UNDERSTANDING CYSTOSCOPY AND TURBT
With Drs. Ken Nepple and Jeffrey Montgomery

BCAN
Bladder Cancer Advocacy Network

Meet Our Presenters:

Dr. Jeffrey Montgomery: Dr. Montgomery's clinical interests include the diagnosis and treatment of all urologic malignancies including prostate kidney, bladder, penile, and testicular cancers. With his advanced training in urologic oncology and minimally invasive surgical techniques, he's able to deliver state-of-the-art care to his patients. Dr. Montgomery's primary research interests include cost-effectiveness and health-related quality of life analysis, as well as novel applications of minimally invasive surgical techniques in the field of urologic oncology.

Dr. Ken Nepple: Dr. Nepple is a urologic surgeon at the University of Iowa. He's also a native Iowan and completed his medical school and urology residency at Iowa. From 2010 to 2012, he completed his urologic oncology fellowship at Washington University in St. Louis. In 2011, he was a John Quale Travel fellow and attended his first BCAN think-tank meeting. He returned to Iowa after fellowship and has been in practice at Iowa for eight years. Dr. Nepple has clinical and research interests are in optimizing cancer outcomes including the use of electronic health records.For the University of Iowa Healthcare, Dr. Nepple has supported roles as associate chief medical information officer, clinical documentation improvement advisor, and physician value officer.

Dr. Montgomery:

Great. Thank you so much Morgan. That's a very kind introduction and it's really my great pleasure to be here to talk with the good folks of BCAN regarding the TURBT procedure often known as TURBit. This is something that is a procedure that every bladder cancer patient experiences at some point, and I just like to add that BCAN is an organization that's very dear to my heart and is I think one of the best cancer support groups that I had the pleasure of working with. I'm really happy and fortunate to be here today. We'll start with a brief bladder cancer overview.
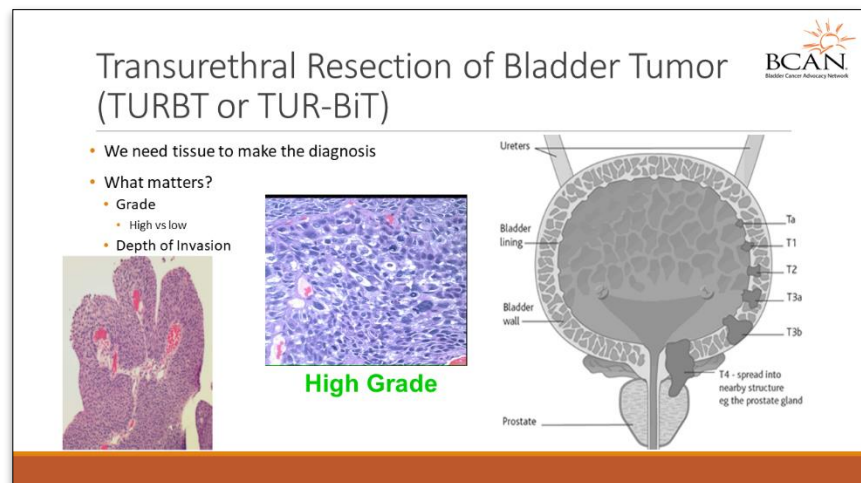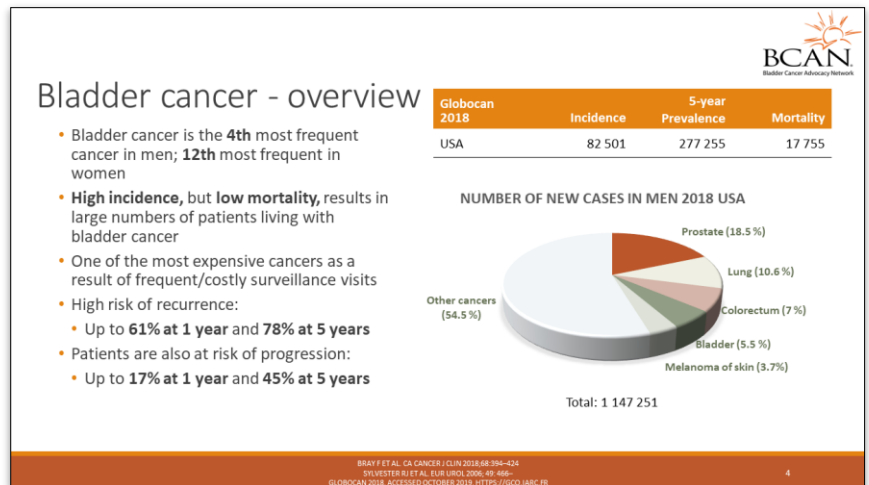
Dr. Montgomery:

Bladder cancer is the fourth most frequent cancer in men and 12th most frequent in women. It has a high incidence, but overall a low mortality, and that means that there ends up being a lot of patients that are living with a bladder cancer diagnosis. With that, because of the surveillance methods we use such as cystoscopy and CT scans, it is also one of the most expensive cancers in surveillance. Bladder cancer once it is treated has a high risk of recurrence, up to 61% at one year and 78% at five years. This ongoing surveillance is a crucial component of a patient's treatment pathway. Patients are also at risk of progression.

Meaning, the cancer going from one stage to the next or most more advanced stage, up to 17% at one year and 45% at five years. As Morgan mentioned, the incidence in the United States is approximately 82,000, but the prevalence is 277,000. Meaning, again that there's a lot of patients that are living with the diagnosis of bladder cancer.

I'm going to focus on the transurethral resection of bladder tumor, TURBT or as it's often called the TURBit. Why do you need to have this procedure? Well, the important thing here is that we need tissue to make the diagnosis. The tissue that's removed during the procedure is looked under a microscope by the pathologist and then the pathologist give us the diagnosis.

Now the vast majority of bladder tumors are what we term bladder cancer also known as your urothelial cancers, but the things that were additionally interested in is the tumor grade. Meaning, how abnormal the cells look. The grade can either be high grade, which means that these cells are very disorganized. They can tell that they're urothelial cells, but they really look like they've lost their way versus low-grade where they look more like classic urothelial cells, but it still is by definition a cancer. High grade cancers tend to behave more aggressively than low-grade cancers. This is an example of a high grade cancer and this is what a bladder tumor looks like on a low power microscope.
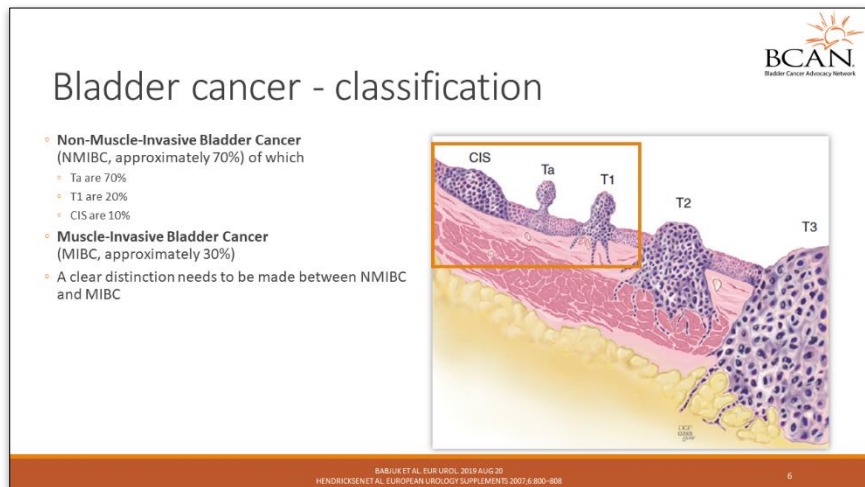
Dr. Montgomery:

I also mentioned that we're interested in the depth of invasion. The pathologists are able to tell us how deeply this tumor invades. Superficial tumors like TA or even carcinoma in situ, which is right on the surface of the bladder versus more invasive types of bladder cancer. T1 that starts to invade into the lamina propria, T2 into the muscle of the bladder, and T3 into the surrounding fat of the

bladder. Here we see T4 cancer which is direct invasion into the prostate. We can also get an idea of depth of invasion during the TURBT procedure with an examination under anesthesia. That's essentially the surgeon palpating the bladder through the abdominal wall.

Next slide please. Again, on the bladder cancer classification, a very important distinction is non-muscle invasive bladder cancer versus muscle invasive bladder cancer. As you can see, the majority of bladder cancers that we diagnose are non-muscle invasive bladder cancers, that includes Ta, T1 and carcinoma in situ. These types of bladder cancer are amenable to intravesical treatments or treatments with medications within the bladder in order to halt their recurrence. Muscle invasive bladder cancers are treated more aggressively, generally with consideration of neoadjuvant chemotherapy or chemotherapy before treatment, and then classically cystectomy or bladder removal surgery or radiation therapy. This distinction between non-muscle invasive and muscle invasive bladder cancer is crucial.