

Melanie Cole, MS (Host): Welcome to the podcast series from the specialists at Penn Medicine. I'm Melanie Cole, and we're here today to gain insight into the Pancreatic Program Centers of Excellence objectives at Penn Medicine, patient care approach, and its role in improving outcomes for those with pancreatic disease.

I have a panel with Dr. Charles Vollmer, the Chief of the Division of Gastrointestinal Surgery and the Director of Pancreatic Surgery at Penn Medicine; and Dr. Nuzhat Ahmad, the Vice Chief in the Division of Gastroenterology, a Professor of Medicine and the Director of the Pancreas Program at Penn Medicine.

Doctors, thank you so much for joining us today. And Dr. Ahmad, I'd like to start with you. What does it mean to be a Center of Excellence in pancreatic disease? It's not something that every hospital or medical center can claim. When we think of pancreatic disease, Penn Medicine is a leading resource for pancreatic cancer care, but the Penn Medicine Centers of Excellence is for many non-malignant diseases as well.

Dr. Nuzhat Ahmad: Thanks, Melanie. So, having a Center of Excellence essentially means that you have a group of specialists who take care of a specific disease process with the goal of having the best possible outcomes for a patient. In essence, with relevance to pancreatitis or the pancreatic non-malignant pancreatic diseases, it means that we have a group of specialists, surgeons, gastroenterologists, radiologists, pathologists, cytologists, pain specialists, who come together in a group to take care of these very complicated and complex patients. And it's done in a sort of a formalized process where there are institutional protocols about how these patients are managed. There's a framework around how they access the system, and there's a platform where we all get together to discuss these patients, the more complex ones, obviously. So, I think, in a nutshell, that's really what it means.

Dr. Charles Vollmer: If I could add something to that, the general idea of the Center of Excellence has actually been designated to us through the National Pancreas Foundation. That group is one of the premier organizations for advocacy for patients with pancreatic diseases. And their thrust is pancreatitis more so than cancer. So, the process that we went through was through their very rigorous designation of what a Center of Excellence is all about. And the purpose of this was to give patients out in the community an understanding of the resources available to them for what is fairly an infrequent or rarish kind of disease process,

and what it would take to have that properly addressed. So, that's what this center of excellence really designates for us, is being deemed worthy of being excellent care in this field.

Host: Well, thank you both. And so, Dr. Ahmad, we mentioned pancreatitis and other diseases besides pancreatic cancer. So, tell us what that is. Tell us a little bit about it, the trends that you see with it, who it affects.

Dr. Nuzhat Ahmad: You know, there's a wide variety of non-malignant pancreatic diseases. The most common one that people come across in the community and elsewhere is acute pancreatitis, which is essentially acute inflammation of the pancreas. In the majority of the cases, these can be managed locally by local expertise. But there's a small number of these that actually are quite complex and can even be deadly. And that is where centers of excellence or people who have concentrated expertise come into play. So, this is severe acute pancreatitis, necrotizing pancreatitis, management of patients who end up developing end-organ damage from severe acute pancreatitis.

The other end of the spectrum is patients who have chronic pancreatitis, which is essentially a long-lasting and a long-term disease that needs to be managed on an ongoing basis, pretty much like diabetes, but with a very pathophysiological profile, if you will. It is actually incredibly complex and people who work on the science of it are still trying to unravel what pancreatitis actually means. And patients can come in all shapes, sizes, all different types of symptoms and with various manifestations that require different areas of expertise to manage them. And these can be resource-intensive patients.

Host: So, Dr. Ahmad, tell us a little bit about approaches to treatment.

So, you know, this is where specialized programs come in. So, one of the symptoms of chronic pancreatitis is chronic pain, which can be incredibly difficult to manage. The most common treatment that's offered to these patients is narcotics, and we really want to move away from that. And you do require specialized pain management to approach this. And so, we have that. We work with them. There's a huge nutrition issue with these patients. They can be malnourished, and they tend to fall behind the curve when managed by providers who don't have expertise in managing this. So, we work with nutritionists and dieticians to manage that.

And then, obviously, diabetes comes into play when people develop very severe chronic pancreatitis. And sometimes in very intractable cases, and this is a very

super-specialized approach to this, we offer a total pancreatectomy with an auto-islet transplant, which is essentially you take out the pancreas, distill the cells down, extract the islet cells, which produce insulin and glucagon, and insert them back into the patient. This is again offered at very few centers across the country and Penn offers that, but this is not something that should be approached in any center other than where there's a multidisciplinary approach to this.

Then, there are other diseases, which are less common like autoimmune pancreatitis. Again, sort of a vexing disease because it is complex to diagnose and can be very complex to manage. At Penn, we work very closely with rheumatology to manage these patients, because autoimmune pancreatitis can sometimes affect other organs in the body. It's just not limited to the pancreas, the different types of pancreatitis associated with autoimmune pancreatitis.

And now, we are seeing that there are newer medications that are being used in oncology, which are called checkpoint inhibitors. And with that use, we are seeing a specific type of autoimmune pancreatitis, which is called checkpoint inhibitor-induced pancreatitis, which can be very severe. And we are beginning to understand how that manifests and how we manage that. And it can be quite complex.

So again, I think autoimmune pancreatitis, specifically, can be difficult to manage without having the required expertise. Because even sometimes, honestly speaking, we struggle with some of these cases. And then, there are obviously other patients that we see sometimes with cystic fibrosis, idiopathic pancreatitis. There are patients who transition from pediatric clinics to us and we manage those as well. So, I think this in short is sort of a spectrum.

And there's another important caveat that there is a risk of pancreatic cancer sometimes tied in with pancreatic cysts that Chuck is going to talk about. With chronic pancreatitis, they are at a higher risk of pancreatic cancer and this can lead to a lot of angst amongst patients because we don't have adequate screening guidelines. We don't even know who will and who won't and why the science is still not there yet. But again, all these diseases need to be managed by people who do this for a living because they can be very complicated to unravel.

Host: Well, thank you. Dr. Vollmer, pancreatic cysts are relatively common and most are relatively benign. However, a subset of pancreatic cysts do require

surgical attention and the Penn Pancreatic Center of Excellence has become a magnet for these cases.

Dr. Charles Vollmer: Pancreatitis is a fascinating disease because it's common and it's rare, and it's abundant and infrequent in different ways. So, acute pancreatitis happens about 250,000 times a year in America. It can be something that is very bland and you get over real quick, or it can kill you within 48 hours. And there's even an intermediate zone of damage to the pancreas.

So, the most common causes of acute pancreatitis, about 95% of them can be split between gallstones and alcohol-induced cases. But it's the other 5% that can be about a hundred different things, including drug interactions, interventions on the pancreas, trauma, tumors and the likes. So, it's just having an understanding of that full breadth that's important.

Most of the patients will get over this quickly and have something to intervene with, particularly with gallstones, that they can put it past them forever. But a small group are going to be impacted with their inflammatory condition that then leads to a life of its own, of regeneration of the tissue and scar tissue deposition in the pancreas that then takes this to a chronic state. And that's rare, but very debilitating. And those are the kind of things that the specialized center hones in on more than the garden variety acute pancreatitis that happens in your emergency room every night.

Host: And Dr. Vollmer, can you speak a little bit about the physiology of these cysts and why some are concerning and how they're treated?

Dr. Charles Vollmer: Sure. This all came to light basically in the last 25 years, spurred on by the advent of ubiquitous axial imaging of the abdomen, so CAT scans, MRIs, and then ultrasounds also applied for any sort of ailment in the abdomen. With that ushered in the incidentaloma era, and with the scrutiny that the radiologists now give on their examinations, they describe anything that they see in the pancreas. So, often with that comes a caveat that says clinical correlation required. And that's where we come in as the clinicians who understand these things.

So, Nuzhat and I, when I came here about 12 years ago, we're perfectly timed together to invest in our mutual interest in these pancreatic cysts. And we developed one of the very first dedicated clinics in the country for cysts alone. We actually see about three to four times more people a year with pancreatic cysts than

we do pancreatic cancer here at Penn Medicine. So, it's a very prevalent kind of thing. About 15% of the population is thought to harbor cysts of the pancreas and it could be as much as 40% at age 70. And nowadays, we understand that the most common disease processes of these cysts are premalignancies, with the primary player being intraductal papillary mucinous neoplasia or IPMN.

What's interesting about this is it's a disease process that is marching along towards the development of pancreatic cancer, but at generally a slow rate such that most people are going to play out the clock on life before it actually goes to that bad place. However, we would say that about 2% or so or fewer could be subject to developing a pancreatic cancer within this cyst process in their lifetime.

And in some cases, some types of this IPMN, it could be as high as 50% in their lifetime. So, that's where we come in in terms of having an approach to diagnosing and then managing, whether it be immediate intervention, which is usually surgical to remove the problem or to surveil these people over time. We're having a lot of intrigue in our field about the nature of the surveillance, the length, the cost of such, so it's sort of shifting sands for us in terms of how we're evolving with that kind of stuff. But for the vast majority of these people, we will put them into a surveillance process, which is predicated on an MRI approach, generally on a yearly basis.

Host: Dr Ahmad, can you speak a little bit about the primary mission and overarching goal of the program?

Dr. Nuzhat Ahmad: Overall for pancreatic cysts, I think the two take home points from our multidisciplinary pancreas cyst program are that we have definitely become more conservative over the years. The pendulum has swung to that side. And secondly, it's extremely important in anybody who manages, and a lot of people manage pancreatic cysts, is that they speak the same language as their surgeons and their cytologists, very, very important. And I think that is what our learning was, if you would agree, Chuck, that we all learn to speak the same language about these patients, and that really helps guarantee the best possible outcomes.

Dr. Charles Vollmer: Yes, indeed. And in fact, the way we have this clinic is set up is that we review the cases of all patients with cysts as they come into us on every other week basis. We have a dedicated review conference and we take it from the new patient workups, the patients that have diagnostics such as endoscopic ultrasound and cytopathology. So, we invoke the aid of our

cytopathologists. We then review the surgical cases and we review their pathologies. So, we see if the before and after really helps us understand the nature of these things. And then, we have cohort of surveillance patients primarily. And then, the people who we've resected and taken to surgery who also we surveil thereafter. So, that's how we do it. We are all in the right place at the right time with each other and, basically, just talking through our own additive values and our different specialties with each other.

Host: Dr. Ahmad, we've touched on this a few times in this podcast. Can you expand a little bit more on the multidisciplinary approach used in the program to ensure comprehensive care for pancreatic patients of all types?

Dr. Nuzhat Ahmad: Yeah. So, I'll give you an example. So, for instance, if there is a patient with severe acute necrotizing pancreatitis with a necrotic collection or a large pseudocyst and is symptomatic and not doing that well, let's say the patient is admitted in a hospital and is sort of lingering but not getting to the point of recovery. That's where we would come in.

If the patient comes to us, what we do is typically I would see the patient first in the office. And then depending on what I think the management approach is, I typically pull in a surgeon and one of our interventional radiologists. And that's what really is multidisciplinary approach, that different disciplines look at the same patient and figure out which would be the best approach to manage this patient, number one. And number two, who would do it? That's very, very important.

Now, about, 15 years ago, the surgeons used to be at the forefront of managing these severely ill acute pancreatitis patients with necrosis. And over time, less is more has been the approach. Now, patients get a step-up approach. They're managed conservatively first, then we do endoscopic management if needed. Interventional radiology steps in with us to manage appropriate cases and surgery really becomes the last resort.

Having said that, managing these patients without having surgical backup is not recommended, because it truly requires all three heads together to figure out what would be the best approach. So, I think this is an example.

And then in patients who are not as acutely sick, for instance, patients who have chronic pancreatitis, and as I mentioned earlier, these can be very resource-intensive cases, patients are managed by a different group of specialties. They can be seen by a gastroenterologist. They may be seen based on what their profile is by

somebody in urology, for instance, to break up pancreatic duct stones, which may be causing symptoms. And that is an expertise that's not offered everywhere. It really needs to be offered in the context of a multidisciplinary program. And then, obviously, surgery again comes into play.

For patients who may have chronic pain, we work with our pain specialists who manage patients specifically with chronic pancreatitis with the explicit goal of not having them become narcotic-dependent. We obviously work with nutrition, because these patients can develop nutritional deficiencies, can develop osteopenia, vitamin deficiencies, and these need to be managed.

And then finally, these super select cases where we think auto-islet transplant might be a solution, then a different group of experts come in. And again, there's one large umbrella of these multidisciplinary programs. And, you know, we pull in different groups based on what the patient needs or will need. But the linchpin of these programs are the gastroenterologists and the surgeons.

Dr. Charles Vollmer: I tip my hat to the gastroenterologists. You know, the pancreas is very intimidating to most doctors. And even most general gastroenterologists don't get a good firm grounding in the pancreas. It's pathophysiologies, diseases. Many proceduralists don't really want to invest in these sorts of patients. So, what we have is what we call dedicated medical pancreatologists. I mean, Nuzhat, Sarah Coughlin, Galen Leung, these are doctors who have the skill sets for the technologies, the endoscopic processes, but also understand the diseases of the pancreas and to a much deeper extent than your common internist, even your general gastroenterologist. I think that's really what distinguishes us, is this expertise.

Host: Dr. Vollmer, Penn Medicine is home to the Penn Transplant Institute. Can you tell us a little bit about surgical options for pancreatitis?

Dr. Charles Vollmer: Sure. So as a surgeon, we look at a pancreas morphologically and try to determine what would be the best approach to managing the symptom problem from it, okay? So, we have drainage procedures which allow us to undo pressure or tension in the pancreatic duct system or the biliary ducts caused by scar tissue. And we have resection procedures, which sometimes are necessary to take out part of the pancreas that is sick generally with a lot of grisly scar tissue or calcification and the likes. So, those are the two things that I, as a pancreas surgical specialist, hone in on.

And then, we have the more rare situation of a pancreas that looks normal radiographically, but has the manifestations of pancreatitis, particularly with chronic pain. And it's a very rare situation. We call that small duct disease. And in that case, we consider the transplant option. That isn't your typical transplant of taking an organ out and putting it into another person.

What this is instead is basically removing the pancreas and giving back islet cells to the patient. Those are actually injected into the portal venous system and take up shop in the liver. And by doing that, it can prevent one of the longer term side effects of pancreatectomy, and that is diabetes. Patients will require enzymes to help with their digestion, but being able to maintain their physiology with the diabetes is a major coup for these types of patients. So again, it's a very niche kind of thing, but we have all the tools to do that here at Penn.

Host: Thank you so much, Dr. Vollmer. And Dr. Ahmad, last word to you. At what point would you like referring physicians to reach out to the Penn Pancreas Center of Excellence, the best way to do that? And I'd like you to just briefly talk about what you see as the future of this program. Any long-term goals for development that you really want to see happen.

Dr. Nuzhat Ahmad: So, I think the patients who should come to us are if you have a really sick patient, you should send the patient to us. If you hit a roadblock with management of patients of pancreatitis of any kind, you should send them to us. Patients can access the center through calling Penn Medicine and asking for the Pancreas Program.

The future, what we would like to see in the future is really a hub and spoke model where, you know, all complex diseases are managed by the Pancreas Center at Penn Medicine, at least regionally. And obviously, we want to really grow the research arm of our program as well and do more collaborative research with other centers of excellence across the country.

Host: Thank you both so much. Really an educational and informative episode. Thank you again for joining us. And to refer your patient to Dr. Vollmer and Dr. Ahmad at Penn Medicine, please call our 24/7 provider-only line at 877-937-PENN or you can submit your referral via our secure online referral form by visiting our website at [penmedicine.org/refer-your-patient](https://www.pennmedicine.org/refer-your-patient). That concludes this episode from the specialists at Penn Medicine. I'm Melanie Cole. Thank you so much for joining us today.