



SNS COLLEGE OF ALLIED HEALTH SCIENCES
SNS Kalvi Nagar, Coimbatore - 35
Affiliated to Dr MGR Medical University, Chennai



DEPARTMENT : PHYSICIAN ASSISTANT

COURSE NAME : ANATOMY

UNIT : URINARY SYSTEM

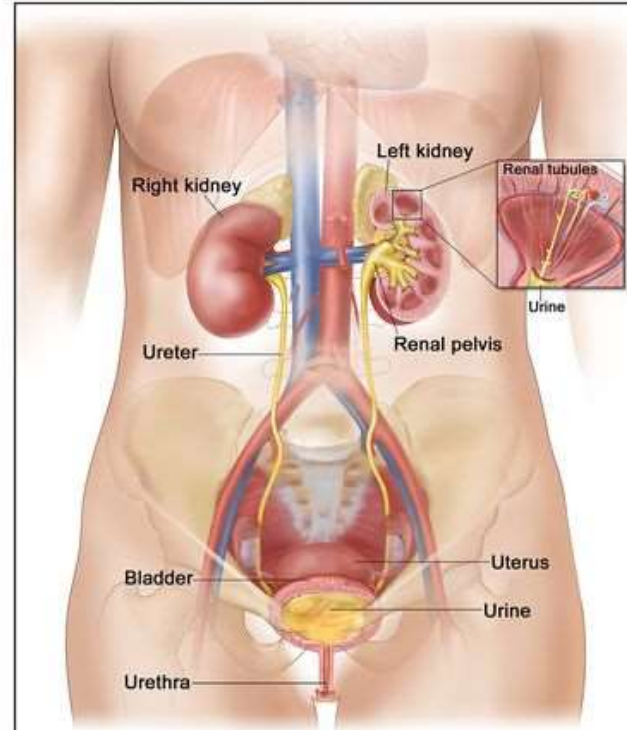
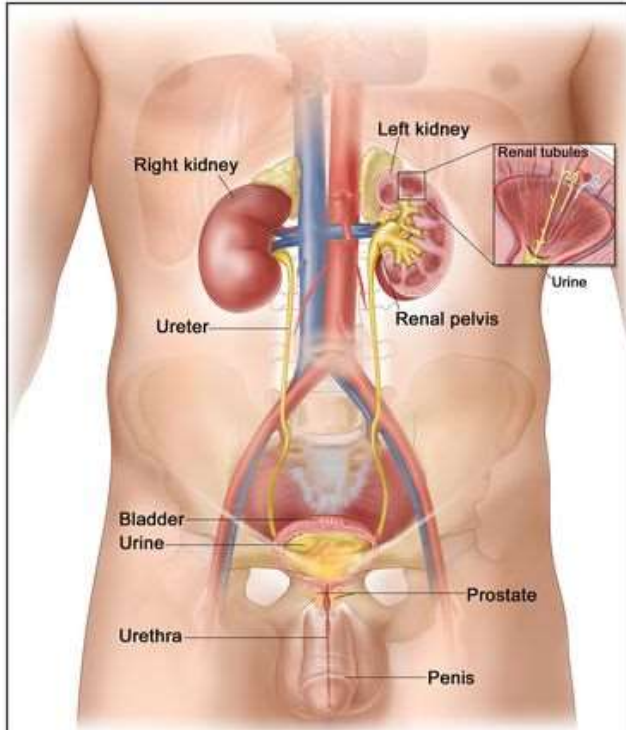
TOPIC : URETHRA



URETHRA



- The urethra is the vessel responsible for transporting urine from the bladder to an external opening in the perineum.
- It is lined by stratified columnar epithelium, which is protected from the corrosive urine by mucus secreting glands.





MALE URETHRA



- The male urethra is approximately 15-20cm long. In addition to urine, the male urethra transports semen – a fluid containing spermatozoa and sex gland secretions.
- Male urethra can be divided anatomically into three parts (proximal to distal):



Prostatic urethra:

- Begins as a continuation of the bladder neck and passes through the prostate gland.
- Receives the ejaculatory ducts (containing spermatozoa from the testes and seminal fluid from the seminal vesicle glands) and the prostatic ducts (containing alkaline fluid).
- It is the widest and most dilatable portion of the urethra.



Membranous urethra:

- Passes through the pelvic floor and the deep perineal pouch.
- Surrounded by the external urethral sphincter – which provides voluntary control of micturition.
- It is the narrowest and least dilatable portion of the urethra.



Penile (bulbous) urethra:

- Passes through the bulb and corpus spongiosum of the penis, ending at the external urethral orifice (the meatus).
- Receives the bulbourethral glands proximally.
- In the glans (head) of the penis, the urethra dilates to form the navicular fossa.



BLOOD SUPPLY



- Prostatic urethra – supplied by the inferior vesical artery (branch of the internal iliac artery which also supplies the lower part of the bladder).
- Membranous urethra – supplied by the bulbourethral artery (branch of the internal pudendal artery)
- Penile urethra – supplied directly by branches of the internal pudendal artery.



LYMPHATIC DRAINAGE



Lymphatic drainage also varies according to the region of the urethra. The prostatic and membranous portions drain to the obturator and internal iliac nodes, while the penile urethra drains to the deep and superficial inguinal nodes.



NERVE SUPPLY



The nerve supply to the male urethra is derived from the prostatic plexus, which contains a mixture of sympathetic, parasympathetic and visceral afferent fibres.



- In females, the urethra is relatively short (approximately 4cm). It begins at the neck of the bladder, and passes inferiorly through the perineal membrane and muscular pelvic floor.
- The urethra opens directly onto the perineum, in an area between the labia minora, known as the vestibule.



- Within the vestibule, the urethral orifice is located anteriorly to the vaginal opening, and 2-3cm posteriorly to the clitoris.
- The distal end of the urethra is marked by the presence of two mucous glands that lie either side of the urethra – Skene’s glands. They are homologous to the male prostate.



BLOOD SUPPLY



- The arterial supply to the female urethra is via the internal pudendal arteries, vaginal arteries and inferior vesical branches of the vaginal arteries.
- Venous drainage is given by veins of the same names.



NERVE SUPPLY



The nerve supply to the female urethra arises from the vesical plexus and the pudendal nerve. Visceral afferents from the urethra run in the pelvic splanchnic nerves.



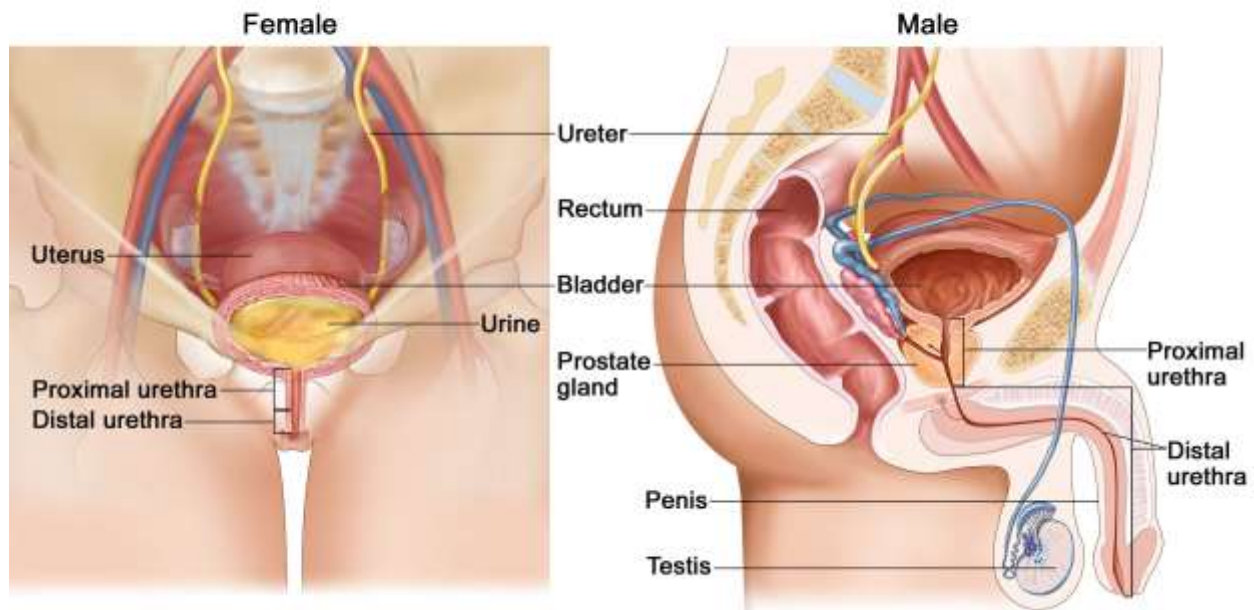
LYMPHATIC DRAINAGE



Lymphatic drainage of the proximal female urethra is to the internal iliac nodes, while the distal urethra drains to the superficial inguinal lymph nodes.



Distal and Proximal Urethra





APPLIED ANATOMY



- Urethritis
- Urethral Stricture
- Urethral Cancer
- UTI



ASSESSMENT



- What is the Difference between Male and Female Urethra ?
- What all are the Parts of Male urethra ?