

Histology Team 431



Leaders

Tamader Aloofy

Mohammed Aldaheri

Members

Ibtihal Al-Amer

Abdullah Baqays

Raghda Al Amri

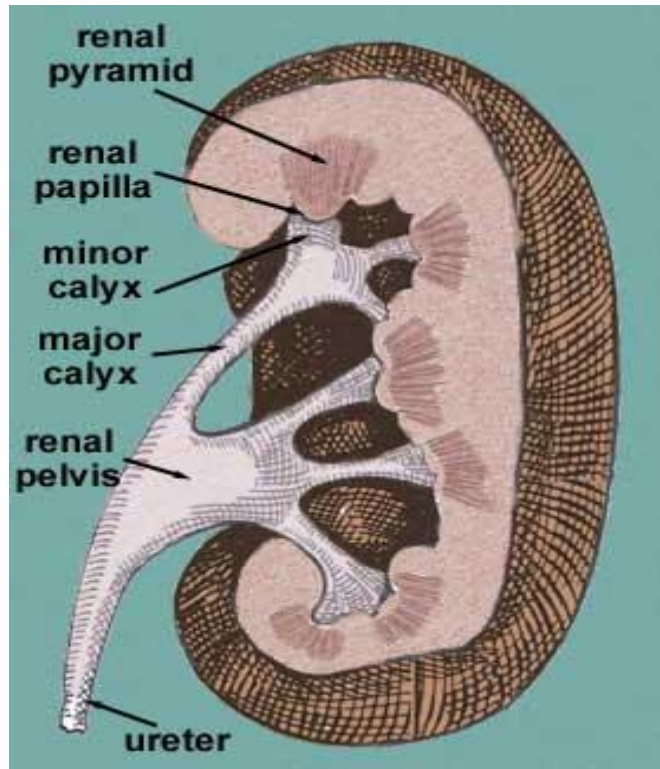
Nasser Alsaleh

Walaa Al Shehri

Mosaed Aldekhayel

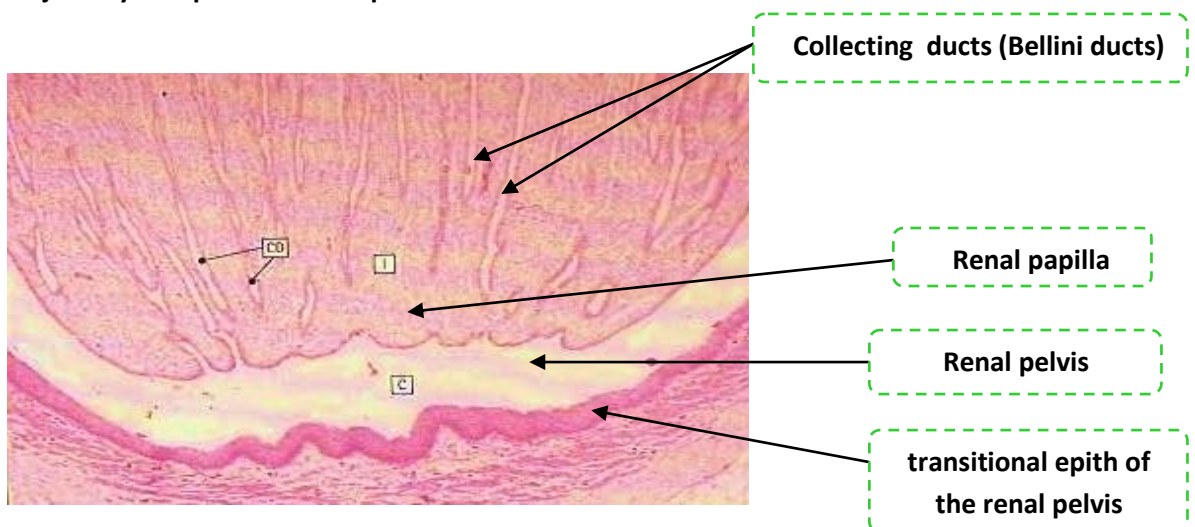
Abeer Al-Suwailem

Renal Calyces



Each calyx accepts urine from the renal papilla of a renal pyramid.

- ❖ There is a minor and a major renal calyces and They are lined with **transitional epith.**, lamina propria and smooth muscle.
- ❖ Every 3 or 2 minor calyces merge to form major calyces.
- ❖ Major calyces open into renal pelvis.



URETER

1-Mucosa:

Is formed of **transitional epith.** and lamina propria.

2- Muscularis (muscular coat):

*Is formed of 2 layers of smooth muscle in the upper 2/3:

A- Inner **longitudinal**.

B- Outer **circular**.

*Is formed of 3 layers of smooth muscle in the lower 1/3:

A- Inner **longitudinal** .

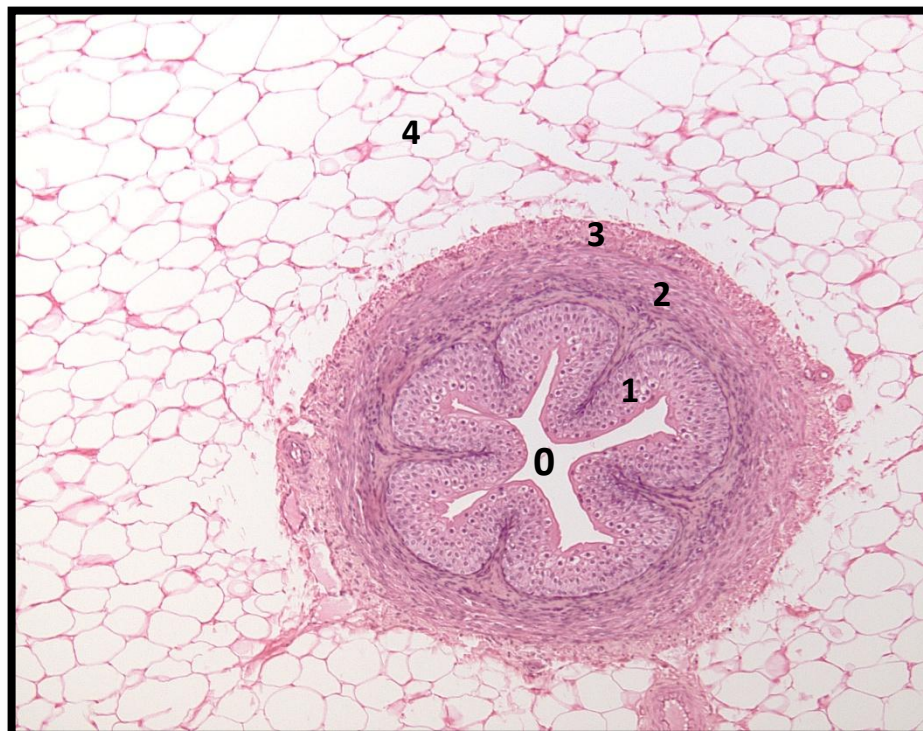
B- Middle **circular**.

C- Outer **longitudinal**.

3-Adventitia

fibrous C.T. covering. N.B. **No serosa.**

***Note !** The ureter is retroperitoneum so the outer layer is not covered by visceral layer "no serosa".

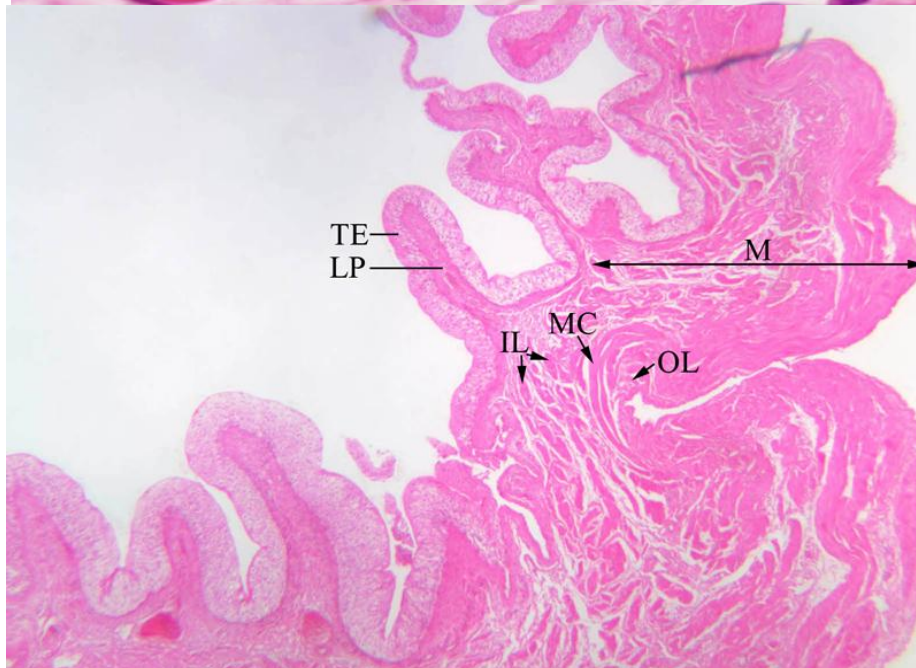


- 0- Lumen
- 1- Mucosa
- 2- Muscularis
- 3- Adventitia
- 4- Adipose tissue

Urinary bladder

❖ It has the same structure as the ureter **EXCEPT** :

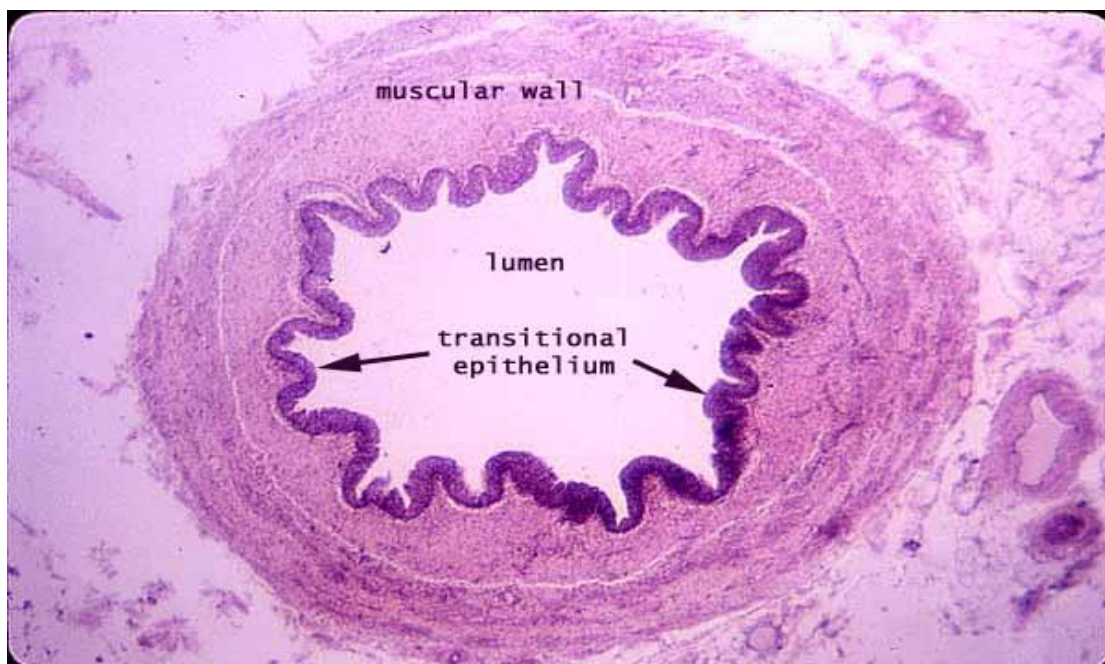
- 1- The transitional epithelium has dome-shaped cells (in empty bladder).
- 2- Muscularis has 3 layers of smooth muscle: inner and outer longitudinal (thin) and middle circular (thick) layers.
- 3- Its outer covering is **adventitia or serosa**.



TE - transitional epithelium LP - lamina propria M - muscularis
IL - inner longitudinal MC - middle circular OL - outer longitudinal layer of muscularis

URETHRA

<i>Female Urethra</i> ESS	<i>Male Urethra</i> PMP
<p>❖ Female urethra is short and lined by:</p> <p>A- Epithelium:</p> <ol style="list-style-type: none">1- Transitional epith. Near the bladder.2- Pseudostratified columnar epith.3- Stratified squamous non-keratinized epith. <p>B- Sub-epithelial fibroelastic CT that contains glands of Littre (mucus-secreting glands).</p> <p>C- Smooth muscle: inner longitudinal and outer circular layers. But they are not well developed</p>	<p>❖ It is long and is divided into 3 regions:</p> <ol style="list-style-type: none">1- Prostatic urethra: lined with transitional epith.2- Membranous urethra: lined with Stratified columnar epith. with patches of pseudostratified columnar epithelium.3- Penile (spongy) urethra-longest part: lined with Stratified columnar epith. with patches of pseudostratified columnar epithelium. <p>N.B. In navicular fossa: Stratified squamous non-keratinized epith.</p> <p>N.B. The lamina propria contains mucus-secreting glands of Littre.</p>



Because the urethra in this specimen is surrounded neither by prostatic tissue (as would be the prostatic urethra) nor by erectile tissue (as would be the penile urethra), this appears to be a female urethra.

Extra Info:

- ❖ The tissue composition of **calyx, renal pelvis, ureters bladder** and **urethra** is comparatively simple. Each of these elements has a wall lined by **transitional epithelium (urothelium)** and containing smooth muscle.
- ❖ **Histology rule** : as the structure terminates the thickness of the epithelium increases.
- ❖ The kidney called endocrine gland because it has secondary endocrine function. For example, it secretes endocrine hormones such as erythropoietin , aldosterone and medullipin . Also it secretes renin enzyme that participates in the body's renin-angiotensin system .
- ❖ The **urethral or periurethral glands** (also **Littre glands**) are glands that branch off

Questions.

1- What is the lining epithelium of the urinary bladder?

- A- Stratified squamous Epithelium.
- B- Pseudostratified columnar epithelium
- C- Transitional epithelium.
- D- Simple squamous epithelium.

2- Which one of the statements is true?

- A- The outer covering of the Ureter contains serosa.
- B- The outer covering of the urinary bladder has no serosa.
- C- The outer covering of the ureter has no serosa.

Answers.

- 1-C
- 2-C