

BLADDER CANCER

GLOSSARY OF TERMS

Abdomen: The part of the body that contains the pancreas, stomach, intestines, kidneys, urinary bladder, liver, gallbladder, and other organs.

Anesthesia: Loss of feeling or awareness. Local anesthetics cause loss of feeling in a part of the body. General anesthetics put the person to sleep.

Anterior exenteration: The standard operation to remove the bladder cancer in female patients, which involves not only the removal of the bladder and urethra but also the removal of the uterus, cervix, ovaries, and the anterior or front wall of the vagina. This operation has recently been modified so the urethra can be preserved in select cases. In addition, patients of childbearing age may wish to discuss with their surgeon techniques for preserving the uterus and cervix during cystectomy.

Arsenic: A poisonous chemical used to kill weeds and pests. It has also been associated with increased risk of developing bladder cancer.

Bacteria: A large group of single-cell microorganisms. Some cause infections and disease in animals and humans. The singular of bacteria is bacterium.

BCG solution: A form of biological immunotherapy for non-muscle invasive bladder cancer. A catheter is used to place the BCG solution into the bladder. The solution contains live, weakened bacteria (*Bacillus Calmette-Guerin*) that activate the immune system. The BCG solution used for bladder cancer is not the same thing as BCG vaccine, a vaccine for tuberculosis. Normally six weekly treatments are given. BCG maintenance is a series of treatments following the initial six treatments. These treatments usually are a series of 3 treatments and usually will be given every 6 months for a 3 year period (Lamm protocol).

Benign: Not cancerous; does not invade nearby tissue or spread to other parts of the body.

Biological therapy: Treatment to stimulate or restore the ability of the body (e.g. immune system) to fight infection and disease and used to lessen side effects that may be caused by some cancer treatments. Also may be known as immunotherapy, biotherapy, or biological response modifier (BRM) therapy.

Biopsy: The removal of cells or tissues for examination under a microscope. When only a sample of tissue is removed, the procedure is called an incision biopsy or core biopsy. When an entire tumor or lesion is removed, the procedure is called an excisional biopsy. When a sample of tissue or fluid is removed with a needle, the procedure is called a needle biopsy or fine-needle aspiration.

Bladder: The organ that stores urine.

Bone scan: A technique to identify metastasis in bone which creates images of bones on a computer screen or on film. A small amount of radioactive material is injected into a blood vessel and travels through the bloodstream; it collects in the bones and is detected by a scanner.

Cancer: A term for diseases in which abnormal cells divide without control. Cancer cells can invade nearby tissues and can spread through the bloodstream and lymphatic system to other parts of the body.

Carcinogen: Any substance that causes cancer.

Carcinoma in situ: Cancer that involves only the cells in which it began and that has not spread to neighboring tissues.

Chemotherapy: Treatment with anticancer drugs. Neoadjuvant chemotherapy is given prior to surgery while adjuvant chemotherapy is given after surgery.

Chlorine: A chemical used to disinfect water and as a bleach.

Clinical trial: A research study that tests how well new medical treatments or other interventions work in people. Each study is designed to test new methods of screening, prevention, diagnosis, or treatment of a disease.

Continence: The ability to control the flow of urine from the bladder to the outside of the body. This capability is normally due to muscular structures called sphincters, which wrap around the base of the bladder and urethra. Removal of or damage to the urinary sphincters can result in an inability to control the flow of urine normally.

Continent catheterizable reconstruction: One of a group of internal reservoirs or new bladders (neobladders) that are not attached to the urethra. Instead, it is emptied through catheterization, usually through a special attachment to the skin that is similar to but smaller than the stoma for an ileal conduit. The continent reservoir is formed from a piece of small intestine to hold urine after the bladder has been removed. Continent reconstructions are often referred to by names given to them at the institution where the particular type of reconstruction was developed, e.g. Indiana Pouch.

CT scan: Computed tomography scan. A series of detailed pictures of areas inside the body taken from different angles; the pictures are created by a computer linked to an x-ray machine. Also called computerized tomography and computerized axial tomography (CAT) scan.

Cystectomy: Surgery to remove all or part of the bladder.

Cystoscope: A thin, lighted instrument used to look inside the bladder and remove tissue samples or small tumors.

Cystoscopy: Examination of the bladder and urethra using a thin, lighted instrument (called a cystoscope) inserted into the urethra. Tissue samples can be removed and examined under a microscope to determine whether disease is present.

Enterostomal therapist: A health professional trained in the care of persons with urostomies and other stomas.

Erectile dysfunction (ED): A sexual dysfunction characterized by the inability to develop or maintain an erection of the penis during sexual performance.

External radiation: Radiation therapy that uses a machine to aim high-energy rays at the cancer, and also called external-beam radiation.

Fallopian tubes: Part of the female reproductive tract.

Fulguration: Destroying tissue using an electric current.

Gene: The functional and physical unit of heredity passed from parent to offspring. Genes are pieces of DNA, and most genes contain the information for making a specific protein.

Grade: The grade of a tumor depends on how abnormal the cancer cells look under a microscope and how quickly the tumor is likely to grow and spread. Grading systems are different for each type of cancer.

Hematuria: Blood in the urine. Hematuria is either gross, meaning that the blood can be seen with the naked eye, or microscopic, meaning that blood can only be detected in the urine if the urine is examined under a microscope.

Ileal conduit: A simple form of urinary tract reconstruction which utilizes a small piece of intestine called the ileum. The ureters are implanted into this small segment of intestine, one end is closed with sutures, and the other is brought out to the skin to create a small opening, or mouth, called a stoma. Urine drains into a small pouch that fits over the stoma and attaches to the skin with an adhesive.

Imaging: tests that produce pictures of areas inside the body.

Immune system: The complex group of organs and cells that defends the body against infection or disease.

Impotent: Unable to have an erection adequate for sexual intercourse.

Incision: A cut made in the body during surgery.

Indiana Pouch: A surgically created urinary diversion used to create a way for the body to store and eliminate urine for patients who have had their urinary bladders removed as a result of bladder cancer, pelvic exenteration, bladder exstrophy or who are not continent due to a congenital, neurogenic bladder. This particular urinary diversion results in a *continent* reservoir that the patient must catheterize regularly to empty urine.

Internal radiation: A procedure in which radioactive material sealed in needles, seeds, wires, or catheters is placed directly into or near the tumor, also called brachytherapy, implant radiation, or interstitial radiation therapy.

Intravenous: IV into a vein.

Intravenous pyelogram (IVP): A series of x-rays of the kidneys, ureters, and bladder. The x-rays are taken after a dye is injected into a blood vessel. The dye is concentrated in the urine, which outlines the kidneys, ureters, and bladder on the x-rays.

Intravesical: Within the bladder.

Invasive bladder cancer: A bladder cancer that invades the structures that lie beneath the lining cells. These tumors have characteristically worse biological behavior and are capable of spreading to other parts of the body without much warning. Accordingly, physicians are constantly on the lookout for evidence of disease spread in patients with invasive bladder carcinomas. Muscle invasive cancers are less common than superficial ones, but they

unfortunately spread to other parts of the body in about half of the patients who have this invasive disease.

Invasive cancer: Cancer that has spread beyond the layer of tissue in which it developed and is growing into surrounding, healthy tissues.

Interferon: Interferon alpha2b is a BCG enhancer used as a treatment added to BCG in the case of refractory BCG.

Kidneys: A pair of organs in the abdomen that remove waste from the blood (as urine), produce erythropoietin (a substance that stimulates red blood cell production), and play a role in blood pressure regulation.

Lamina propria: A specialized layer of blood vessels and cells that separates the transitional epithelium from the actual muscle wall of the bladder.

Local therapy: Treatment that affects cells in the tumor and the area close to it.

Lymph node: A rounded mass of lymphatic tissue that is surrounded by a capsule of connective tissue. Lymph nodes are spread out along lymphatic vessels and contain many lymphocytes, which filter the lymphatic fluid (lymph).

Lymphatic system: The tissues and organs that produce, store, and carry white blood cells that fight infection and other diseases. This system includes the bone marrow, spleen, thymus, lymph nodes, and network of thin tubes that carry lymph and white blood cells. These tubes branch, like blood vessels, into all the tissues of the body.

Magnetic resonance imaging (MRI). A procedure in which a magnet linked to a computer is used to create detailed pictures of areas inside the body.

Malignant: Cancerous; a growth with a tendency to invade and destroy nearby tissue and spread to other parts of the body.

Medical oncologist: A doctor who specializes in diagnosing and treating cancer using chemotherapy, hormonal therapy, and biological therapy. A medical oncologist often serves as the main caretaker of someone who has advanced cancer and coordinates treatment provided by other specialists.

Metastasis: The spread of cancer from one part of the body to another. Tumors formed from cells that have spread are called "secondary tumors" and contain cells that are like those in the original (primary) tumor. The plural is metastases.

Metastasize: To spread from one part of the body to another. When cancer cells metastasize and form secondary tumors, the cells in the metastatic tumor are like those in the original (primary) tumor.

Neobladder: A new bladder usually constructed out of a piece of intestine and attached to the urethra. This is placed in the position that had been occupied by the bladder before it was removed because of disease.

Oncogene: A specific type of cancer-causing gene which, when it mutates, leads to abnormal stimulation of cell growth.

Ostomy: An operation to create an opening (a stoma) from an area inside the body to the outside. Colostomy and urostomy are types of ostomies.

Ovaries: The pair of female reproductive glands in which the ova, or eggs, are formed. The ovaries are located in the pelvis, one on each side of the uterus.

P53: A particularly notable tumor-suppressor gene that is thought to play a central role in normal cells' growth regulation. Mutation of the P53 tumor suppressor gene has been shown to occur in up to 40 percent of invasive bladder carcinomas. Some scientists believe that P53 mutation may be a marker of the presence of a dangerous type of tumor which could require multiple therapies to cure.

Pathologist: A doctor who identifies diseases by studying cells and tissues under a microscope.

Pelvis: The lower part of the abdomen, located between the hip bones.

Photodynamic therapy: Treatment with drugs that become active when exposed to light. These drugs kill cancer cells.

Primary tumor: The original tumor.

Prostate: A gland in the male reproductive system just below the bladder. It surrounds part of the urethra, the canal that empties the bladder, and produces a fluid that forms part of semen.

Quality of life: The overall enjoyment of life. Many clinical trials measure aspects of an individual's sense of well-being and ability to perform various tasks to assess the effects of cancer and its treatment on the quality of life.

Radiation oncologist: A doctor who specializes in using radiation to treat cancer.

Radiation therapy: The use of high-energy radiation from x-rays, gamma rays, neutrons, and other sources to kill cancer cells and shrink tumors. Radiation may come from a machine outside the body (external-beam radiation therapy), or it may come from radioactive material placed in the body in the area near cancer cells (internal radiation therapy, implant radiation, or brachytherapy). Systemic radiation therapy uses a radioactive substance, such as a radio labeled monoclonal antibody that circulates throughout the body, also called radiotherapy.

Radical cystectomy: Surgery to remove the bladder as well as nearby tissues and organs.

Radioactive: Giving off radiation.

Rectal: By or having to do with the rectum. The rectum is the last 8-10 inches of the large intestine and ends at the anus.

Recur: To occur again. Recurrence is the return of cancer, at the same site as the original (primary) tumor or in another location, after the tumor had disappeared.

Risk factor: A habit, trait, condition, or genetic alteration that increases a person's chance of developing a disease.

Segmental cystectomy: The removal of the cancer as well as some of the bladder tissue around the tumor sometimes called a partial cystectomy.

Side effects: Problems that occur when treatment affects healthy cells. Common side effects of cancer treatment are fatigue, nausea, vomiting, decreased blood cell counts, hair loss, and mouth sores.

Small intestine: The part of the digestive tract that is located between the stomach and the large intestine.

Sonogram: A computer picture of areas inside the body created by bouncing sound waves off organs and other tissues, also called ultra sonogram or ultrasound.

Sphincter muscle: A specialized circular muscle that effectively cuts off the flow of urine when contracted. Men have two such sphincter mechanisms, one at the junction of the prostate and bladder and the other just below the prostate in the upper part of the urethra. The second sphincter, which wraps around the urethra, is the one that is thought to be responsible for continence in females.

Squamous cell carcinoma: Cancer that begins in squamous cells, which are thin, flat cells resembling fish scales. Squamous cells are found in the tissue that forms the surface of the skin, the lining of the hollow organs of the body, and the passages of the respiratory and digestive tracts. Also call epidermoid carcinoma.

Squamous cells: Flat cells that look like fish scales under a microscope. These cells cover internal and external surfaces of the body.

Stage: The extent of a cancer, especially whether the disease has spread from the original site to other parts of the body.

Staging: Performing exams and tests to learn the extent of the cancer within the body, especially whether the disease has spread from the original site to other parts of the body.

Stoma: A surgically created opening from an area inside the body to the outside.

Superficial: affecting cells on the surface. Not invasive.

Superficial bladder cancer: Tumors arising from the lining of the bladder that do not invade the muscle wall. The majority of bladder cancers are superficial, and, though these may progress in only a minority of patients, they do usually recur.

Surgeon: A doctor who removes or repairs a part of the body by operating on the patient.

Surgery: A procedure to remove or repair a part of the body or to find out whether disease is present.

Symptom: An indication that a person has a condition or disease. Some examples of symptoms are headache, fever, fatigue, nausea, vomiting, and pain.

Systemic therapy: Treatment that uses substances that travel through the bloodstream, reaching and affecting cells all over the body.

Tissue: A group or layer of cells that are alike in type and work together to perform a specific function.

Transitional cell carcinoma: The most common type of cancer that develops in the lining of the bladder, ureter, or renal pelvis, also referred to as urothelial cell carcinoma.

Transitional cells: Cells that vary in shape depending on whether the tissue is being stretched. The cells may be stretched without breaking apart. They line hollow organs such as the bladder.

Transurethral resection of bladder tumor: Surgery performed with a special instrument inserted through the urethra, also called a TURBT.

Trigone: The floor of the bladder, where the ureters and urethra connect to the interior of the bladder.

Tumor: An abnormal mass of tissue that results from excessive cell division. Tumors perform no useful body function. They may be benign (not cancerous) or malignant (cancerous).

Tumor suppressor gene: A member of a category of genes that are thought to be active during embryonic development. These genes have normal functions during embryonic stages that are suppressed when development is complete. If these functions are somehow reactivated during adult life, uncontrolled growth can result. This growth can sometimes lead to the development of certain cancers.

Ureter: The tube that carries urine from the kidney to the bladder.

Urethra: The tube through which urine leaves the body. It empties urine from the bladder.

Urine: Fluid containing water and waste products. Urine is made by the kidneys, stored in the bladder, and leaves the body through the urethra.

Urine Cytology: Urine cytology evaluates this urinary sediment for the presence of cancerous cells from the lining of the urinary tract.

Urologic oncologist: a doctor who specializes in treating cancers of the urinary system.

Urologist: A doctor who specializes in diseases of the urinary organs in females and the urinary and sex organs in males.

Urostomy: An operation to create an opening from inside the body to the outside, making a new way to pass urine.

Uterus: The small, hollow, pear-shaped organ in a woman's pelvis. This is the organ in which a fetus develops, also called the womb.

Vagina: The muscular canal extending from the uterus to the exterior of the body, also called the birth canal.

Vaginal: Of or having to do with the vagina, the birth canal.

Note: This glossary was compiled by Bladder Cancer Canada and has been reviewed by the Chair of the Bladder Cancer Canada Medical Advisory Board. This glossary is for patients and caregivers to use as a reference only and is not meant to be an exhaustive list, nor is it meant to replace advice from your doctor. Should you have other terms that need to be explained to you or require further clarification on any of the above terms please contact your doctor.