Stephanie Chisolm:

So, Ken, you've got your microphone on, so why don't you start, and then Melanie will share her story.

Ken:

Great, thank you. So, first of all, I just want to start out by thanking Stephanie and BCAN and all the folks there. They've been an incredible resource for me as I've gone through and looking for providers, looking for information, and also thank you to all the providers and including Dr. Sonpavde, who I've worked with when we both were in Boston, but it's really a group effort. The treatment of bladder cancer is not just one oncologist and one patient. So, I was diagnosed with bladder cancer eight years ago when I was 52, which was the same age that my father was diagnosed with pancreatic cancer, and he died soon after that. A few weeks after I was diagnosed, I saw a posting on Facebook actually from a second cousin whose sister had recently died of ovarian cancer. And she was educating people that, oh, we've got this rare variant of BRCA in our family.

And so I wasn't surprised because of my father's history. His mother also died of pancreatic cancer, his sister died of breast cancer, and several other family members, including a great aunt who had bladder cancer. And one of the things she explained at the time was that having a BRCA mutation can sometimes impact treatment. And so I was optimistic at the time. I had non-muscle invasive early stage bladder cancer, not a big deal. So, I put that at the side and I thought I'll deal with that if I ever have to. Well, three months later, I had to deal with it. My bladder cancer came back very rapidly and it spread throughout my body. I knew that because of course the normal symptoms of bladder cancer. I was peeing blood. But my back started being extremely painful.

And so the bladder cancer had spread to my bones, one spot particularly, which was in the spine. And so I went from stage one to stage four relatively quickly, never having gone through the muscle invasive stage and all the discussions that come with that. And so when I started seeing an oncologist, Dr. Sonpavde at Dana-Farber at the time, I raised the whole issue at that point of like, "Hey, I had this thing in my family." And so he ordered a genetic test.

I actually met with the genetic counselor when I was getting chemo. I think was actually my first treatment. And when the test came back positive that I had a BRCA1 mutation, I wasn't surprised. The amazing thing was, a few treatments later, the pain in my back started to ease. At that time I actually was scheduled for a second opinion with Dr. Rosenberg at Memorial Sloan Kettering, and I explained that my pain had been going away, and he let me know at that time that, well, the odds of platinum chemo working is actually a little higher for those who have a BRCA mutation. So, I was exuberant with

joy hearing this. I went from thinking, oh, I'm going through treatment. It'll extend my life a few months, hopefully a few years, all of a sudden thinking like, wow, I might actually get beyond this, which may have been over optimistic, but his words helped get me into that mindset, which was a big deal. It helped me get through treatment. The cancer did return a few times. I've had lung and brain surgery to remove those tumors, as well as additional radiation, but the last treatment I had was five years ago. And since then, I've had no evidence of disease, so I am extremely fortunate. But my own health is only half of my story. Knowing that I was BRCA positive, I restarted reaching out to family members. Turns out that both of my brothers are also BRCA positive, and so is my niece, one of my brother's daughters who happens to be my goddaughter. And she's been able to take some prophylactic steps since then to reduce her risks. But what I find the most exciting part of this story is two weeks ago, we went to my grand niece, my niece's daughter, her first birthday party.

And both her and her brother were conceived through pre-screened IVF, assuring that we're not passing the BRCA mutation onto the next generation of our family. So, I'm not only healthy at this point, knock on wood, will stay that way, but knowing the information and sharing it with family has led to us reducing the risk of cancer for future generations.

Stephanie Chisolm:

Thank you Ken, and that was such a positive story at the end. I think that's wonderful. So Melanie, I know a little bit about genetics. You also have a story.

Melanie:

So, I was diagnosed with muscle invasive bladder cancer about three years ago, and I was 67 at the time, and I was immediately identified to have a T3, so pretty deep muscle invasive form. And so I was treated to the works. I had chemotherapy, so neoadjuvant chemotherapy, and then I had a radical cystectomy. And a year, it turned out of immunology or immunotherapy because of a study. I was given pembro every three weeks. So, so far over these last three years, my scans have been okay and I felt fine, but I think like many of us, I was pretty flummoxed by finding out I had bladder cancer. Somehow you have in your mind that if it's not in your family, you're not going to get it. Your mom is 99, so you'll be 99 someday, and then you get a little surprised. But I was particularly interested for two reasons, and one was that I have a really large family and many of them are having children.

And then also that I am a genetic counselor. So, I worked in genetics for 30 years and I worked in a molecular lab, so my curiosity has always been out there. I know that genes always play a role in disease. That's all I'm going to say. Everything is genetic. So, I spoke to my oncologist about possibly having genetic testing. Even though I had a negative family history, I had done some exploring myself in the medical literature and found that there were people who have germline variants detected even though they don't have a family history of bladder cancer or other cancers. And I just felt like I would be personally reassured if I could have that test done. My oncologist really felt that it was not necessary. He says, "Genetics, it just doesn't play a very big role in bladder cancer, and they're so busy there that I hate to refer you, given this situation."

And so I referred myself, mostly because I'm a genetic counselor. And I contacted Dr. Dubard-Gault, who's at my medical center in Seattle, and she explored my family history and decided maybe it made sense to do a smaller panel of genes through Invitae, which is one of the labs that does a fair bit of cancer testing. And I think they looked at 30-plus genes. And at that point, they didn't find a variant, and I was reassured. But then about three months later, my niece went in for preparation for in vitro fertilization and was required to have some genetic testing done. So, she had a list of things she could choose, and she chose comprehensive genetic testing, 300 genes. And she had a number of genes that

came back with some kind of a rare variant, but one of them was a cancer causing gene or a cancer related gene called ATM.

By itself, it can cause a disease called ataxia-telangiectasia. But over the years, they've figured out that the people who are carriers seem to have more cancer. So, she told her mom, that's my sister, and she told me, and the two of us got tested. I went back to see genetics again, and it was confirmed that I had the same ATM variant. It's a missense variant in that gene, and it's not reported a lot in the literature, but other kinds of mutations in that gene are definitely associated with cancer. So, did this variant actually caused my bladder cancer? And the answer is probably, possibly. It possibly plays a triggering role of some kind.

What I learned though was that the variant that was found in that gene really increases my risk for other kinds of cancer, which wasn't exactly what I was trying to hunt down when I had this done. I wanted reassurance, but it's not an easy thing to hear, I would say, when you get a result like that. You're following your calendar and realizing that with each year, your risk for bladder cancer returning is reducing a little, you're relaxing a little, and your anxiety goes down. Now, you have to consider other kinds of cancer. Genetics referred me to a high risk cancer clinic where they could sort of spell out specifically what cancers I might be at risk for and what those numbers will be. And the greatest one seems to be pancreatic cancer, and they'll help me monitor that. I'll go back to see them every once in a while.

But I think finding this out from my perspective, I still feel like it's valuable, even though it was a little scary. The risk of other cancers isn't huge in my mind, but it's there. And I maybe could have saved somebody's life by alerting my family to this risk. So, I have shared this information with my adult relatives, and they're making decisions about whether or not to have testing. My 99-year-old mom, who's doing well, was tested, and she has it too, but obviously, a lot of people have it, but it's penetrance is low, so it could certainly be a factor in our family. And I guess the one thing I think about from having this genetic counseling perspective, but also the patient, is that we could do a better job of helping our urologists and our oncologists recognize who they might want to refer. And he's right, I'm not that patient, probably.

Refer your young patients. It's so tough to see young women with little babies that are diagnosed with muscle-invasive bladder cancer. If we could find them because of their family history, it would be awesome.