

# Female Genital Development

Richard Schlussel M.D.

Assistant Professor

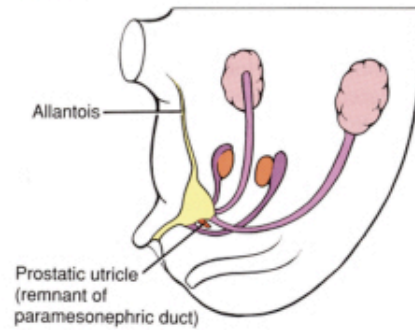
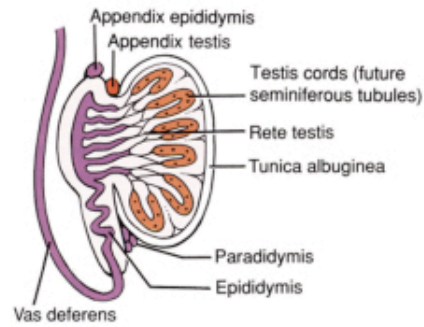
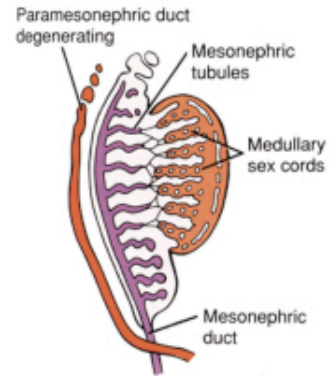
Department of Urology

Columbia University

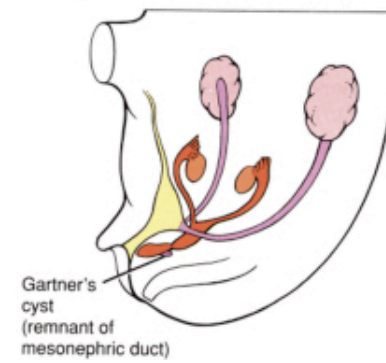
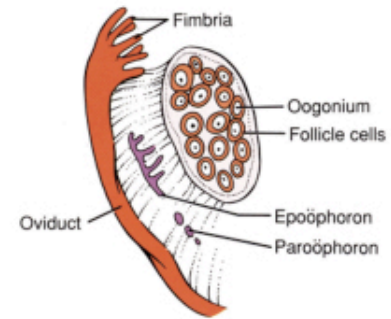
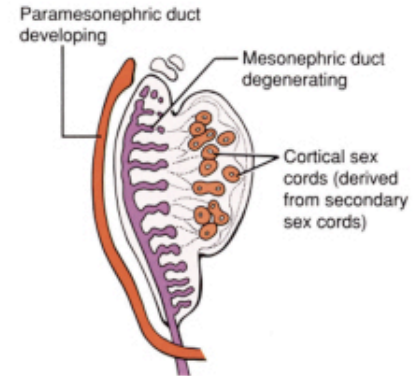


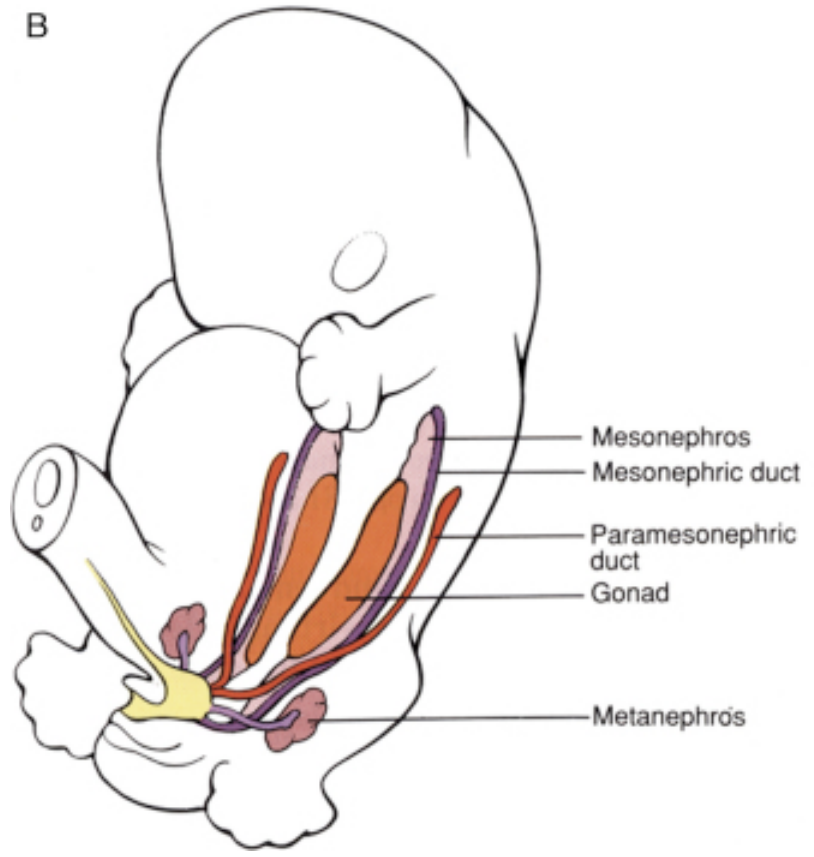
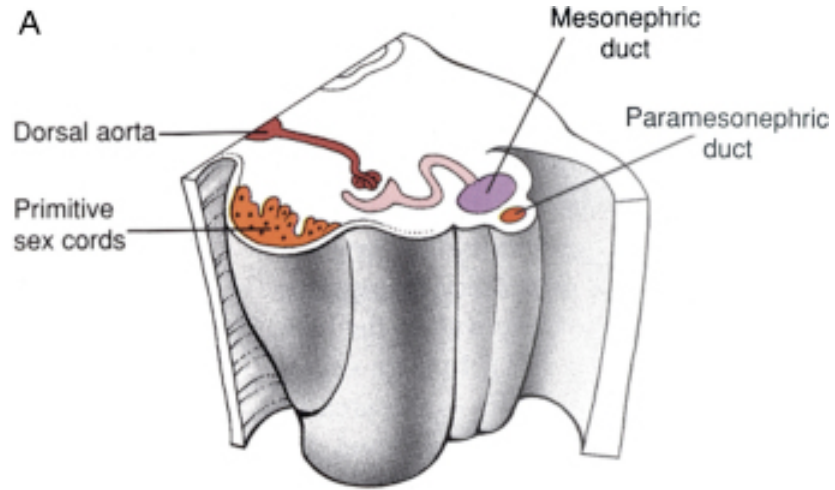
- Normal development
- Duplication
- Agenesis
- UG Sinus
- Imperforate hymen
- CAH

**Male**

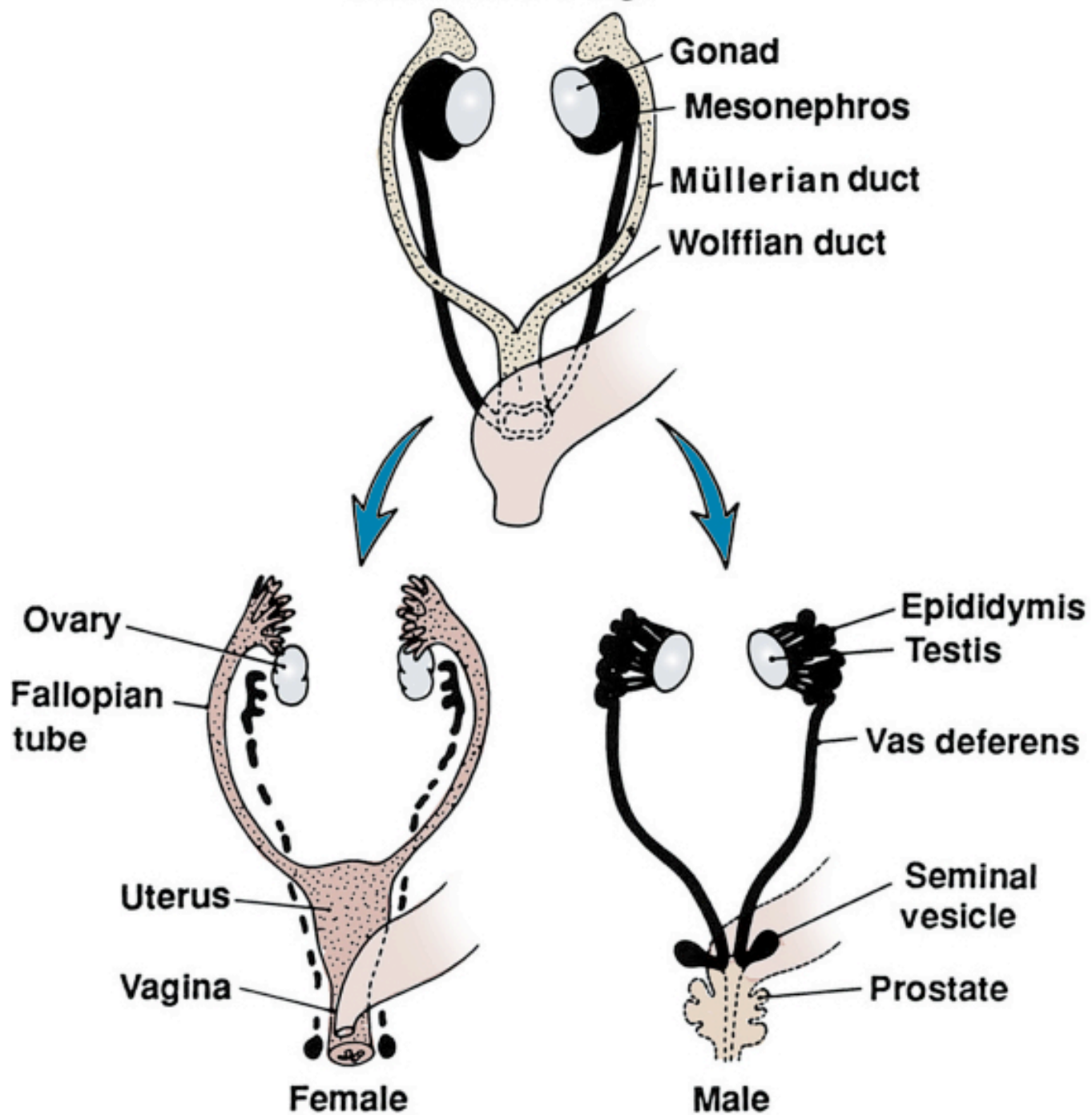


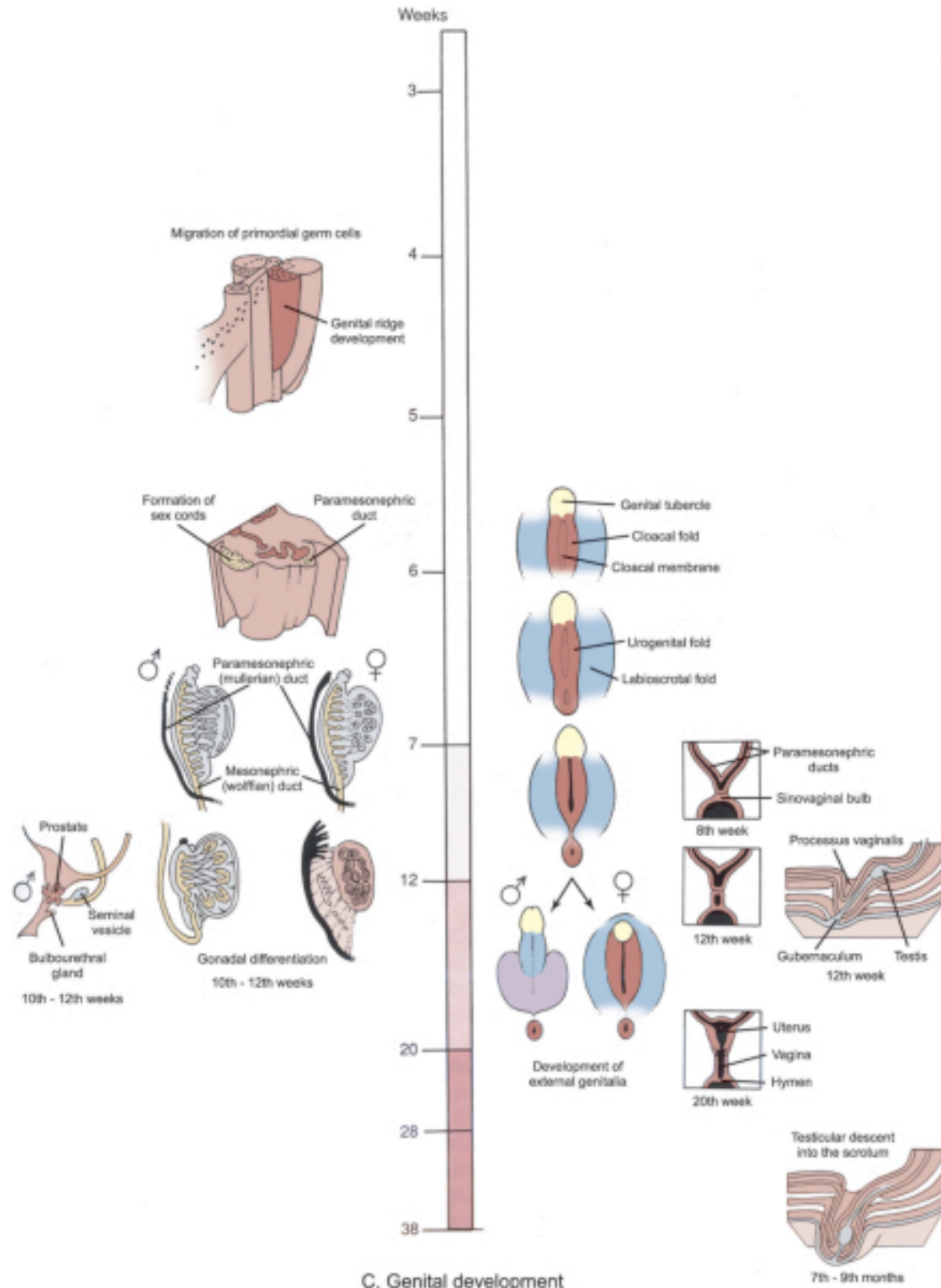
**Female**





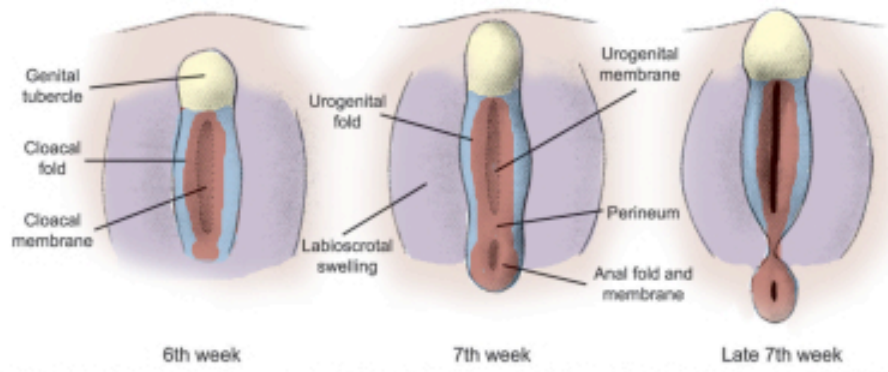
**Indifferent stage**



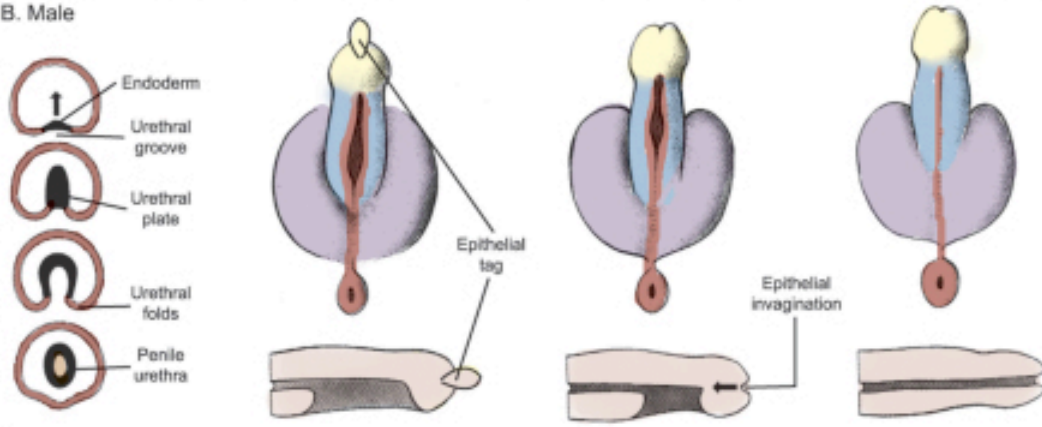


C. Genital development

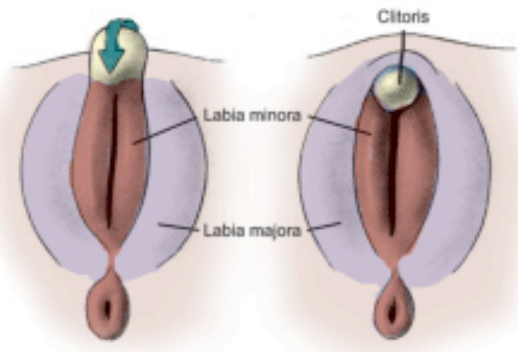
A. Indifferent stage

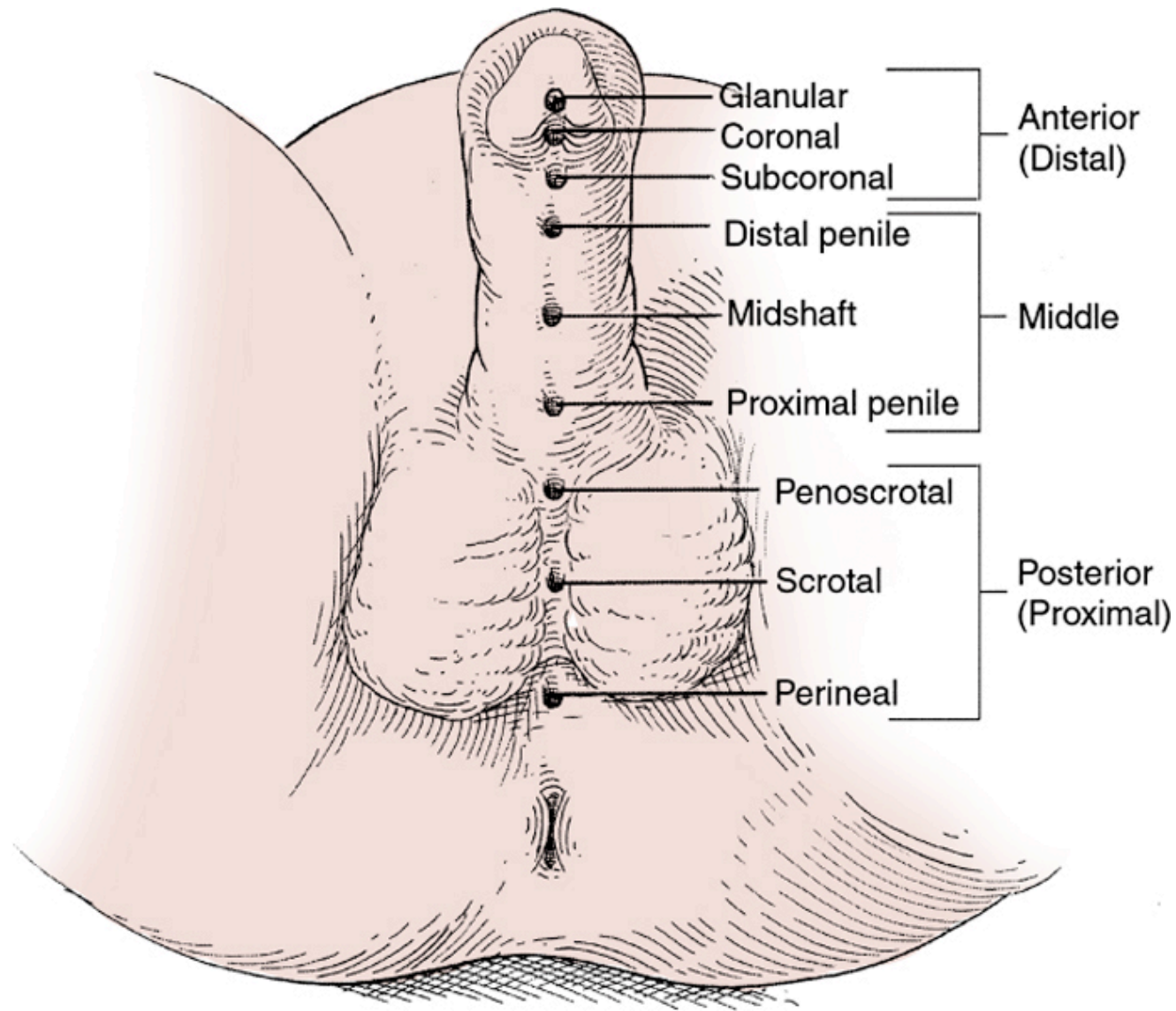


B. Male



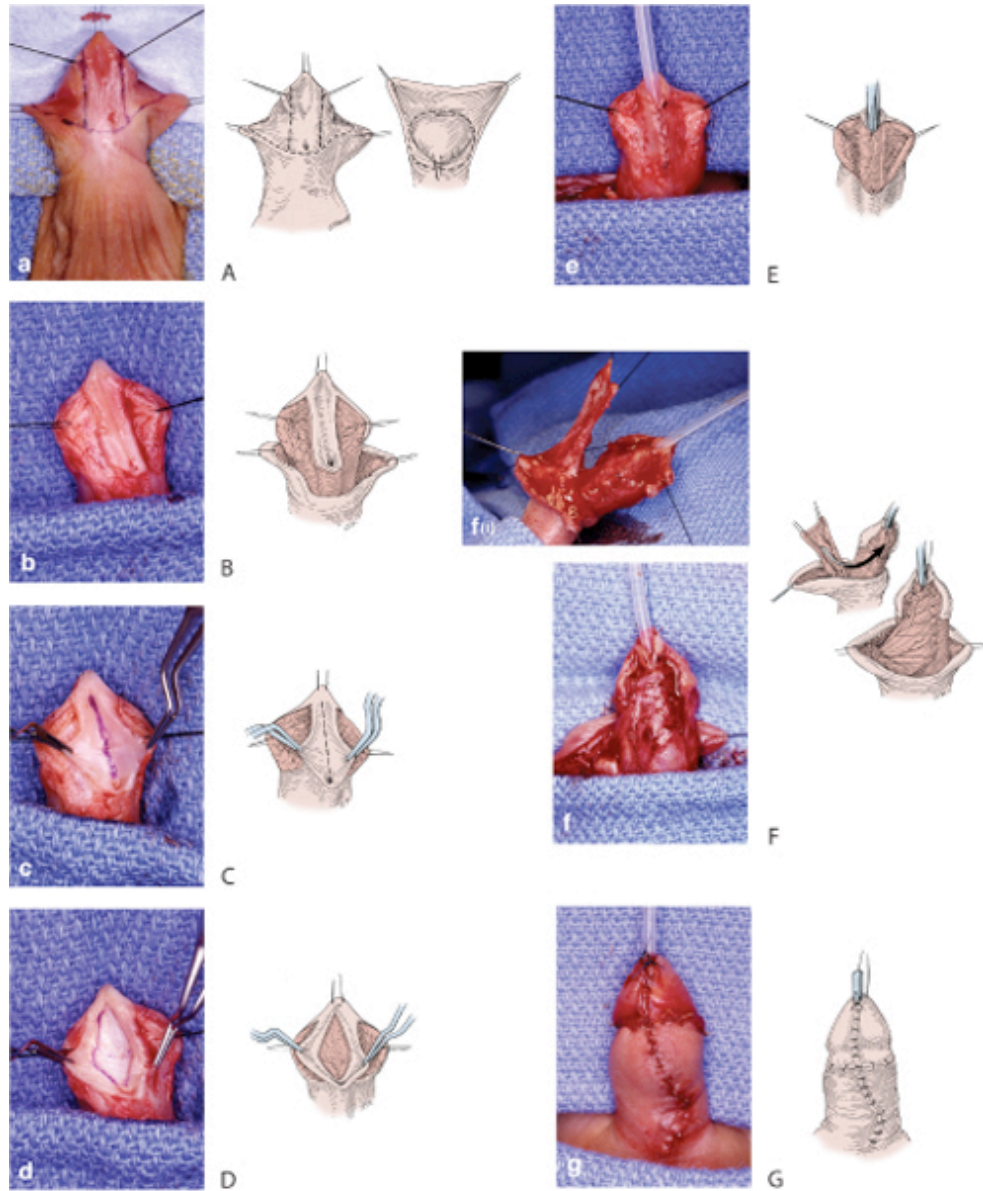
C. Female





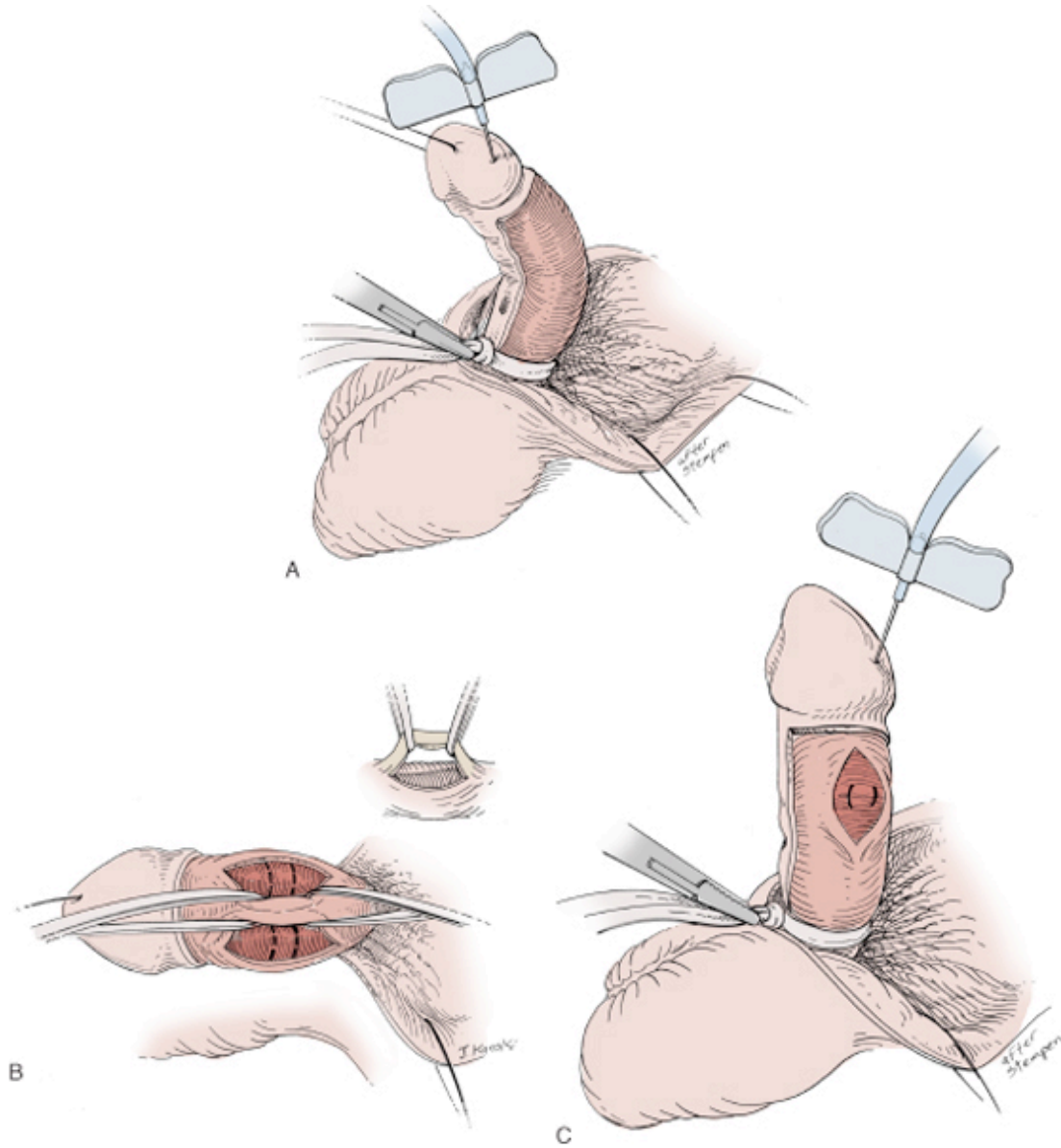
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# Hypospadias



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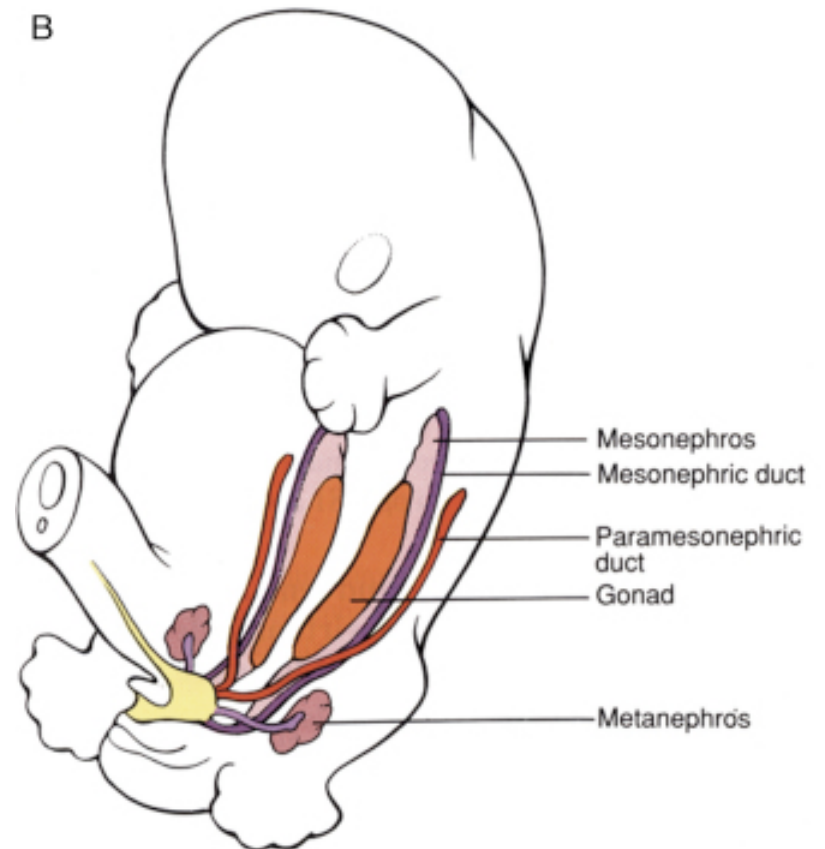
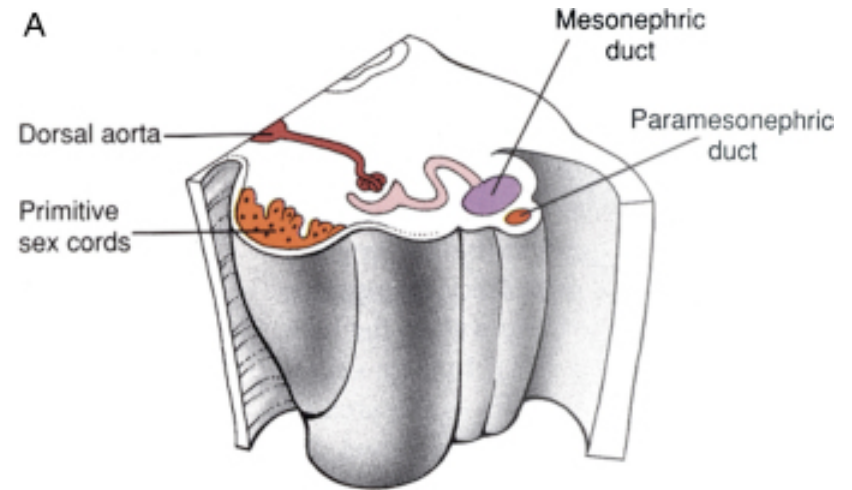
## Hypospadias repair

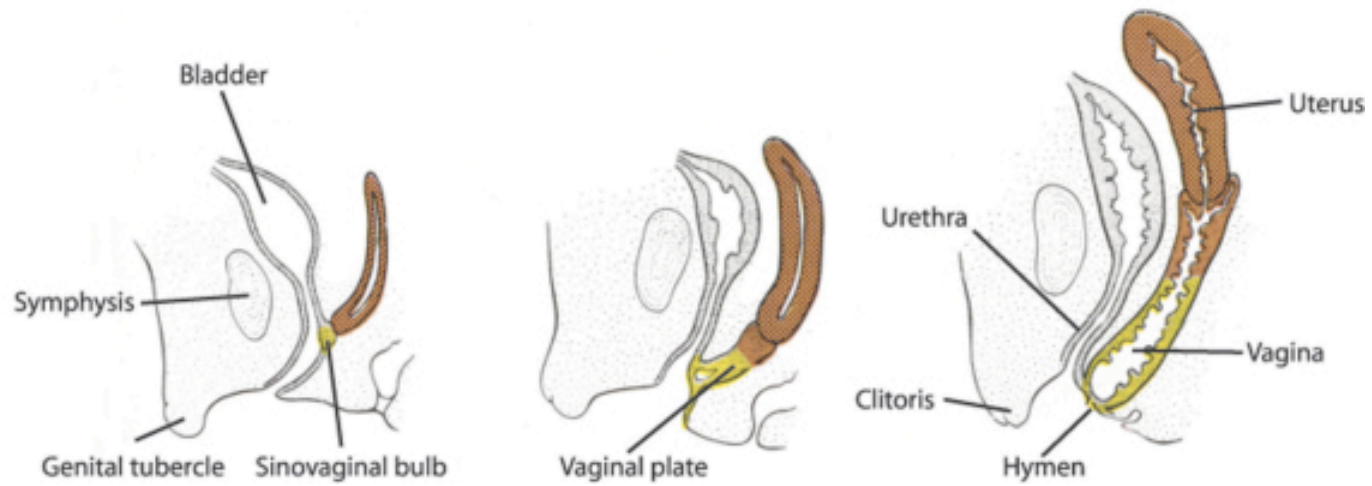
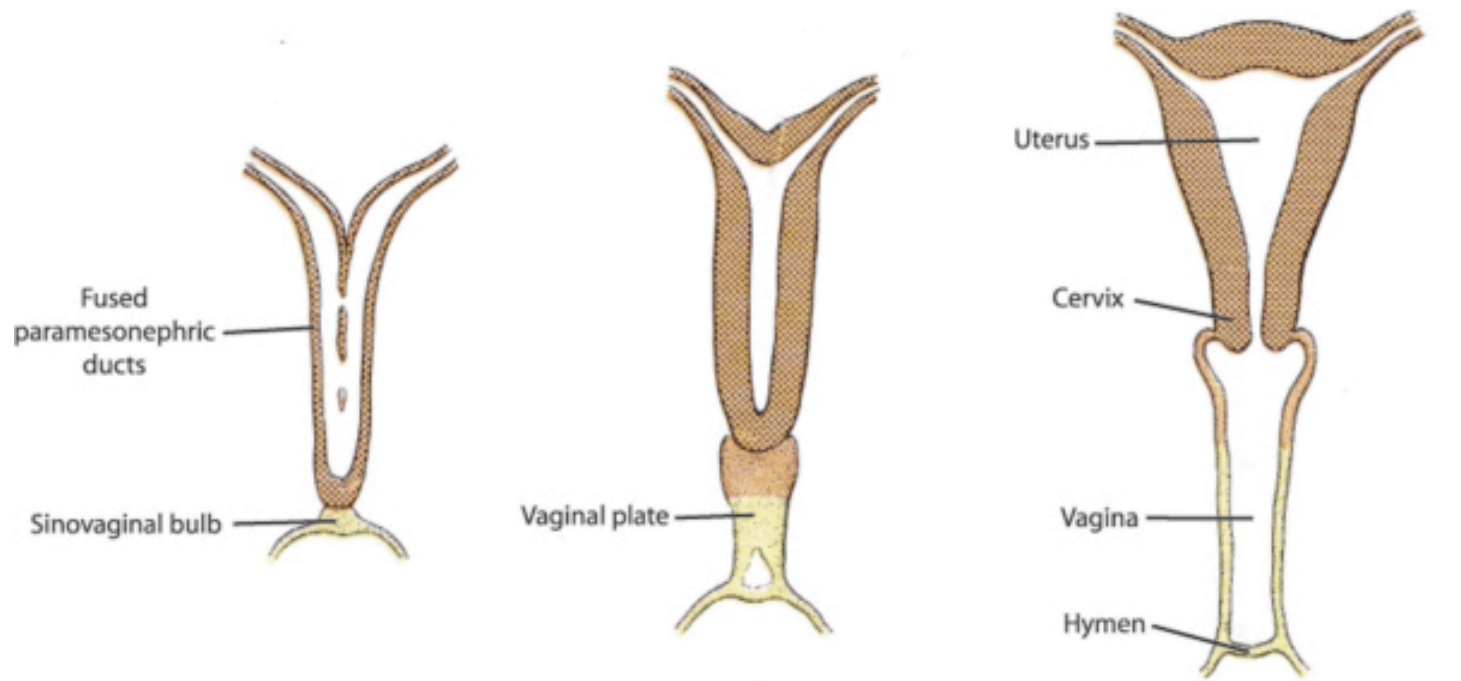


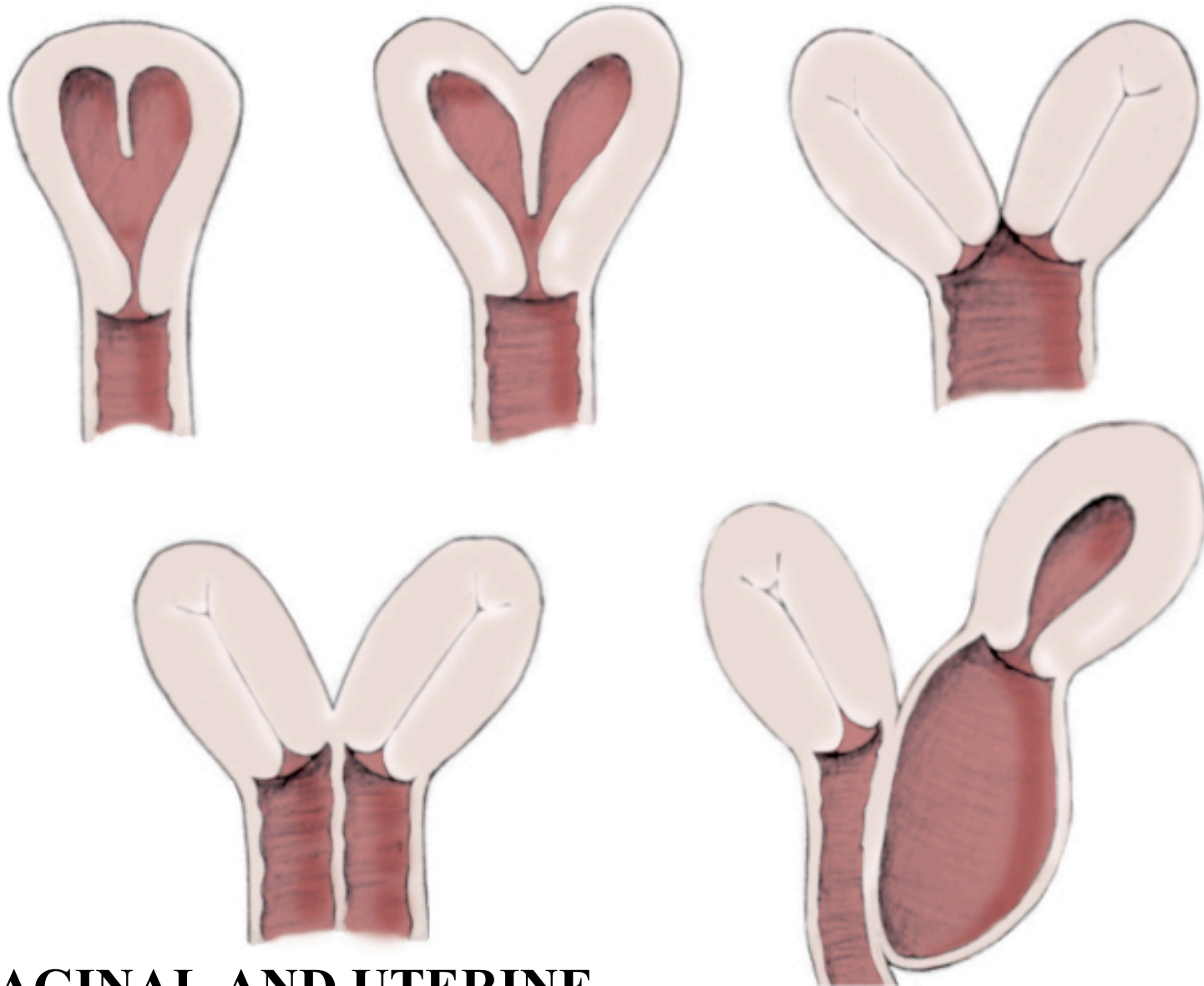
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## Hypospadias repair

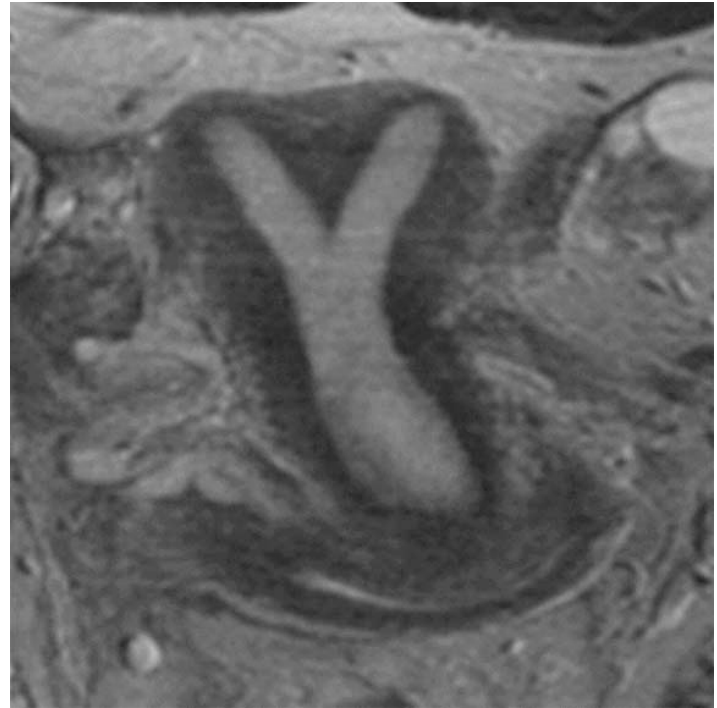
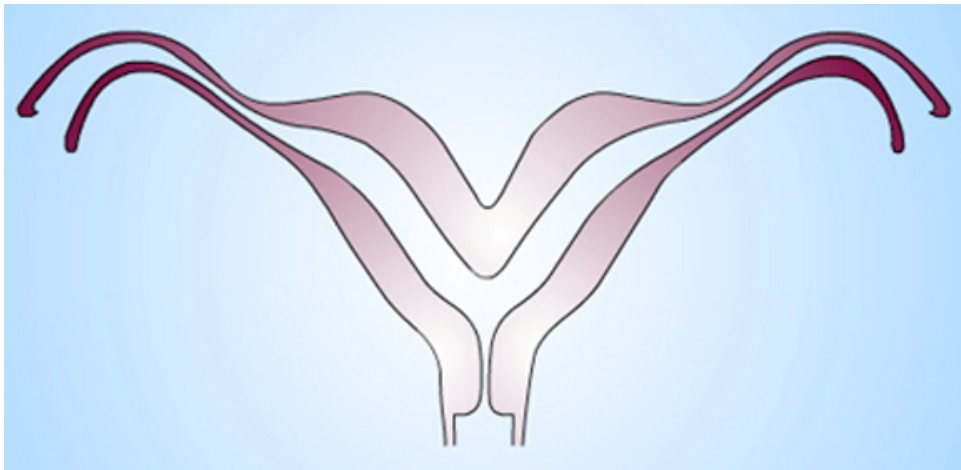
- Paramesonephric duct
  - A.K.A. Mullerian Duct
  - Becomes future
    - Fallopian tubes
    - Uterus
    - Upper 2/3 vagina



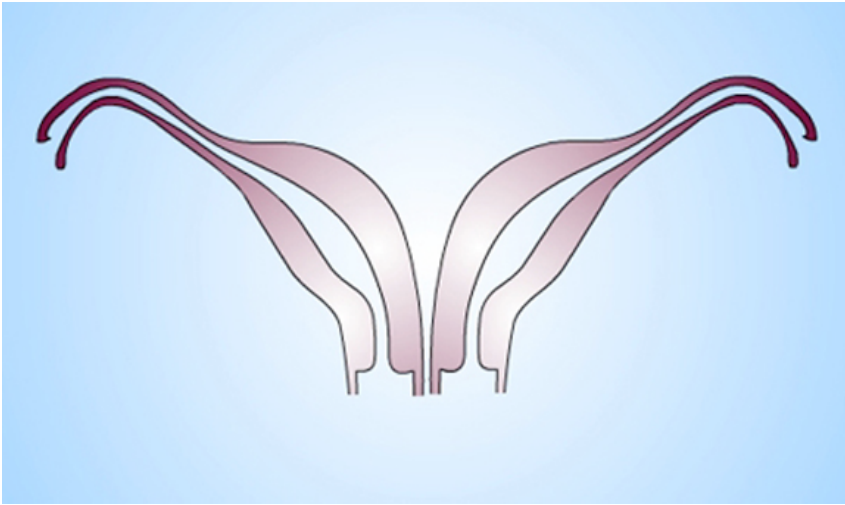




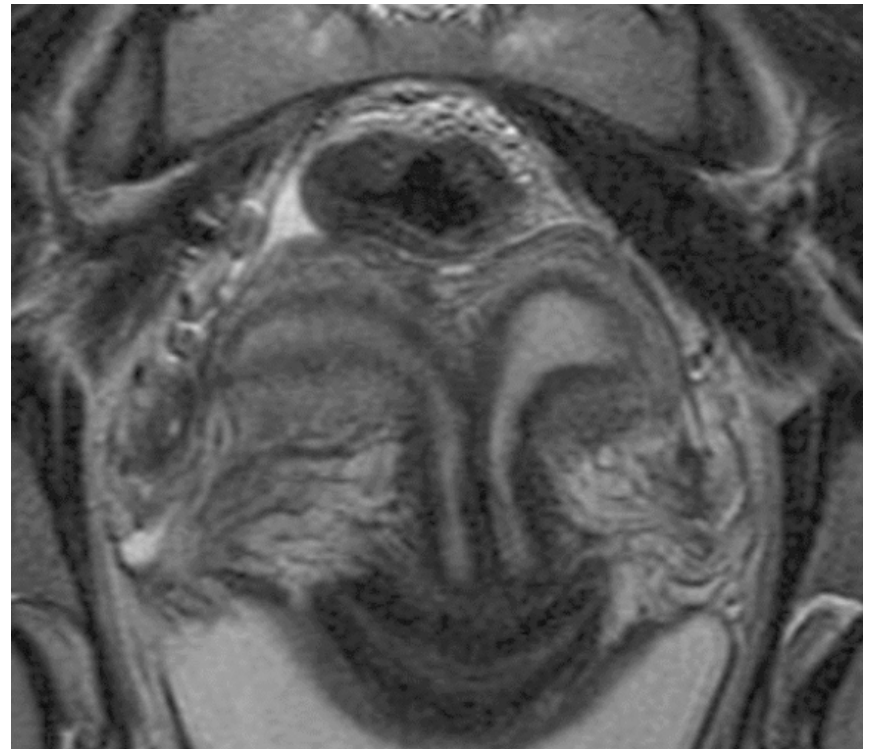
**VAGINAL AND UTERINE  
DUPLICATION**

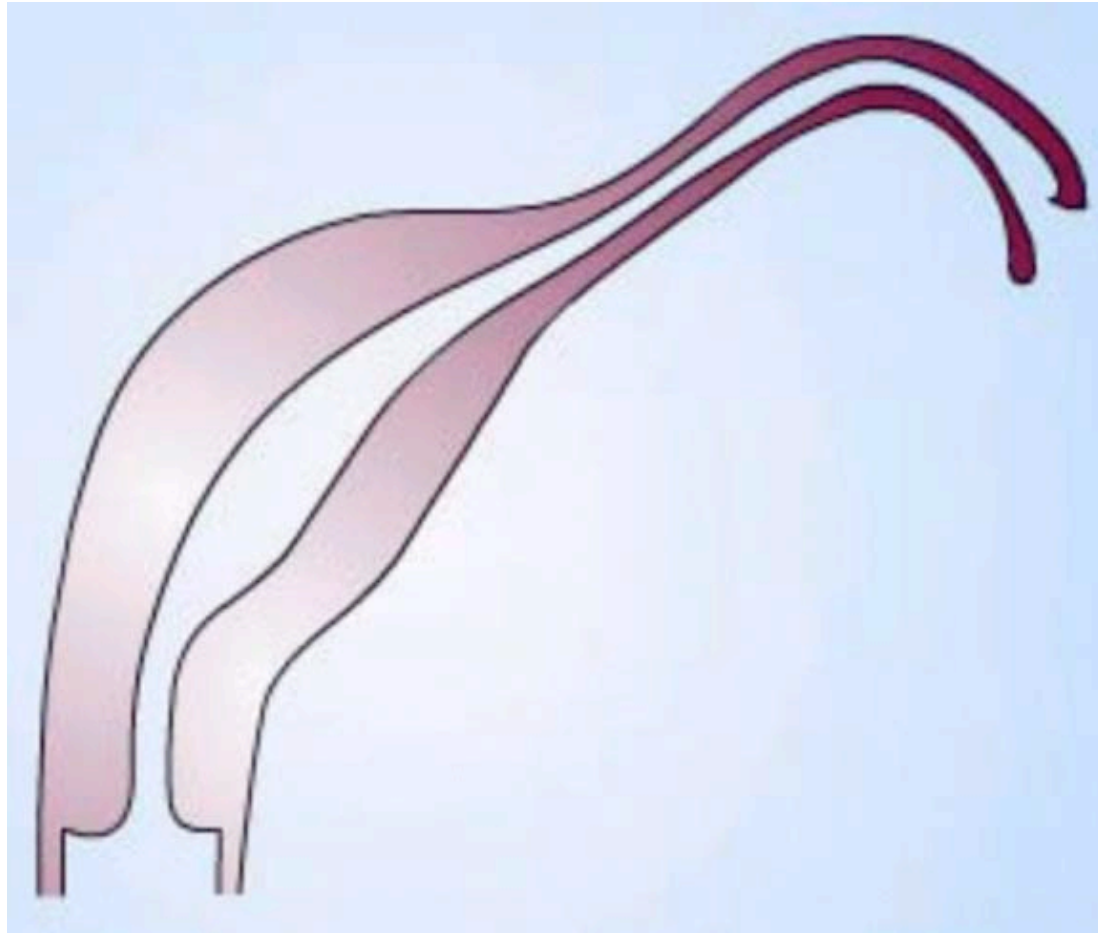


**Bicornuate Uterus**



**Didelphys uterus**



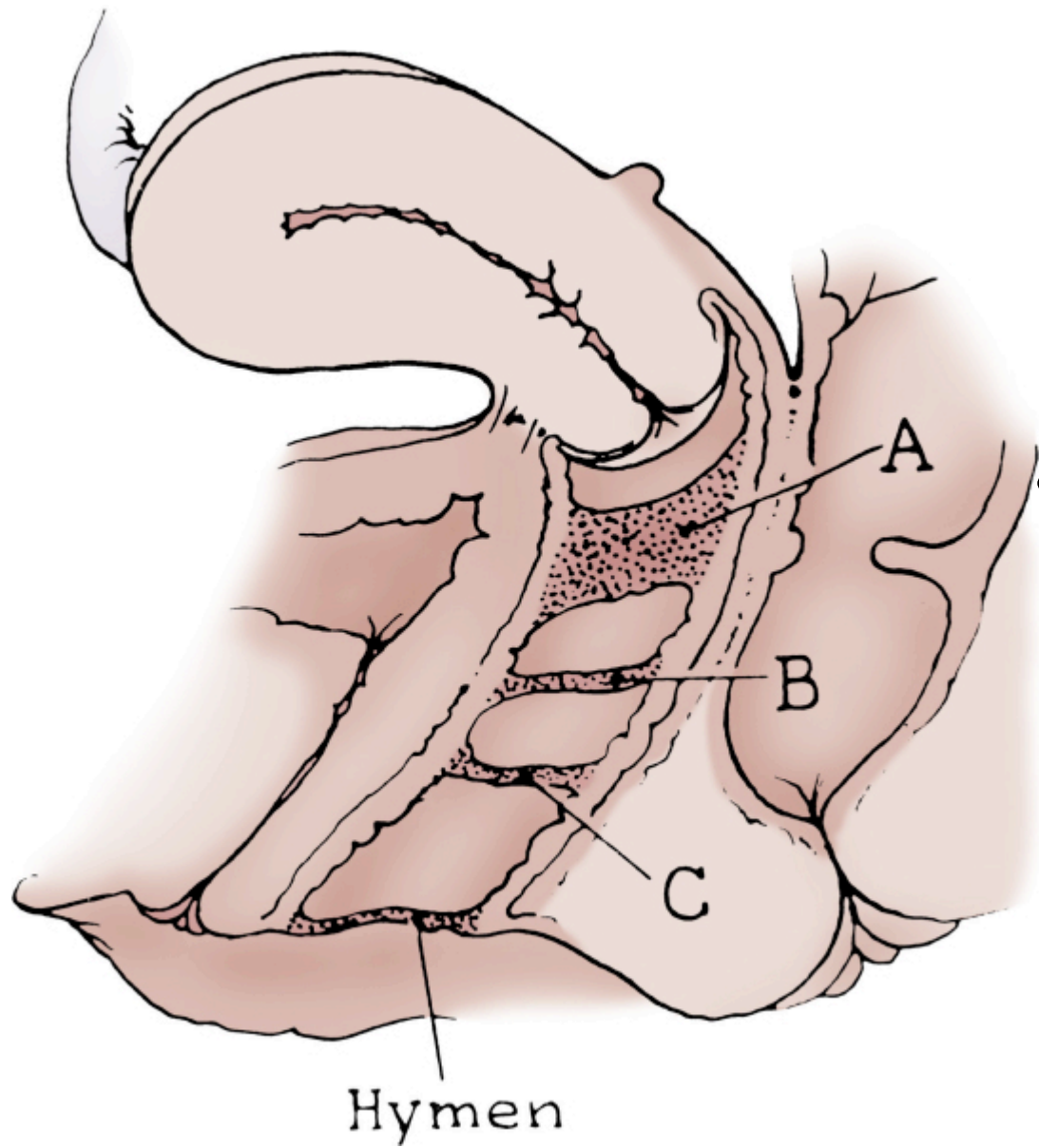


**Unicornuate Uterus**

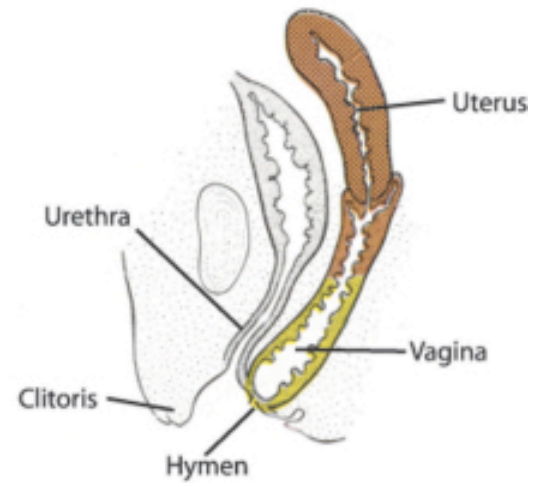
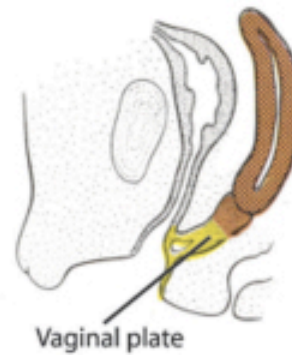
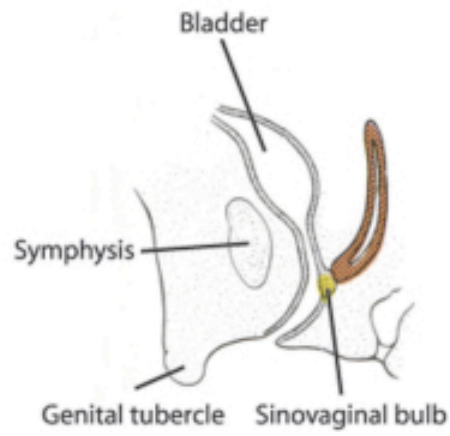
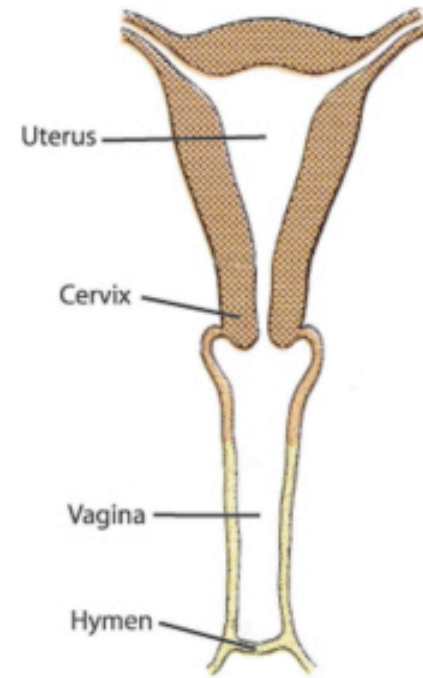
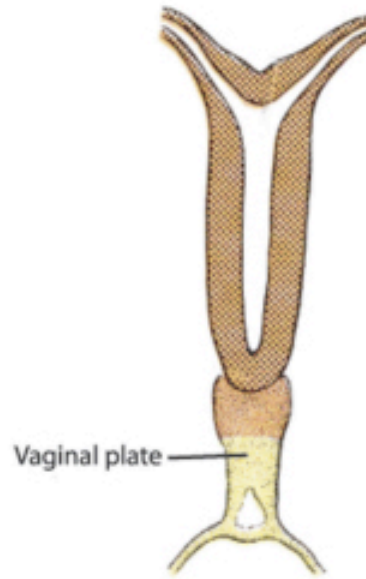
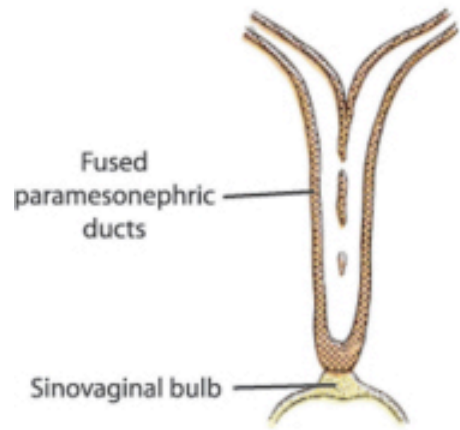


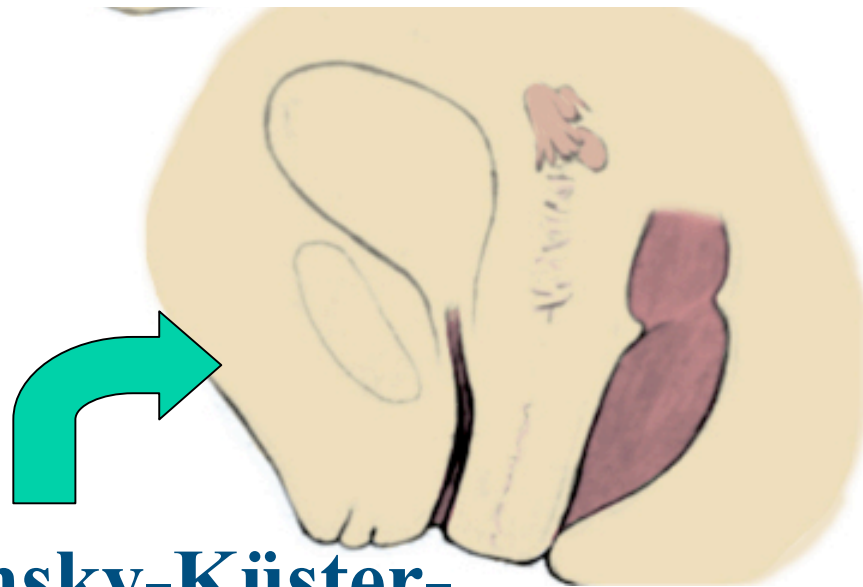
- **Symptom**
  - **Blood persists despite tampon during menses**

## **Complete Vaginal Duplication**



- **Symptom**
  - **Upper vagina fills with blood during menses**

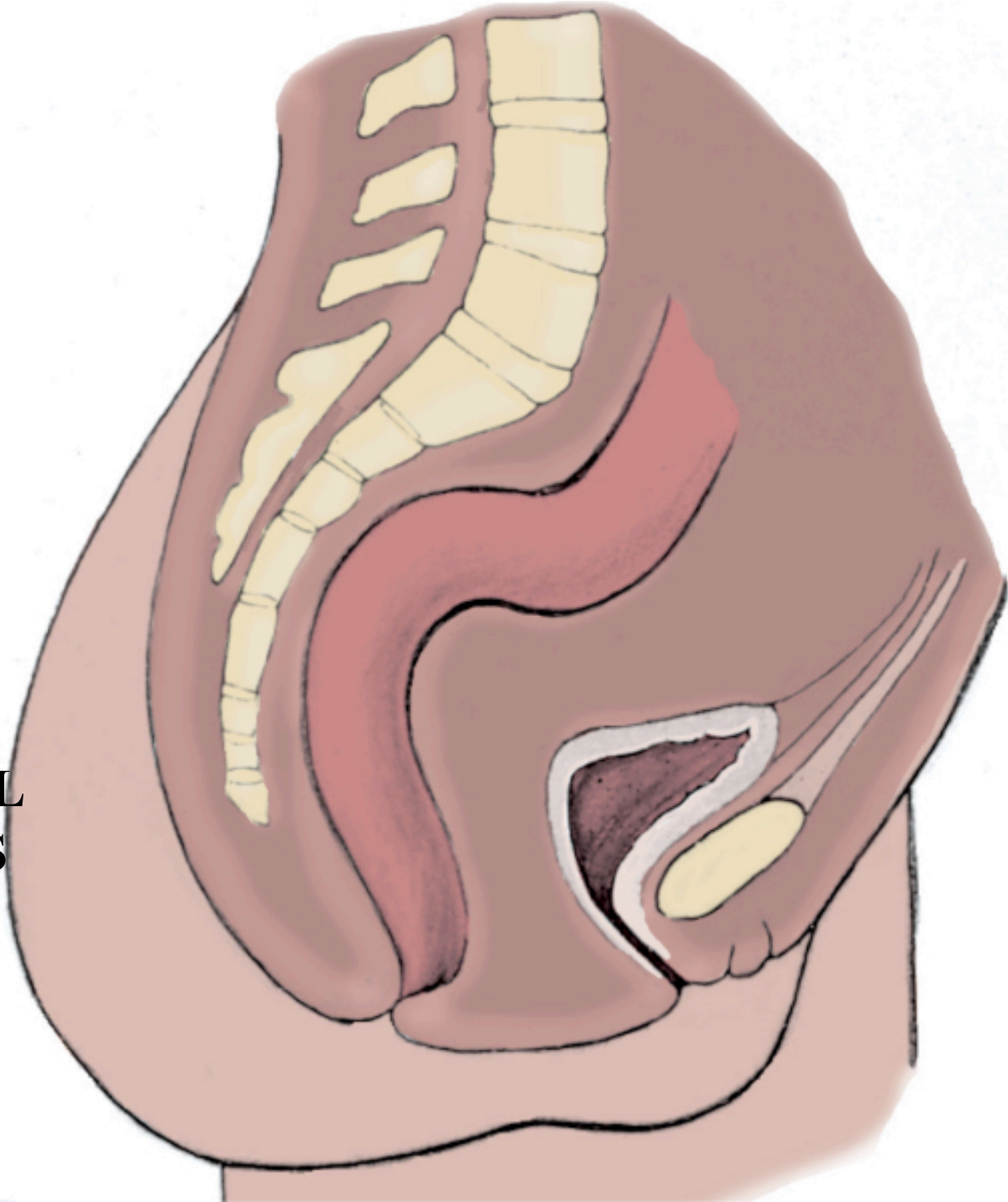


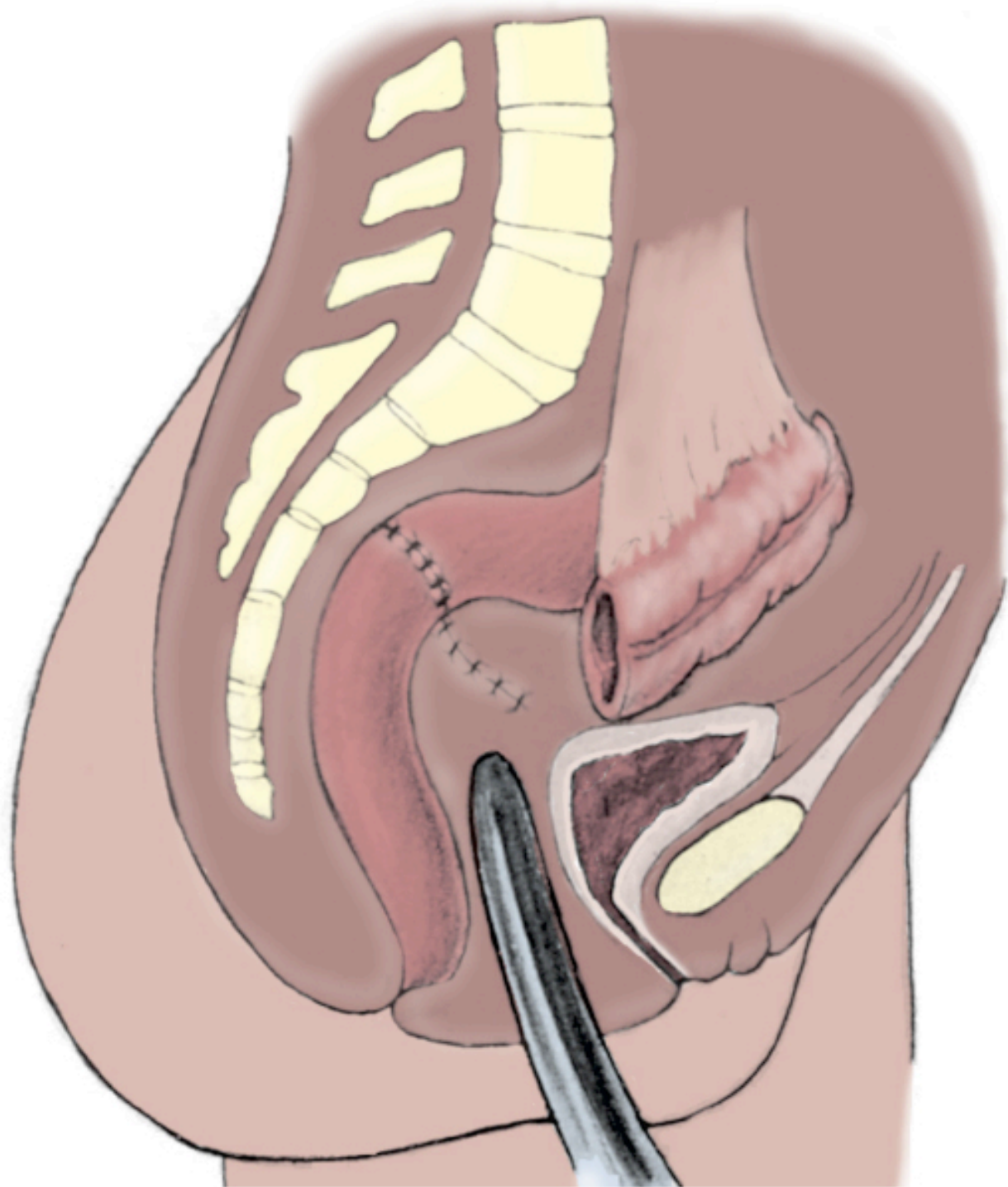


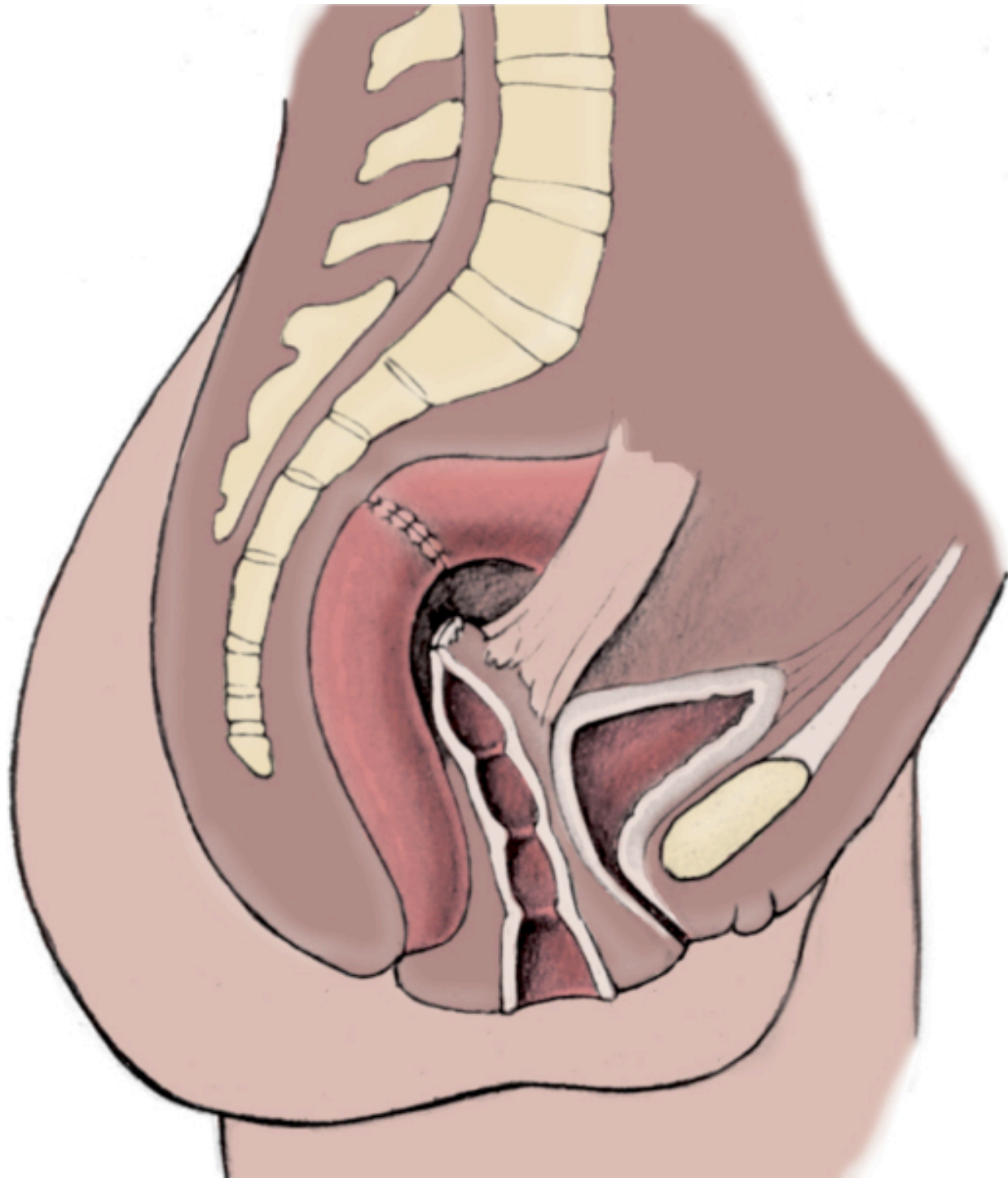
**1 in 5,000  
births**

**Mayer-Rokitansky-Küster-  
Hauser Syndrome**

**VAGINAL  
AGENESIS**



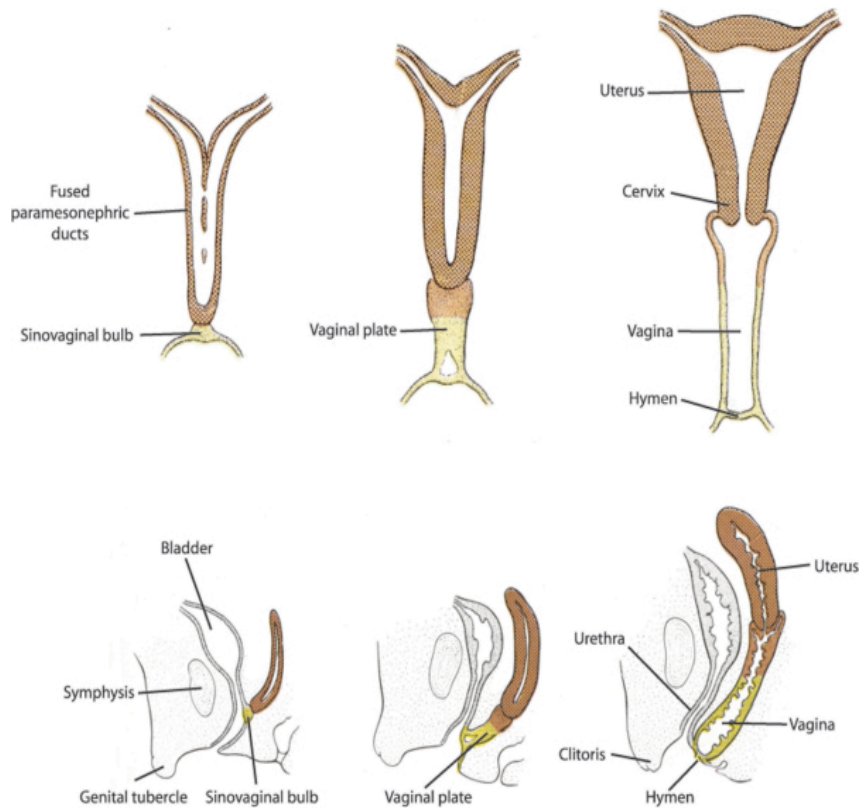




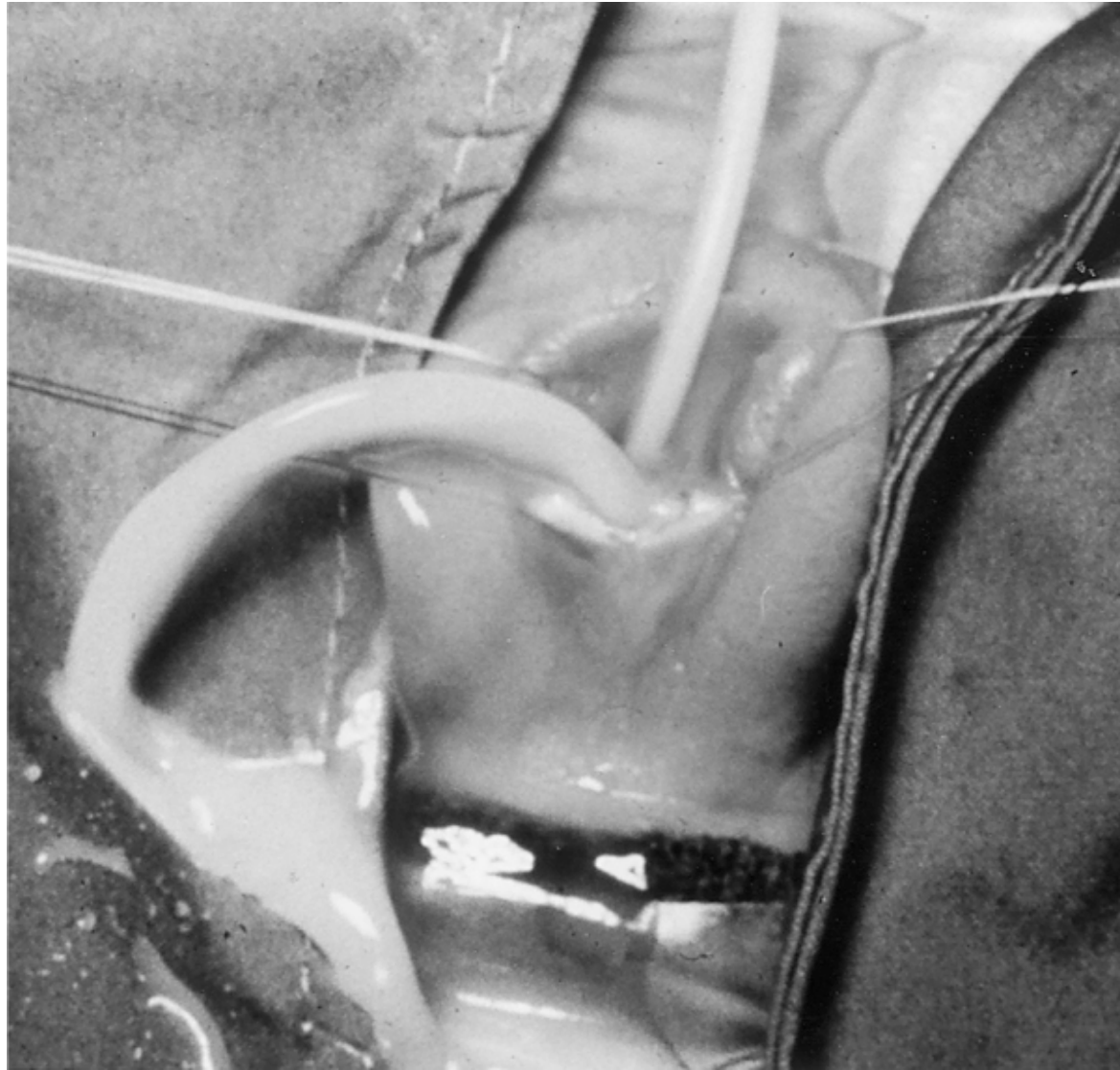


**Normal Hymenal Ring**

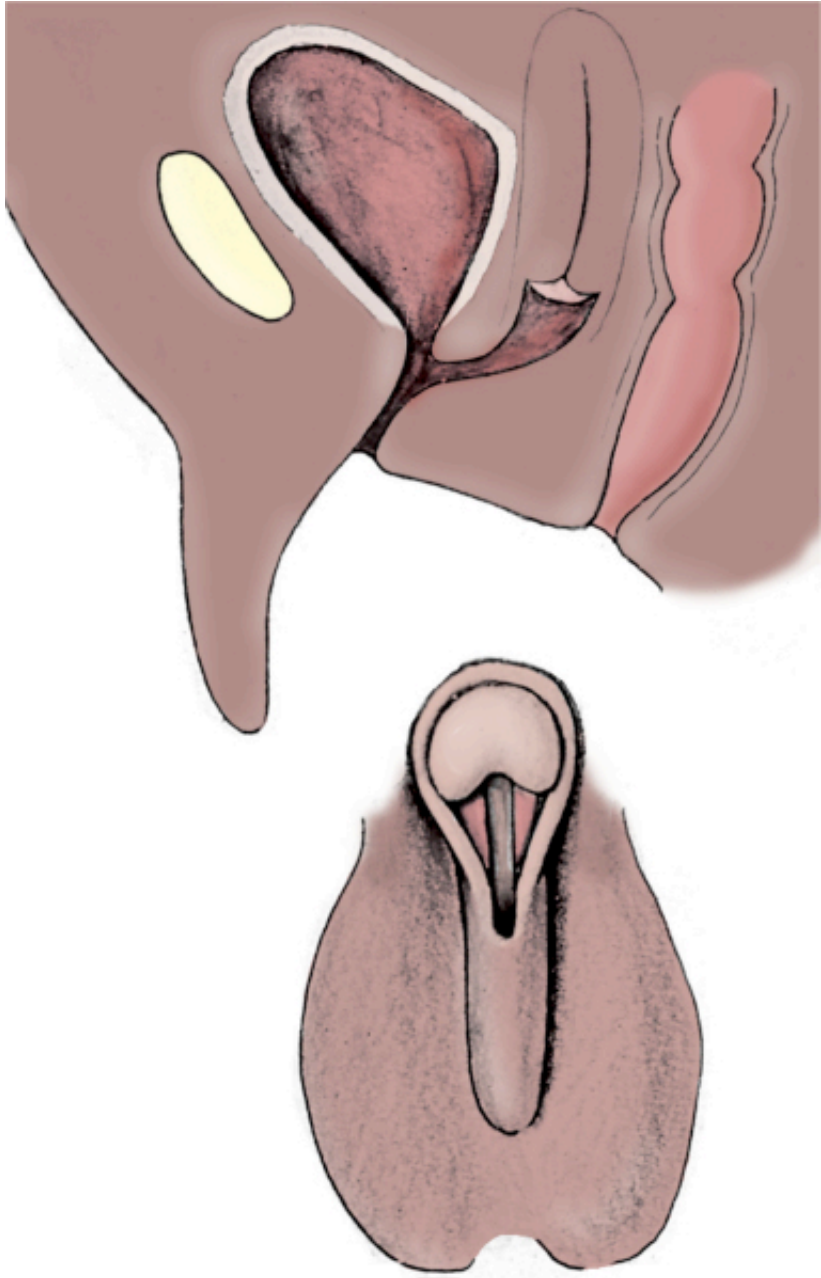
# Imperforate hymen



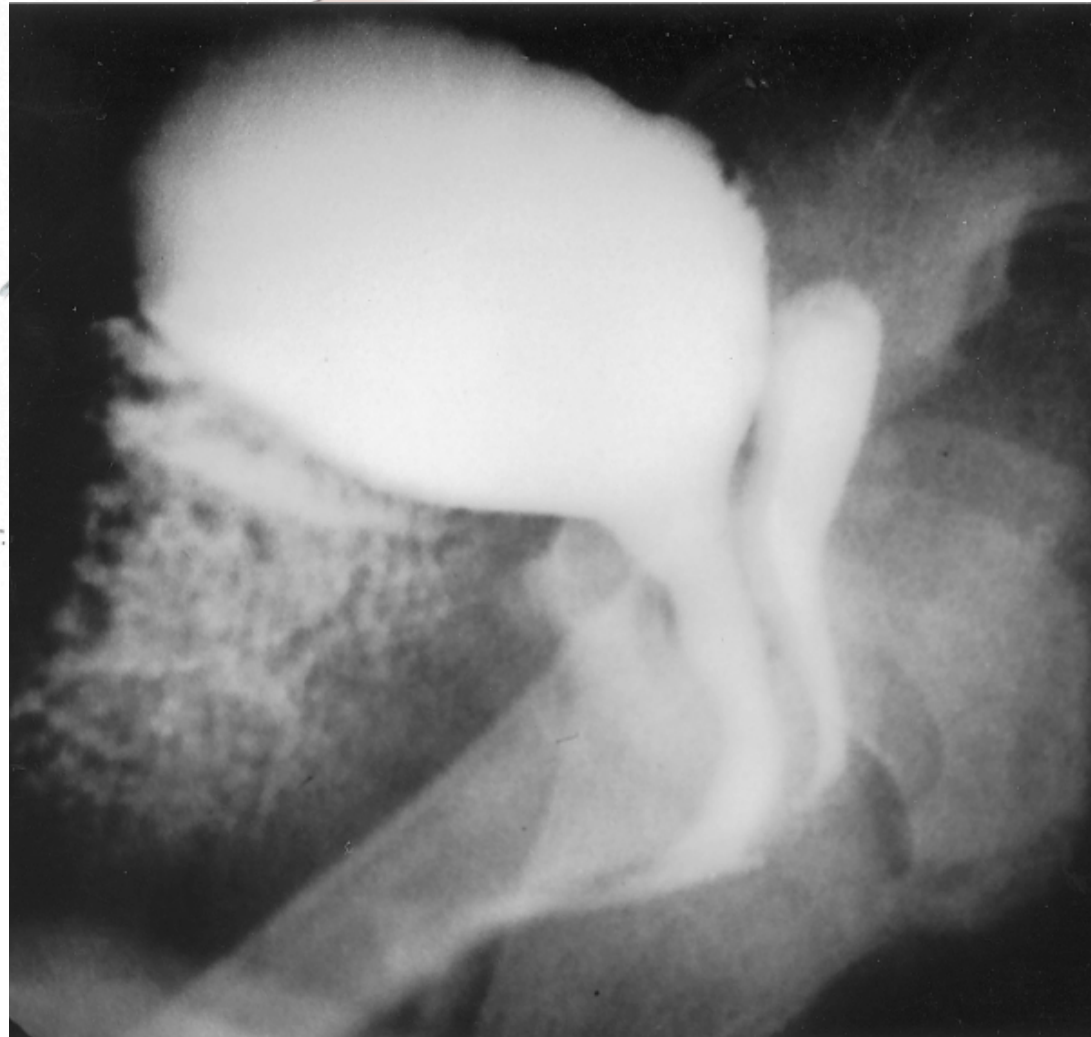
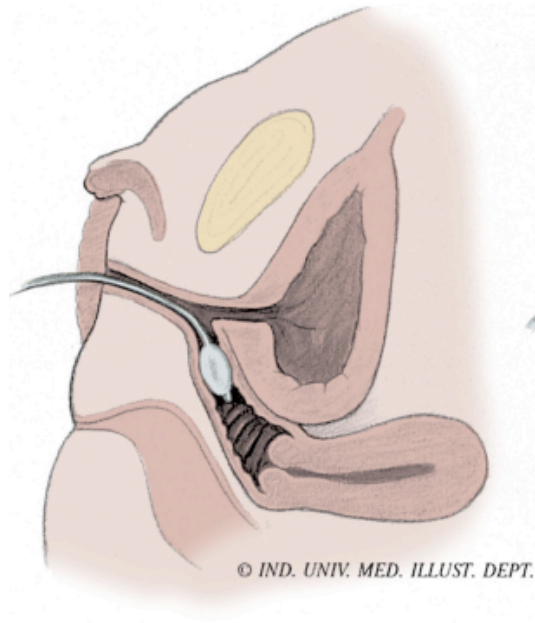
**Mucous due to maternal hormones**



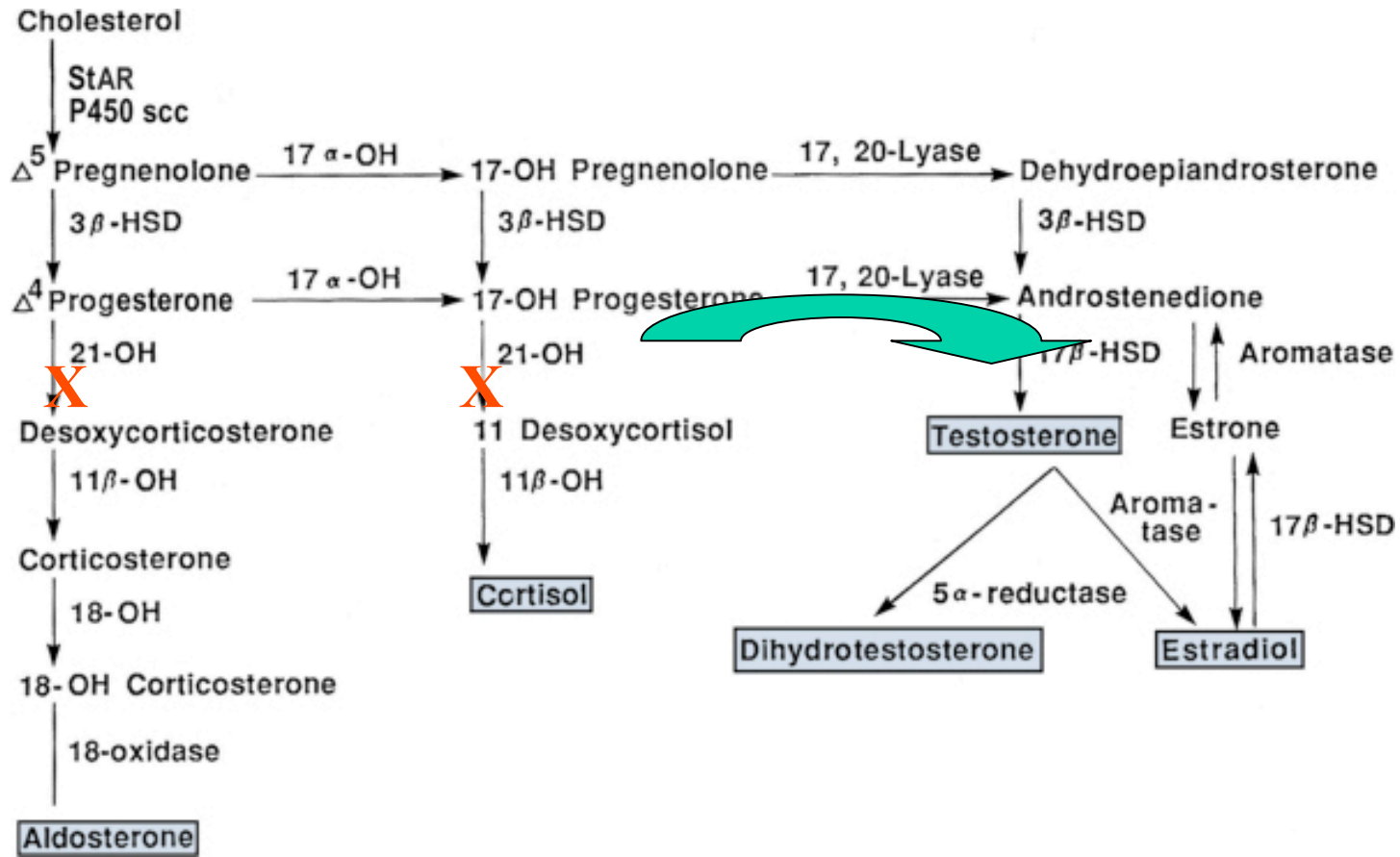
Intra-op drainage of imperf hymen



**UROGENITAL SINUS**



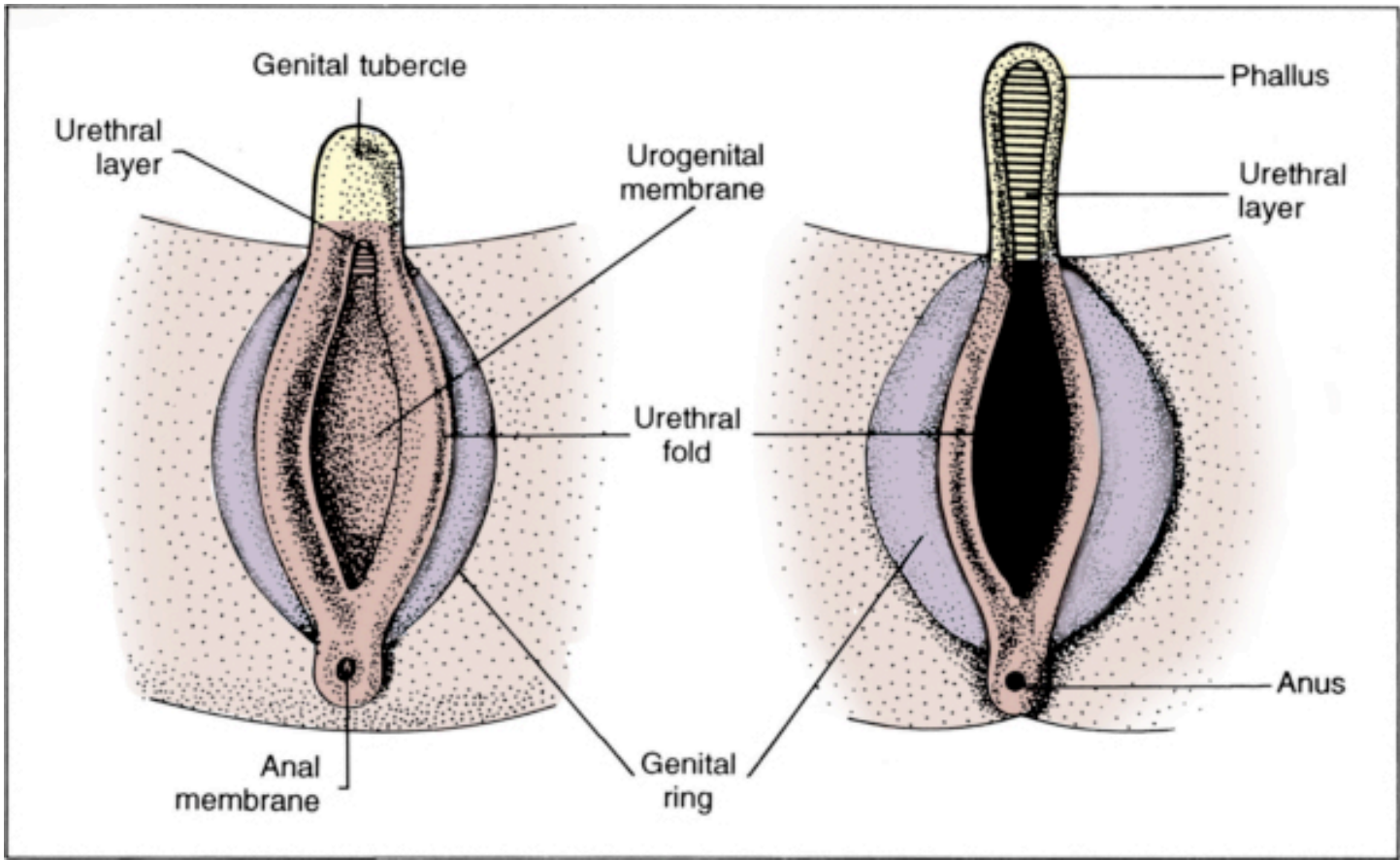
## UROGENITAL SINUS

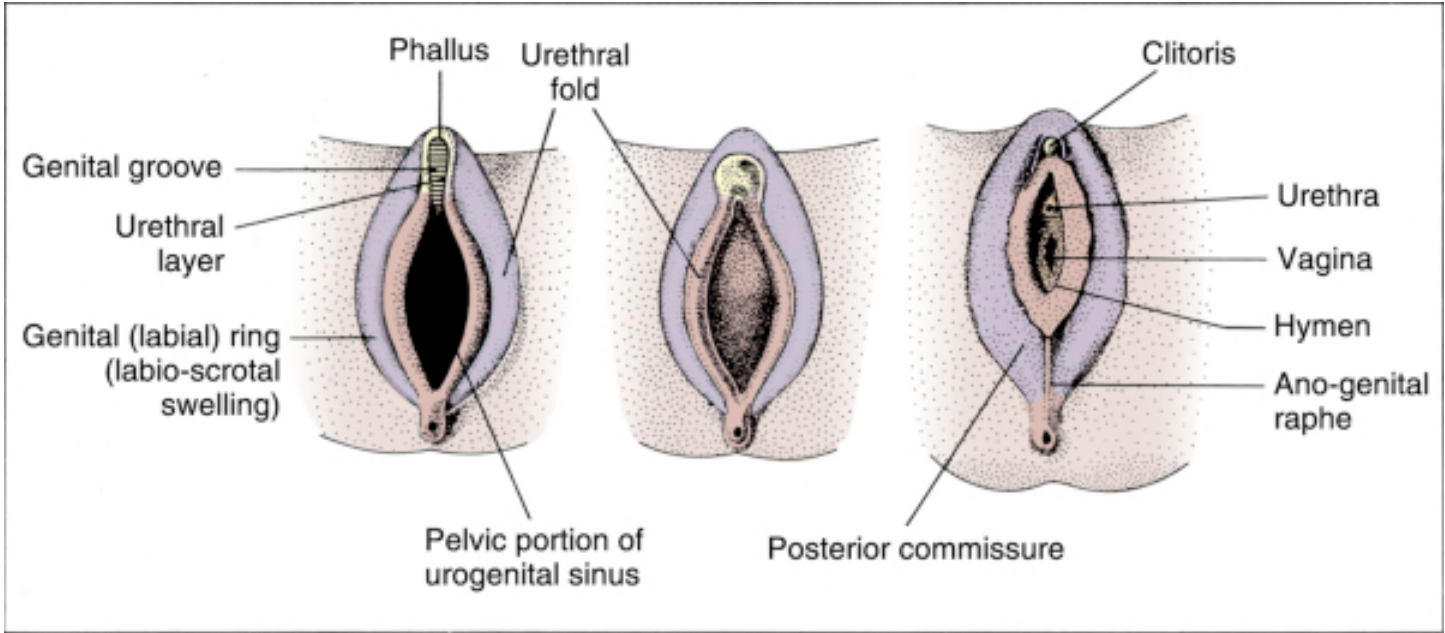


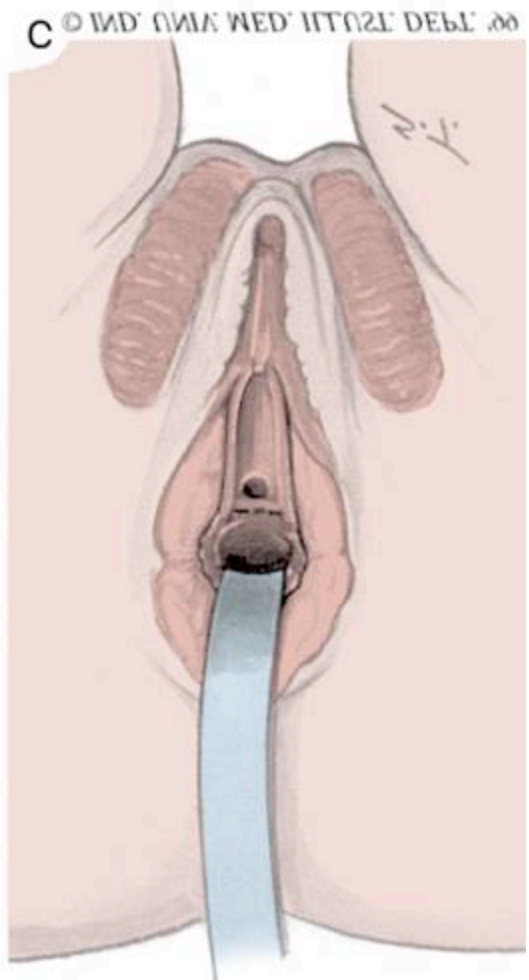
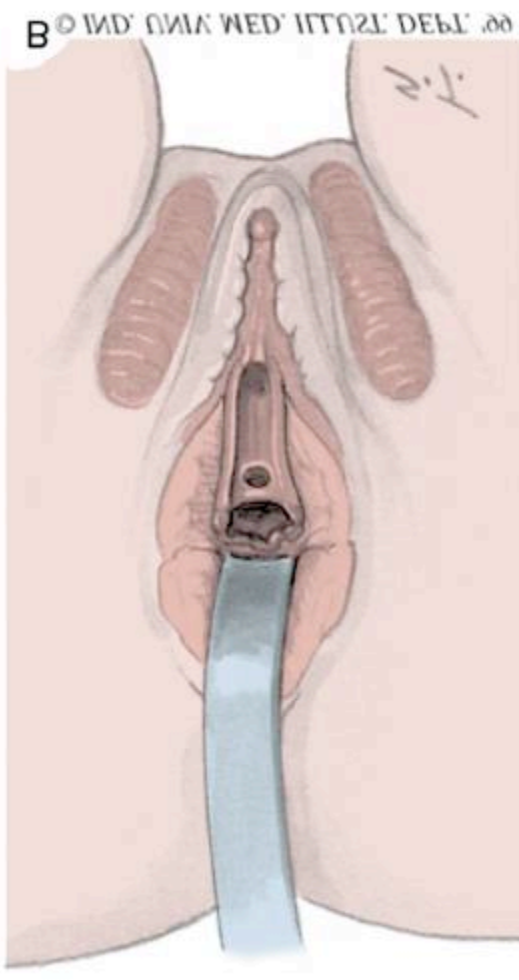
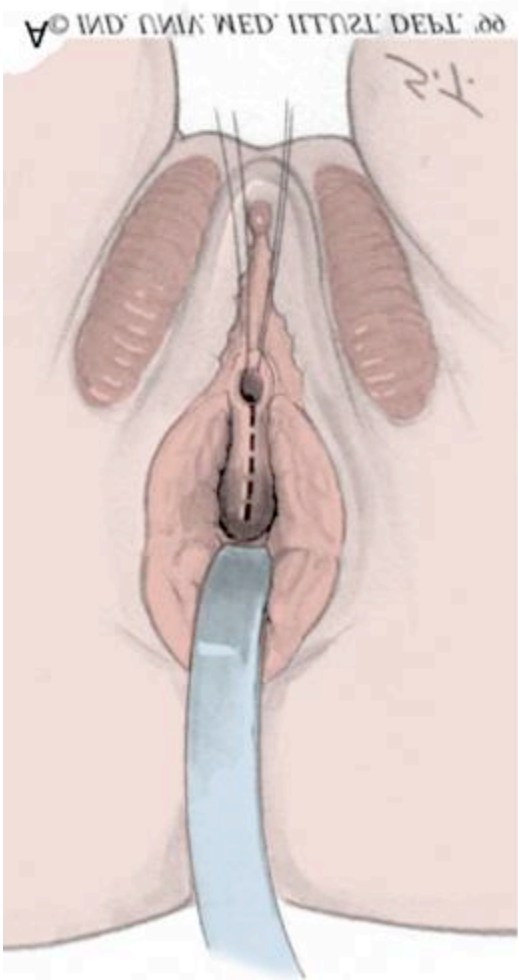
## CONGENITAL ADRENAL HYPERPLASIA (CAH)

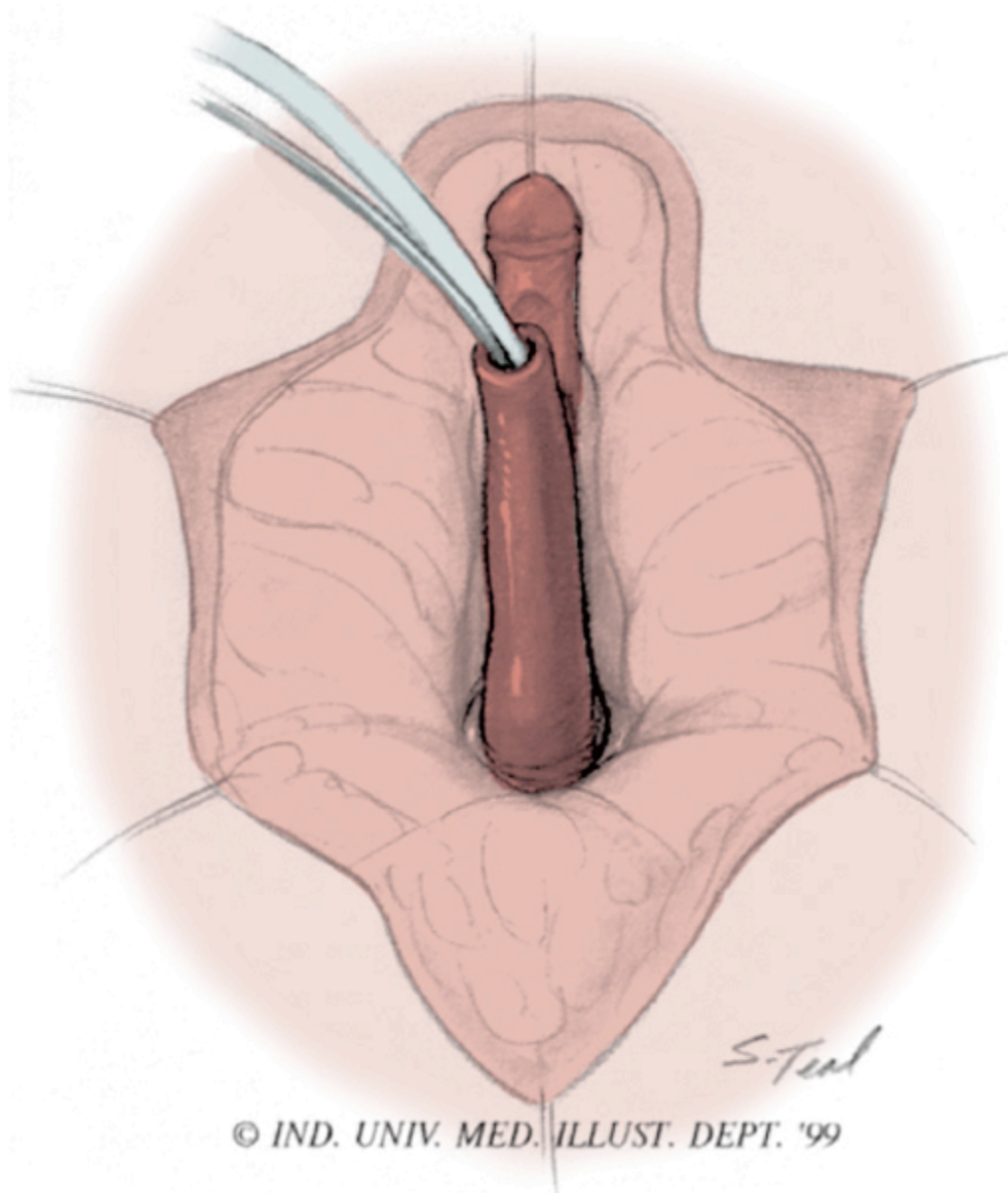


**CAH 46 XX**



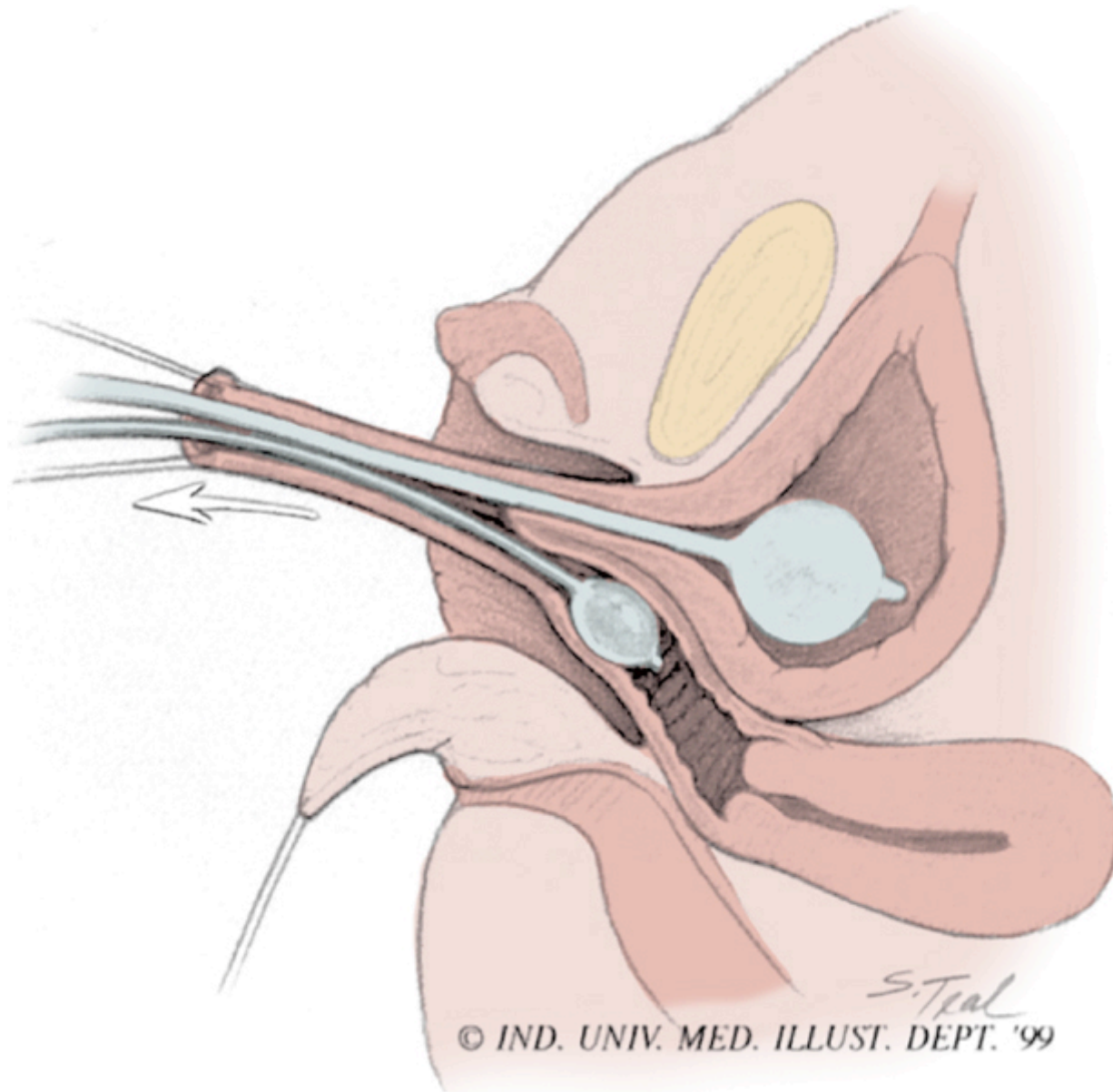




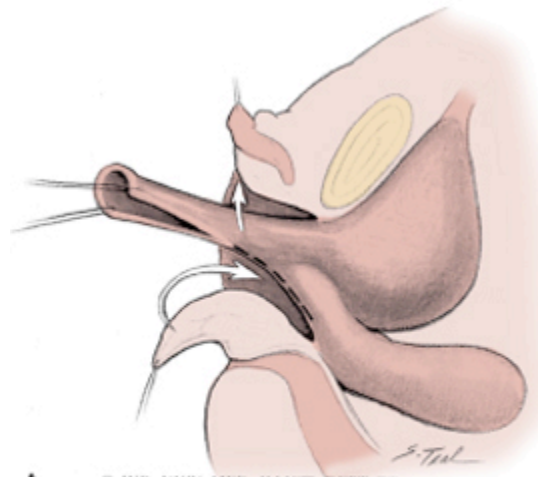


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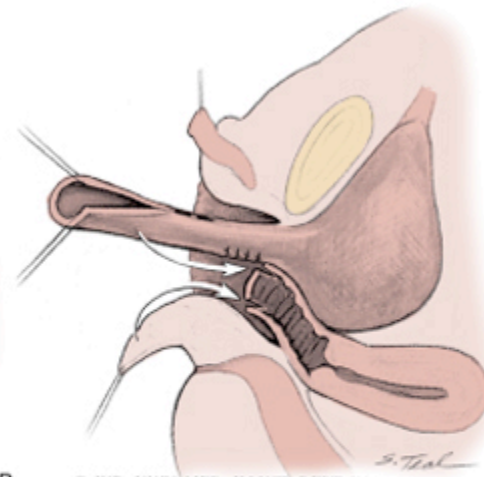
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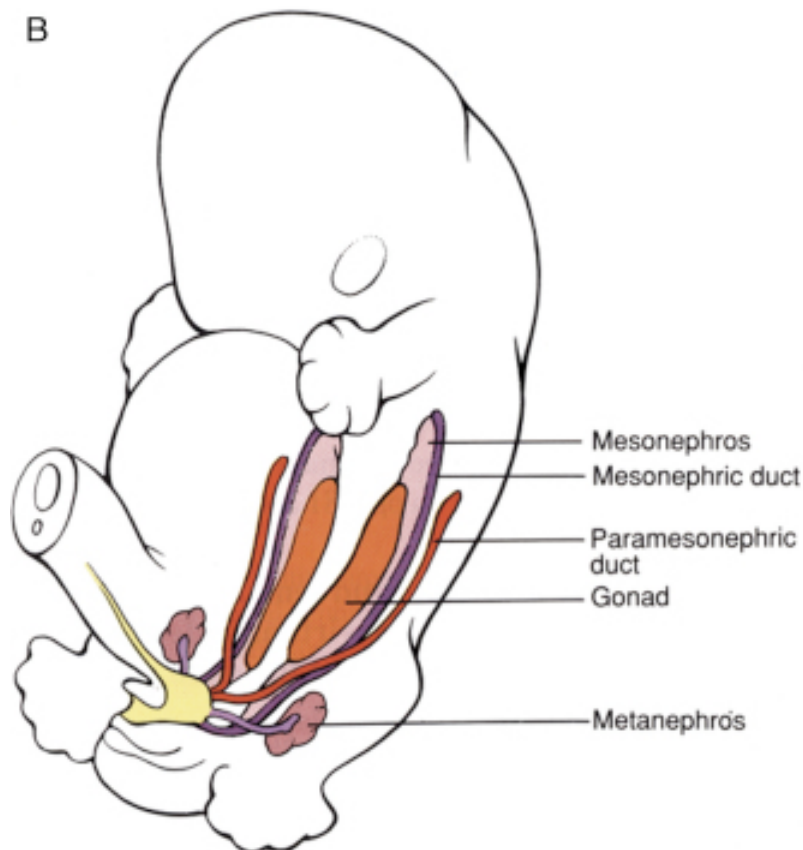
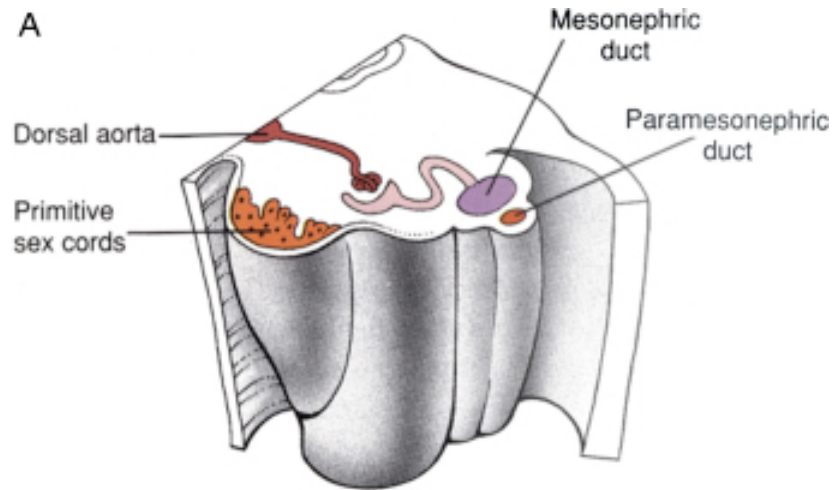
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C



- **Association with Urinary Tract Anomalies**
  - **Renal agenesis**
  - **Ectopic ureters**