're done. The other thing we know is that hepatocellular cancer doesn't commonly go to other areas of the body, it stays within the liver. And that's one of the reasons why we can do a transplant because if we can find that this tumor is within the liver itself and there's good evidence that there's nothing else anywhere else than if you were transplant, you're taking that whole cancer out. The problem with doing that with other cancers, like bowel catches, for instance, is that the bowel cancers, by definition, already have access to the rest of the body. So microscopically, there could be tumor here or there or whatever. If you find that there are metastases or tumors from the bow to the liver, and you decide that you want to take the liver out and transplant it, how do you know that there aren't others other areas that would that would kind of have a resurgence of the cancer after the transplant,

D

Dr. Bill Evans 35:37

and particularly when they're on immune immunosuppressive therapies, which may make it easier for the metastasis to spread. So, yeah, I was sort of surprised to see transplantation even listed as a possibility in some circumstances, but you've explained it well as to why it might benefit some patients with the paracellular cancer but highly selected patients, I'm actually talking about highly selected, I guess, the patients who are candidates for pancreatic surgery are also rather highly selected. Because the vast majority of them seem to present with more advanced disease, it's not readily resectable. But the best treatment for pancreatic cancer is a surgical treatment where it's possible. And again, it depends where the cancer is in, in the structure of the pancreas, whether it's in the so called head or body or tail, tell us a little bit more about the surgeon approaches.

D

Dr. Deepak Dath 36:33

So again, this has a lot to do with where the pancreas is, and this is, this is an organ that's tiny. So I tell my patients, it's about two fingers long, two fingers high and one finger thick, right. So if you want to kind of get an idea of what it looks like that's, that's the visual you can use. And then that organ, that tiny organ is very well protected, because it's very fragile. So it's sitting right in front of your backbone. The trouble is, of course, there are other things in front of backbone, like your major vessel going to the rest of your body, a lot of the nerves that go throughout the rest of the organs. And, and there are two major vessels. One of the vessels is that big vessel, we said it takes the liver delivers blood supply to it from the bowel. So the bowel drains all blood into the liver first. And that larger vein called the portal vein, and the superior mesenteric vein, those are the veins that go up to the liver, they run directly behind the pancreas. In fact, the pancreas is kind of half around them. There's another one called a superior mesenteric artery, and it takes the blood the fresh blood from your heart and gets it to the bowels we bout to live. So those two vessels are the ones where we typically find that if they're involved, it makes it more difficult. Now we have lots of ways to deal with the vein one, the the point of being of a superior mesenteric vein, there are lots that we can do now that we didn't do before. But there's very limited utility, or very limited usefulness, I guess, and even approaches to be able to look after the artery. Because that's where things get dicey. It turns out that the artery is also covered by a set of nerves that go down to the bowels, and help

serve the bowel. And so if you start dividing those things, or taking those things away with the artery to try to, you know, take a piece out and put it back together, you tend to end up having some complications from that, too, that might make the entire operation not that good. So we try to make sure that the operation is possible by first of all looking at whether the tumor is within the gland itself within the gland of the pancreas, or just around the pancreas a little bit. So it's not into these other nearby structures. That's where those multidisciplinary rounds are those key conferences, where we get the radiologists and the surgeons all looking at these reports pour over those very carefully, every single one and look at where the tumor is, how close is it to the artery? How close to the vein, how much of the vein might be involved, what could you potentially do if you had to take a piece of the vein out and put it back together or repair it. And then is there anything in anywhere else. So pancreatic cancer, as you said, starts off as a small tumor, it can grow in just a very small distance to get to other areas that we that will make us not be able to take it out like the vein in your artery. And it can start to spread to other areas like the liver, or like the other lymph nodes around the area. Without the patient knowing too much. The ones that grow in the tail tend to keep growing and get larger and larger and they will start to even spread before anything bad happens. It turns out the 10 of the pancreas isn't around anything that's very, very vital, or that will cause symptoms right away. So those can grow bigger without causing any symptoms at all. And by the time we find those either by accident or because the patient has symptoms, they might be already metastatic, they may have already sent off, you know, other tumors to others like livers, etc. So sometimes we don't catch those in time. The ones that are on the head side are the ones where in some patients, they're lucky because it goes right next to the bar that we sent about, like takes a shortcut through the middle of the pancreas. So if there's a tumor, think of the tumor like a marble, right next to a small to like a straw. As the marble gets bigger, it will push on the straw and squish the straw then deliver tried to do its work and get its bile out. They can't be because this child squished. So those patients get jaundice. And that's kind of how we find them. Sometimes the patients get jaundice. Well, if it's still the size of a marble, we can take that out. So sometimes it's it's lucky if you can use that word at all it can cancer is lucky that it grew in that one area where you get a color coded diagnosis comes in. And then we can have no right. So just yet, the other thing is also most people who get jaundice just so you know, for your listeners as well. Most people who can join this and don't have cancer, they usually have gallstones. Thank goodness, right. But for those who do have that color coded diagnosis, it allows us to then, you know, get the engine going really quickly, do the appropriate assessments, get that team together to check it out, and then plan things. The things that have changed more recently, though, Bill is that we are now seeing that there is better chemotherapy for pancreatic cancer than it ever used to be before. We're seeing some patients who have responses to chemotherapy that are phenomenal compared to when I started. And there are patients who have had tumors we thought were unresectable or removable, we give them chemotherapy, we know that the tumor shrinks. And when we go to take the tumor out, we find that the large areas of the tumor are what we call sterile, the tumor is completely gone. And there's a scar tissue there now, that allows us to think about the future of giving patients chemotherapy during an operation. And seeing that we've taken out the whole thing with negative margins, we talked about that negative margins being so important for us having having a good outcome was the chemotherapy, it's just a negative margins, even if it's not completely sterilized. It allows surgery in patients who would not have had surgery before, right, because we would have left them with positive. So we tend not to take patients who we look at having positive margins today. And some of them are what we call borderline now. So this is another term that your patients may hear patients and families is a borderline resectable tumor. And that's one where we think well, you know, it might be touching the vein, we can maybe optimize that by giving chemotherapy first and then go into surgery afterwards. Our team in Hamilton is very aggressive with doing what we call a multidisciplinary approach or a

multi pronged approach to looking at this with chemotherapy and surgery together rather than just surgery. And I don't know that the the literature, the things that are out there for patients to access are looking at this yet. But this is how we're foreseeing the future. And the improvement that we can bring to patients is this combined approach.

D

Dr. Bill Evans 43:17

That's encouraging to hear because unfortunately, pancreatic cancer has this terrible reputation doesn't matter. We all know of individuals who are diagnosed and three months later they've passed, which is sort of the average life expectancy after diagnosis. But if we increase the potential for operability, by what we call neoadjuvant, chemotherapy, or preoperative chemotherapy, that would be a huge step in the right direction. It was very interesting. This is like an anatomy lesson here today, that we're not doing visuals because it would certainly help for people to understand the complex anatomy in the upper abdomen. And where are these important arteries of superior mesenteric artery and celiac artery in the portal they were all these structures run in relation to the pancreas and so on. But I think your word images have been really, really helpful in that. If you had to think about maybe the top three things that have evolved over your career to change how a pedo biliary surgery is done, and what they be.

D

Dr. Deepak Dath 44:21

I think the number one thing is that we work more as a team in surgery and medical oncology and radiation oncology and nursing and radiology and pathology than we ever did before. And so that has made huge inroads in pancreatic surgery and liver surgery, like they have in other areas as well. Pancreatic cancer is hard. hepatocellular cancer is hard. And they're they're tough nuts to crack but people are doing it. And we're doing it by working together better. Right. So those case conferences, those things were every single week all the surgeons are there presenting the case. And, and you have an approach where it's not just one Maverick during the operation that we used to say back in the old days a Top Gun. It's not Top Gun surgery, it's, it's a combined process of saying we're all together on this. So much so that if I if I do my operation, so this patient, I do the operation on Friday, my colleague looked after him on the weekend, because I was, you know, I had just been in call for a while. So I took a break on the weekend, my colleague look after him on the weekend. And I knew that she will look after him the same way I did. Because we all work as a team. So those team approaches, things have really made a difference in multiple areas within the care we provide for our patients. To extend that analogy a little bit further nutrition, OT and PT, or occupational therapy, physiotherapy, and the preparation of patients are now talking about prehabilitation. So prehabilitation is something your, your listeners might hear about, it's where we try to optimize the patient before they come to surgery, and making sure they get appropriate nutrition by making sure they get appropriate amounts of exercise and some type of bulking up, we talked about bulking up, because they're what we call the reserve capacity for an operation resides not just in your weight, it's in your muscle weight. And so the more you can have good functioning tissue that your body can use as a reserve capacity for the operation, the better you do during the operation, and the better you get back when you feed afterwards. And that's important. So that first part of doing that the first part of of the of the three things you want. The first part is that collaboration. The second part is I think, the science of of medicine has gotten to be kind of at the cellular level. So as a surgeon, a lot of the things I do are structural.

And I'm limited by what I can do structurally because we said the pancreas is a tiny organ. But at the structural level at the cellular level, sorry. We have doctors who are figuring out the molecules that make a difference in these things. So the chemotherapy we have now is pretty much like design or chemotherapy, we have things that are very specific to a particular cancer, and are very toxic to the cancer but not as toxic to the patient. Right. So those things have made a big difference as well. And obviously, the third thing is just getting back to surgery is that I think we do better quality surgery now that we did before. We understand some of these things that have matured so that we can provide safer surgery. When we know again, to extend the analogy of the of the team, we know that that teamwork in the operating room makes a difference. Our anesthesiologist now work with us to say, if we're doing liver surgery, we keep the blood blood pressure in a certain area, because it prevents bleeding so much. And then we can control that and allow the patient to go to the operation safely. Or with less bleeding. Our nurses work together because we have complex pieces of equipment that we use for these operations, they can put them together for us as we need them to operate and operate them really well as we're doing our work. And that works really well. So those are the kinds of things we've we've looked at ways we do the surgery, how it works in Italy, or in South America, or in China or Japan are here. And we're sharing those, those little nuggets, so are we call pearls of wisdom about this is this works better than that, you know, and that works better than the other thing you know. And we're all sharing those things a lot better, and coming with better outcomes. And that's hard. It's it's a tough, it's always going to be tackling this structural aspect of this is not changing the cycle of change, we'll be talking about their anatomy isn't going to change. So it's always going to take a country. But within that tiger country environment, we're better doing the things we need to

D Dr. Bill Evans 48:51

do. I guess one of the things it's an extension of your comment on the first point of teams, because it used to be that you'd have individual surgeons in different communities, right, and sometimes in smaller hospitals, but with cancer care, Ontario's initiative, I don't know, a dozen years ago, perhaps, of consolidating so that there's larger groups, I'm impressed now that the hepatocellular group here and hepatic biliary surgical group here and Hamilton's grown to six surgeons, that's a formidable group, and then all the ancillary professional groups that are part of an overall team, because there's good evidence that the the creation of these teams leads to better outcomes and an improvement in overall mortality results. So it's good that the province did that some years ago, and I'm delighted to hear that Hamilton's got a formidable group of hepatic biliary surgeons that are available to the citizenry if if they need this kind of surgery. It's been great learning from you, Dr. Death. It's part of Anatomy Lesson has partly history of how things have evolved in this difficult areas surgery, but there's been a hopeful message to to in terms of some of the newer strategies that are bringing better outcomes for cancer patients to have these types of cancers. So thank you very much. My pleasure.

D Dr. Deepak Dath 50:17

Thank you know, thanks for having me.

N Narrator 50:19

Thank you for listening to the cancer assist podcast. Find more episodes, resources and

information at cancerassist.ca or follow the cancer assistance program on Facebook, Twitter, and Instagram. We'll see you next time.