**Objectives**

- Summarize techniques used to decrease anxiety in the pediatric patient.
- Compare the normal pediatric uterine and ovary size and appearance to the adult pelvic organs.
- Recognize malignant and benign masses of the bladder, uterus, and ovaries.
- Explain the causes of gonadal dysgenesis and ambiguous genitalia.
- Relate precocious puberty to hormonal and pathologic origins.

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**Objectives - continued**

- Classify the sonographic findings of hydrocolpos, hematoclesiop, hydrometra, hematometra, hydrometrocolpos, and hematometrocolpos.
- Predict extrauterine congenital malformations which coexist with uterine malformations.
- Identify the sonographic appearance of ovarian torsion.

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**Patient Preparation**

- Finish 24 oz of fluid 45 minutes before exam
- Demonstrate exam
  - Feel gel
  - Touch transducer
- High frequency transducer

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**Normal Anatomy**

- Mimics adult
- Volumes provide better determination of normalcy
Pelvic Sonogram

Lower Urinary Tract Neoplasm
- Rhabdomyosarcoma
  - Most common urinary tract
  - Highest incidence at 4 – 5 years
- Sonographic appearance
  - Solid mass
  - Anechoic foci due to necrosis or hemorrhage

Lower Urinary Tract Neoplasm
- Uncommon
- Types
  - Transitional cell papilloma
  - Leiomyoma
  - Neurofibroma
  - Fibroma
  - Hemangioma

Uterine and Vaginal Neoplasm
- Benign
  - Most common Gartner's duct cyst
  - Pelvic inflammatory disease
- Malignant
  - Most common rhabdomyosarcoma
  - Endodermal sinus or yolk sac tumors
  - Clear cell adenocarcinoma

Ovarian Neoplasm
- Benign
  - Ovarian cysts most common
  - Benign cystic teratoma
    - Sonographic appearance
      - Mural nodules
      - Posterior shadowing
**Ovarian Neoplasm**

- Malignant
  - Germ cell tumors most common
  - Dysgerminoma
  - Sonographic appearance
    - Color flow within septa
  - Increased chorionic gonadotropin (HCG), lactic dehydrogenase (LDH), alpha-fetoprotein (AFP)

**Turner Syndrome**

- 45, XO karyotype
- Physical characteristics
  - Dwarfism
  - Webbed neck
  - Shield-shaped chest
  - Amenorrhea
  - Infantile sexual development

**Testicular Feminization**

- 46 XY
- Physical characteristics
  - Uterine and vaginal anomalies
  - Normal breast development
  - Little or no pubic / axillary hair
  - Inguinal or abdominal testes
**Ambiguous Genitalia**

- Physical findings
  - Vaginal atresia
  - Fused labia
  - Clitorimegaly
  - Cryptorchidism

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**Precocious Puberty**

- Defined
  - Onset of normal physiologic and endocrine processes of puberty in girls before the age of eight years
- Due to
  - Hypothalamus-pituitary-gonadal axis stimulation
  - Abnormal sex steroid levels
  - Adrenal or ovarian dysfunction

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**Terminology Review**

- Hydro - Water
  - Colpos is distention of the vagina with air, gas or fluid
  - Metra means the uterus
- Hemato - Blood
Hydrocolpos
- Pear-shaped cystic mass in midline
- Internal echoes due to blood or debris
- Due to outlet obstruction

Ovarian Torsion
- Rotation of the ovary on the pedicle
- Right sided predominance
- Occurs in first decade of life