3. TRIGONE OF THE BLADDER - terminology

The trigone is usually described as a triangular area in the posterior wall of the urinary bladder. The base of the bladder is the interureteric ridge which joins the ureteral orifices. The sides of the triangle meet at the apex located in the posterior midline of the bladder neck.

Male trigone:

Urologist's trigone:
The urologist describes the trigone as seen at cystoscopy. In this view of the bladder, the trigone is described as a triangular area in the base of the posterior wall of the bladder. The base of the triangle is the interureteric ridge, between the ureteral orifices. The sides of the trigone meet the apex in the posterior midline of the internal urethral orifice. The mucosa of the trigone is paler and smoother than the mucosa of the rest of the bladder.

Anatomist's trigone:
Is the same as the urologist's trigone but recognizes that the mucosa of the trigone is backed by a layer of connective tissue.
Origin: The mucosa, and layers backing the mucosa are composed of mesoderm derived from mesodermal panels anterior the mesonephric ducts, that insert in the lower end of the fundus (posterior wall) of the bladder. The ureteral orifices are attached to the upper border of the mesodermal panels, which form the interureteric ridge. The mucosa covering the short submucosal (visible) segment of the intravesical ureter is covered by urothelium continuous with the transitional epithelium (urothelium) of the bladder, which is of endodermal origin. The urothelium lining the ureters is differentiated from mesoderm, since the ureters originate from the mesonephric ducts. Epithelium lining the trigone of the bladder, transitional or squamous, is differentiated from the mesodermal panels, that formed the trigone.

Embryologist's trigone:
The embryologist understands that the trigone does not end at the bladder neck. It continues as a midline longitudinal fold in the posterior wall of the prostatic urethra, the *urethral crest* or *verumontanum.* The urethral crest joins the small trigone of the colliculus seminalis, on the upper part of the colliculus seminalis, between the tiny openings of the ejaculatory ducts.

Embryologist's trigone - male

a) Trigone of the bladder.
b) Urethral crest in the prostatic urethra.
c) Trigone of the colliculus seminalis.

Gartner's ducts:

Gartner's ducts (vestigial mesonephric ducts) leave the upper 1/3rd of the anterolateral wall of the vagina, to enter the upper end of the posterior wall of the glandular urethra. The ducts descend in parallel on either side of the midline, behind the urethral crest of the glandular urethra and membranous urethra. The Gartner's ducts have tiny openings, on the posterior lip of the distal urethral orifice, anterior to the introitus of the vagina.

The introitus of the vagina and distal ends of the Gartner's ducts, open on a subtle projection in the posterior section of the vestibule, the *colliculus feminalis.* The introitus of the vagina and openings of Gartner's ducts on colliculus feminalis are analogous to the introitus of the vagina masculinus and openings of the ejaculatory ducts on *colliculus seminalis.*

Embryologist's trigone – female

a) Trigone of the bladder: base formed by ureteral orifices and interureteric ridge; apex at internal urethral orifice. Joins upper end of urethral crest.
b) Urethral crest in the glandular urethra and membranous urethra; lower end joins apex of trigone of colliculus feminalis.
c) Trigone of the colliculus feminalis: bases between openings of Gartner's ducts; apex at distal urethral orifice. Joins lower end of urethral crest in membranous urethra.

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