

APPLIED EMBRYOLOGY OF THE BLADDER

APPLIED EMBRYOLOGY OF THE BLADDER

The bladder originally develops from the cloaca, the endodermis-lined hindgut structure that is the common opening for the urinary, genital and gastrointestinal tracts. Between weeks 4 and 7 of gestation, the cloaca is partitioned into a ventral urogenital tract (the primitive urogenital sinus) and a dorsal anorectal tract by the urorectal septum (Figure 83.3). The portion of the primitive urogenital sinus that lies above the entry point of the mesonephric ducts becomes the vesicourethral canal, which gives rise to the bladder and pelvic urethra, whereas the portion of the urogenital sinus caudal to this entry point forms the bulbar and penile urethra in males and the vaginal vestibule in females. Initially, the superior end of the lumen of the bladder is continuous with the allantois, a sac-like structure that is responsible for embryonic nutrition and waste. John Hutch, 1922–1972, American urologist, described paraureteric bladder diverticula in 1961. Heinrich Wilhelm Gottfried Waldeyer-Hartz, 1836–1921, Professor of Pathological Anatomy divides the retrorectal space into superior and inferior compartments; it was described by Waldeyer in 1899. The allantois is obliterated and becomes a fibrous cord, the urachus, which runs within the umbilical cord and drains the fetal urinary bladder. As the bladder descends into the pelvis during development, this fibrous cord elongates. Postnatally, this obliterated fibrous cord extends from the apex of the bladder to the umbilicus as the median umbilical ligament. The urachus acts as a landmark during radical cystectomy and can be traced to the apex of the bladder; identification of this structure can prevent early entry into a high-riding bladder, and the urachus is then removed en bloc with the bladder specimen. -

Revision #1

Created 2025-12-31 15:30:02 UTC by Omar Ayman

Updated 2025-12-31 15:30:02 UTC by Omar Ayman