



Bladder cancer – transitional cell carcinoma

Bladder cancer is the fifth most common cancer in men, but only half as common in women. While it can occur at any age, even in children, it is rare under the age of 50 years and usually presents in old age.

More than 90% of bladder cancers form in the lining of the bladder (the urothelium) and are known as urothelial carcinomas, or transitional cell carcinomas.

Other types of bladder cancers, including squamous cell carcinomas and adenocarcinomas, are rare in Australia.

Around 75% of bladder cancers are superficial and treatment is relatively simple, but in 25% of cases the cancer has invaded the bladder wall and partial or complete removal of the bladder is necessary.

What causes bladder cancer?

The risk factors for developing bladder cancer include:

- **Cigarette smoking.** The duration of smoking and the number smoked per day impact on a person's risk of developing bladder cancer.
- Exposure to **carcinogenic chemicals** in the environment, mainly from the textile or petrochemical industries.
- A **genetic predisposition** in people born in some areas of Europe is suspected.
- **Chemotherapy and radiotherapy.** People undergoing chemotherapy or radiotherapy for other cancers are more vulnerable to developing bladder cancer. For example, women who have been treated with radiotherapy for uterine or ovarian cancer have a higher risk of developing bladder cancer than women who just have surgery. Both men and women treated with the chemotherapy cyclophosphamide have an increased risk of bladder cancer.

What are the symptoms of bladder cancer?

The symptoms of bladder cancer are similar to those of urinary tract infection and include:

- **Blood in the urine** (haematuria). This is often painless.
- Feeling **pain or burning** on urination.
- **Frequent urge** to urinate

How is bladder cancer diagnosed?

A doctor will perform a physical examination and order several tests to rule out other causes of the symptoms and to specifically check for cancer.

- **An x-ray** will be ordered to examine the lining of the urethra, bladder and kidneys
- A **urine test** will be ordered to check for cancer cells in the urine
- If cancer is suspected, a **cystoscopy** is carried out. This involves inserting an endoscopic camera on a thin tube through the urethra to visualise the bladder. This is usually done under a local anaesthetic but if a biopsy is required it would be done under a general anaesthetic.
- If cancer is diagnosed, imaging **scans** are used to work out the size of the tumour and whether it is invasive. This is known as "staging".

How is bladder cancer treated?

The treatment will vary, depending on whether the cancer is invasive.

For a superficial tumour:

- The cystoscope is used to cut the cancer out (transurethral resection) under a general anaesthetic. However because the tumours frequently recur, the patient will need

regular review, undergoing repeat check-up cystoscopies under local anaesthetic for up to a decade.

- Chemotherapy is not routinely required for superficial cancer. However if there are many tumours or they appear particularly aggressive, chemotherapy or immunotherapy may be advised. This is a drug delivered in a fluid by putting a catheter into the bladder once a week for six weeks (intravesical chemotherapy). No anaesthetic is needed and it can be done in an outpatient setting. Systemic chemotherapy (a drug delivered through the bloodstream) is usually only used in patients with advanced disease.

Invasive cancer:

- Partial or complete removal of the bladder, known as cystectomy, may be required. Following a cystectomy the urine needs to be diverted in one of the following ways:
 - Urine is directed through the intestinal tissue, known as an ileal conduit, with an opening or “stoma” on the abdominal wall. The patient will wear a pouch externally on the skin to collect urine; or
 - An orthotopic neobladder is created. In this operation the patient’s bladder is removed and replaced with loops of their own bowel, fashioned into a pouch. There is no change to normal bowel function and the patient passes urine naturally through the urethra.

What are the side-effects of the treatment?

Chemotherapy: The side-effects from intravesical chemotherapy include:

- Feelings of urgency to urinate, having to urinate frequently, pain in the bladder and sometimes incontinence. These symptoms run their course and eventually stop
- Nausea and loss of appetite

Surgery: The side-effects from bladder removal are substantial and life-changing.

- Men face impotence and infertility:
 - Most men who have the operation will be impotent because the nerves to the penis become damaged.
 - Bladder removal also means infertility. Men can no longer ejaculate as the prostate has to be removed as well to limit the spread of the cancer.
- Women also face sexual dysfunction and sometimes infertility:
 - Part of the interior vaginal wall may be removed along with the bladder. This leads to a shortening or narrowing of the vagina which can cause discomfort during sex.
 - In some cases the ovaries, Fallopian tubes and uterus are removed as well leading to immediate menopause with symptoms such as hot flushes, vaginal dryness and insomnia. Women are then infertile.

Where can I get support?

Many cancer patients gain emotional support and practical help for everyday living, by seeking out support groups. The following websites may have useful information:

www.cancercouncil.com.au

www.healthinsite.gov.au