

Structure	Comments
<b>Cloaca</b>	<ul style="list-style-type: none"> <li>- Dilated terminal part of the <u>hind gut</u>.</li> <li>- Receive: <b>Allantois</b> &amp; <b>mesonephric duct</b>.</li> <li>- A <b>mesodermal urorectal septum</b> divides it to: <ul style="list-style-type: none"> <li>1- Ventral part: <b>Primitive urogenital sinus</b></li> <li>2- Dorsal part: Anorectal canal.</li> </ul> </li> </ul>
<b>Primitive urogenital sinus</b>	<ul style="list-style-type: none"> <li>- Communicates with the <u>allantois</u> and the <u>mesonephric ducts</u>.</li> <li>- Divided into <b>3</b> parts: <ul style="list-style-type: none"> <li>1- Cranial; <b>Vesical part</b> → Form <b>most</b> of the <u>urinary bladder</u>.</li> <li>2- Middle; <b>Pelvic part</b> → Form the <u>main part</u> of <b>male urethra</b> &amp; <b>entire part of female urethra</b>.</li> <li>3- Caudal; Phallic part → genital tubercle.</li> </ul> </li> </ul>
<b>Urinary bladder</b>	<ul style="list-style-type: none"> <li>- Develop mainly by Vesical part from urogenital sinus.</li> <li>- <b>Trigone</b> → derived from the <b>absorbed caudal ends</b> of the <b>mesonephric ducts</b>.</li> <li>- Epithelium → <b>endodermal</b> origin.</li> <li>- Other layers → <b>splanchnic mesoderm</b>.</li> <li>- Apex → Allantois ( which form <b>median umbilical ligament at birth</b>)</li> <li>- After absorption of the <u>mesonephric ducts</u> to form the <b>trigone</b>, the ureters <b>open</b> separately in the bladder.</li> <li>- Infants and children → <b>in abdominal origin</b>.</li> <li>- Starts to <u>enter</u> the greater pelvis at <b>6 yrs</b>.</li> <li>- Become <b>pelvic origin after puberty</b>.</li> </ul>
<b>Urethra</b>	<ul style="list-style-type: none"> <li>- <u>Genital tubercle</u> → Mesenchymal elevation, develops at the cranial end of the <b>cloacal membrane</b>.</li> <li>- <u>Two urethral folds</u> → develop on either side of the <b>urogenital membrane</b>. <ul style="list-style-type: none"> <li>- Male → <b>fuse</b> with each other to <u>close</u> the <b>penile urethra</b>.</li> <li>- Female → remain separate to form <b>labia minora</b>.</li> </ul> </li> <li>- <u>Laterally two labioscrotal folds</u> → develop on either side of the urethral folds.</li> </ul>
<b>Female urethra</b>	<ul style="list-style-type: none"> <li>- The entire female urethra is derived from <b>endoderm</b> of the <b>pelvic part</b> of the <u>urogenital sinus</u>.</li> <li>- The <b>external urethral</b> orifice opens <b>dorsal</b> to the <b>glans clitoris</b>.</li> </ul>
<b>Male urethra</b>	<ul style="list-style-type: none"> <li>- The <b>genital tubercle</b> elongates forming the <u>phallus</u> (which is the <b>precursor</b> of the <u>penis</u>).</li> <li>- <b>Most</b> of the male urethra : <b>prostatic</b>, <b>membranous</b> and <b>spongy parts</b> is derived from <b>endoderm</b> of the <b>pelvic part</b> of <u>urogenital sinus</u>.</li> <li>- The <u>distal part</u> of penile urethra in <b>glans penis</b> starts as <b>ectodermal</b> solid cord that grows towards the root of penis to meet the spongy urethra, later it canalizes.</li> </ul>

Anomalies	
Anomalies	Description
1- Urachal Anomalies	
Urachal cyst	- Remnant of epithelial lining of urachus
Urachal sinus	- Discharge serous fluid from the umbilicus
Urachal fistula	- The entire urachus remains <u>patent</u> and <b>allows urine to escape from the umbilicus.</b>
2- Bladder Anomalies	
Extrophy of the bladder ( <b>Ectopia vesicae</b> )	- <u>Exposure</u> of the <b>posterior</b> wall of the bladder → due to a <b>defect</b> in the <b>anterior abdominal</b> wall and <b>anterior wall of the bladder.</b>
3- Urethral Anomalies	
Hypospadias	- <b>Most common.</b> - <b>Incomplete fusion of the urethral folds.</b> - Abnormal opening of the urethra occur along the ventral ( <b>inferior</b> ) aspect of the penis.
Epispadias	- Rare. - Urethral meatus (opening) is found on the dorsum (superior) of penis. - Most often associated with <b>extrophy of the bladder.</b>

Done by: Atheer Alnashwan.