5.18.5B: Ureters

The ureters are two tubes that drain urine from each of the kidneys into the bladder.

Learning Objectives

• Describe the role of ureters in the urinary system and their structure

Key Points

• The ureter contains transitional epithelium and an additional smooth muscle layer in the more distal one-third to assist with peristalsis.
• The ureters are usually 25–30 cm (10–12 in) long and 3–4 mm in diameter.
• Muscles in the walls of the ureters send the urine in small spurts into the bladder.
• Kidney stones are a common disease of the ureter, in which a stone made of minerals obstructs the ureter.
• The ureter has a few points of constriction where kidney stones are more commonly found.

Key Terms

• **transitional epithelial tissues**: Epithelial tissues that can change between columnar and squamous forms that are found in the ureters and the cervix.
• **peristalsis**: The rhythmic, wave-like contraction of smooth muscle tissue that can propel substances through the many muscular tubes of the body.

The ureters are tubes made of smooth muscle fibers that propel urine from the kidneys to the urinary bladder. In the
adult, the ureters are usually 25–30 cm (10–12 in) long and 3–4 mm in diameter. The ureter is one of the essential organs of urinary tract that controls urine transport.

**Ureter Structure and Function**

The ureters are two tubes that are made out of smooth muscle and transitional epithelial tissues, which are a type of epithelial tissue that may either be columnar or squamous. Each kidney has its own ureter through which urine drains into.

Muscles in the walls of the ureters send the urine in small spurts into the bladder, in a process called peristalsis. After the urine enters the bladder from the ureters, small folds in the bladder mucosa act like valves to prevent the backward flow of the urine; these are called the ureteral valves. The ureteral valves function similarly to the semilunar valves in the
veins of the body, but are structurally different, consisting of transverse mucosal epithelial folds.

Ureter Pathology

Kidney stones and cancer are common diseases of the ureter. A kidney stone can move from the kidney and become lodged inside the ureter, which can block the flow of urine, as well as cause a sharp cramp in the back, side, or lower abdomen. The affected kidney could then develop hydronephrosis, should a part of the kidney become swollen due to blocked flow of urine.

Kidney stones are very common and are usually clumps of aggregated minerals that are most often found at the constriction points in the ureter. Ureter cancer is often due to a malignant transformation of the transitional epithelial tissue, which is more vulnerable to developing cancer cells compared to other tissues.