Understanding **Bladder Cancer**

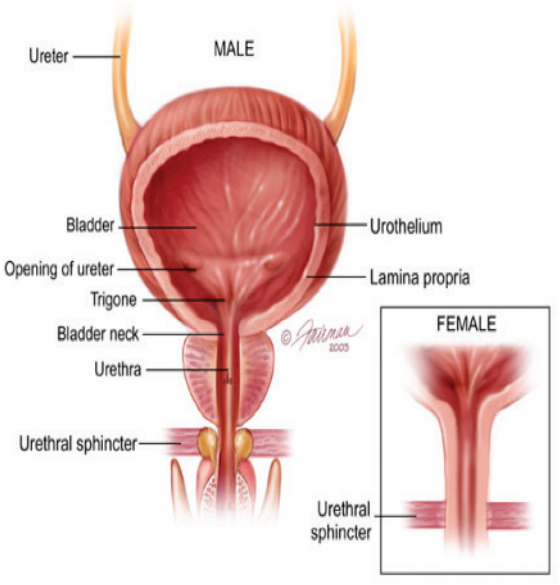
Erlanger Urology

About the Bladder

The bladder is a hollow, round-shaped, muscular organ that stores urine.

The urine is made in the kidneys and flows through tube-like structures called ureters that connect to the bladder. The urine then passes through the urethra during the process of urination. The bladder muscle assists in the urination process by contracting (squeezing) to help remove the urine out of the bladder.

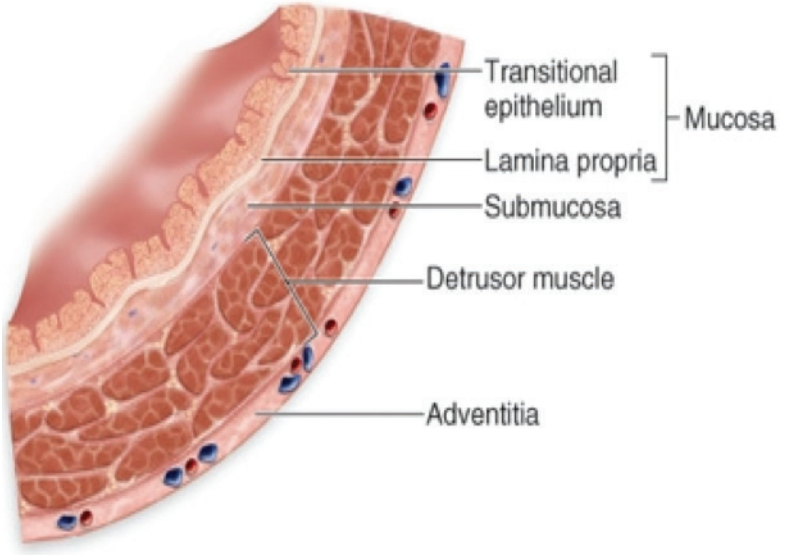
In women the urethra is very short. In men the urethra is longer and passes through the prostate gland to the tip of the penis.



The Urinary System

The wall of the bladder is made of layers. A thin surface layer called the urothelium lines the inside of the bladder. Next is a layer of loose connective tissue called the lamina propria. Covering the lamina propria is the bladder muscle. Outside of the bladder is a layer of fat.

The wall of the bladder is made of layers. Cancer begins in the lining layer and grows into the bladder wall. As the cancer grows through the layers into the wall of the bladder, it becomes harder to treat. The inside of the bladder is lined with a layer of cells called urothelial cells. The same type of cells also line the kidneys, the ureters (tubes connecting the kidneys to the bladder), and the urethra. Cancer can start in the lining cells in any of these parts of the urinary system.



Incidence of Bladder Cancer

Bladder cancer is the second most common cancer of the genitourinary tract. It accounts for 7% of new cancer cases in men and 2% of new cancer cases in women. The incidence is higher in Caucasians than in African Americans. The average age at diagnosis is 65 years. At that time, approximately 75% of bladder cancers are localized to the bladder, 25% have spread to regional lymph nodes or distant areas.

Risk Factors for Developing Bladder Cancer:

- **Cigarette Smoking**
  Accounts for 50% of cases in men and 31% in women. Smokers have a twofold-increased risk of bladder cancer than non-smokers.
- **Occupational Exposure**
  Accounts for 15-30% of cases in men and 6% in women. Exposure to certain chemicals and dyes such as petrochemical benzidine, betanaphthylamine and 4-aminobiphenyl.
- **Previous Treatment with Cytoxan (cyclophosphamide, a chemotherapy agent)**
- **Previous Pelvic Irradiation**

Types of Bladder Cancer

Bladder tumors are grouped by the way the cancer cells look under a microscope. The type of bladder cancer you have can affect your treatment options because different types respond to different treatments.

Transitional Cell Carcinoma

Transitional cell carcinoma is by far the most common type of bladder cancer. Transitional cell carinoma is also called urothelial carcinoma. It starts in the cells that line the bladder called the urothelial cells. Within this group there are subtypes. They are named based on the shape of the cells and whether they tend to spread and invade other organs. If they are likely to grow deeper into the bladder wall they are called invasive, if not, they are non-invasive.

These tumors are divided into grades based on how the cells look under the microscope. If the cells look more like normal cells, the cancer is called a low-grade cancer. When the cells look very different from normal, the cancer is high-grade. Lower-grade cancers tend to grow slower and have a better outcome than higher-grade cancers.

Non-Transitional Cell Carcinoma

- Squamous cell carcinoma is much less common and is usually invasive. Squamous cell carcinoma accounts for between 5% and 10% of all bladder cancers in the United States and is often associated with a history of chronic infection, bladder stones, or chronic catheter use.
- Adenocarcinoma is also much less common and accounts for less than 2% of all bladder cancers. This type of bladder cancer is often localized at the time of diagnosis, but muscle invasion is usually present.
- Small cell carcinoma is rare and aggressive. A very small number of bladder cancers are of this type.
- Mixed carcinoma are composed of a combination of carcinomas and account for 4–6%.

Symptoms of Bladder Cancer

The most common symptom of bladder cancer is blood in the urine.
Blood in the urine (hematuria) is the presenting symptom in 85–90% of patients with bladder cancer. Hematuria is usually described as painless. It may be visibly evident in the urine (gross hematuria) or may be detected during examination of your urine via a microscope (microscopic hematuria). Hematuria may be intermittent or constant. The presence of hematuria does not indicate or confirm the presence of bladder cancer as there are many other possible causes of hematuria.

Other symptoms may include: bladder irritability, frequent urination, urinary urgency, and/or painful urination (dysuria).

Symptoms of advanced disease include: back (flank) pain or bone pain from bone metastases (spreading of cancer).

How is Bladder Cancer Diagnosed?

History and Physical Exam

Evaluation for bladder cancer begins with a thorough medical history and physical examination. As part of this process, your doctor will ask you about any previous exposures to bladder cancer causing agents; such as a history of or current use of cigarette smoking (even exposure to second-hand cigarette smoking), previous exposure to chemicals.

Routine Lab Testing

Includes urinalysis, and routine blood work.

Urine Cytology

Urine cytology or other urine tumor markers (as indicated by your urologist. Cancer cells may be found in the urine.

Radiological Imaging

As indicated by your doctor, may include a CT scan or MRI of the abdomen and pelvis, a CT urogram (specifically looks at the urinary system), and a bone scan.

Cystoscopy and Biopsy

Although bladder cancers may be detected by various imaging techniques, their presence is confirmed by cystoscopy and biopsy. Cystoscopy is a procedure that allows direct visualization inside the bladder and allows the doctor to examine the bladder closely for signs of cancer. Bladder biopsies may also be performed at the time of cystoscopy.

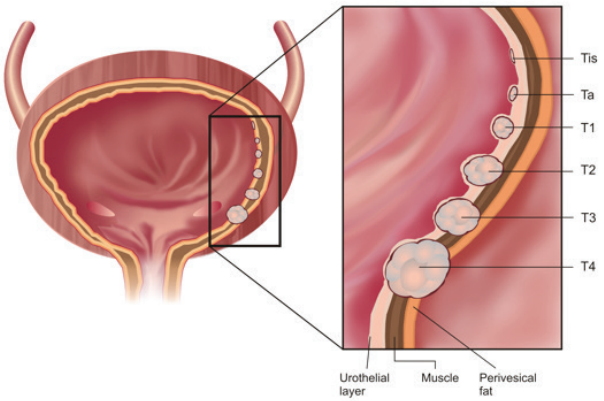
Grading and Staging Bladder Cancer

Grade

Grading determines the differentiation the cells from well differentiated to poorly differentiated tissue. The grading system ranges from 1 to 4. The grading system allows for an estimate of the rate of cancer growth.

Stage

The staging system allows for a precise and simultaneous description of the primary tumor stage (T stage), the status of lymph nodes (N stage), and metastatic sites (M stage). Staging specifies the degree the cancer has spread and identifies if other body structures or organs have been affected.



T Stage:

T0	no evidence of primary tumor
T1	cancer cells invade the lining of the bladder
T2	cancer cells invade the muscle of the bladder
T3	cancer cells have spread to tissues around the bladder
T4	cancer has spread into the abdomen and may have spread to the lymph nodes and other organs

N-Stage:

N0	no regional lymph node metastasis
N1	single regional lymph node metastasis
N2	multiple regional lymph node metastasis
N3	Lymph node metastasis to the common iliac lymph nodes

M-Stage:

M0	no distant metastasis
M1	distant metastasis

Treatment Options

Noninvasive Bladder Cancer Treatments

Noninvasive bladder cancers are confined to the lining of the bladder. Treatment for these types of bladder cancers can be treated with minimally invasive surgical procedures such as:

Transurethral Resection (TUR)

- TUR is the initial form of treatment for bladder cancer
- Allows for accurate estimate of tumor stage and grade and the need for additional treatment. i.e., intravesical or chemotherapy.

Selective intravesical (inside the bladder) chemotherapy or immunotherapy are agents that can be instilled into the bladder directly via a catheter.

Invasive Bladder Cancer Treatments

When cancer has invaded into the bladder muscle wall or beyond it is considered invasive. The most common surgical treatment for invasive bladder cancer is cystectomy (removal of the bladder).

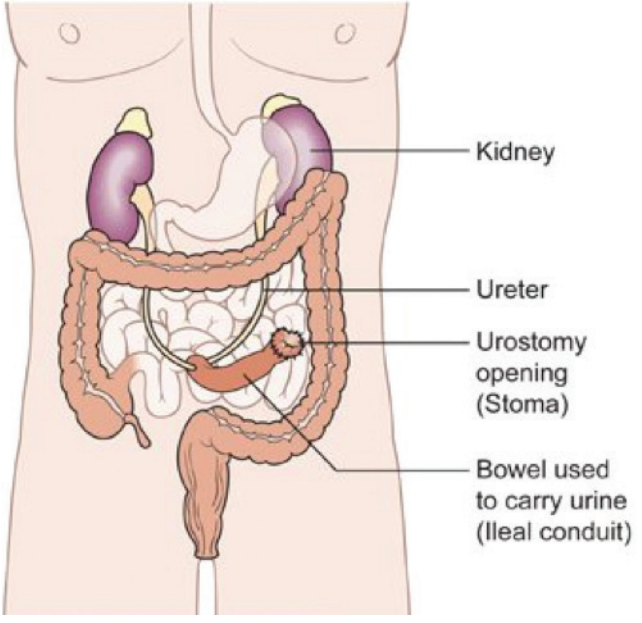
Cystectomy in men involves removal of the bladder, the prostate, the seminal vesicles and portions of the vas deferens and occasionally the urethra.

Cystectomy in women involves removal of the bladder, the uterus, the cervix, a portion of the vagina and sometimes the urethra.

Incontinent Urinary Diversion

Ileal Conduit Urinary Diversion

An ileal urinary diversion (also known as; ileal conduit, cutaneous urinary diversion, or urostomy) is made up of a section of small intestine that is separated from the rest of the small bowel. The isolated section of bowel is then created into a tube like structure where the ureters are connected and is then brought out of the abdomen creating a stoma. The urine flows from the kidneys directly into the ileal conduit "tube" and then drains out of the stoma into a collection bag that is attached to the outside of the abdomen.



Urostomy

A urostomy is an opening in the abdominal wall that is made during surgery. It re-directs urine away from a bladder that is diseased or not working as it should. The bladder is either bypassed or removed. (Surgery to remove the bladder is called a cystectomy.) The urine is passed out of the body through an opening called a stoma. An enterostomal therapy (ET) nurse or the surgeon will figure out the best location for your stoma. (An ET nurse is a specially trained registered nurse who takes care of and teaches ostomy patients. This nurse may also be called a Wound, Ostomy, and Continence nurse (WOC) or an ostomy nurse.)

The stoma will look pink to red and will be moist and shiny. The shape will be round to oval, and it will shrink over time after surgery. Some stomas may stick out a little, while others are flush with the skin.

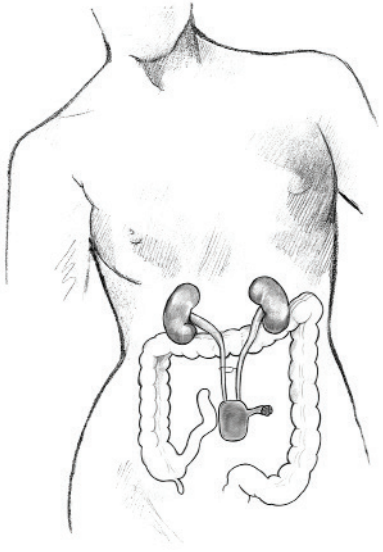
Continent Urinary Diversion

Neobladder Reconstruction

After the bladder is removed a procedure called a continent urinary diversion is performed. A continent urinary diversion is a surgical procedure that constructs a new bladder known as a “neobladder.” Intestinal tissue is used to create either an internal urinary pouch that collects urine and allows the patient to use a foley catheter to drain the pouch or an internal urinary pouch attached directly to the urethra (known as a neobladder to urethra diversion).

Indiana Pouch Reservoir

The Indiana pouch reservoir is a catheterizable pouch that is similar to a ileal conduit however it has a self-catheterizable stoma. The Indiana pouch reservoir is a pouch that collects urine and allows the patient to insert a catheter into the stoma to drain the urine. The Indiana pouch stoma does not leak urine because of how it is constructed and requires highly motivated patients who are willing to self catheterize the Indiana pouch.



Adjusting to Life After a Cystectomy

Support

- Family and Friend Support: Your family and friends can help provide the emotional, spiritual and physical support you may need as you go through your recovery process.
- Health Care Support: Optimizing your healing process requires an integrated multidisciplinary approach. Seek support from your doctor, nurse, nutritional specialist, physical therapist, wound care and or ostomy nurse, or a social worker to help you with any of your specific needs.

Future medical treatments and care

- After your surgery you will need to have frequent follow up visits with your urologist. During your follow visits your doctor will make sure you are doing well, check on your surgical wounds and ensure you are doing well.

- Follow up visits are also required to monitor your status and to make sure there is no spread or reoccurrence of your cancer. Your doctor and nurse will also teach you how to care for yourself depending on what type of surgery you have.
- After surgery and review of your pathology reports, your doctor may recommend that you have chemotherapy or radiation therapy.
- The need for chemotherapy or radiation therapy may vary with each patient and should be discussed with your urologist.

At UT Erlanger Urology, we care deeply about our patients and how they do after surgery. Please call us if you have any questions or concerns.

Notes

Notes

ERLANGER UROLOGY

Three Convenient Locations

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