CLINICAL GUIDELINES

Pediatric Pelvis Imaging Policy

Version 1.1

Effective October 1, 2020

eviCore healthcare Clinical Decision Support Tool Diagnostic Strategies:This tool addresses common symptoms and symptom complexes. Imaging requests for individuals with atypical symptoms or clinical presentations that are not specifically addressed will require physician review. Consultation with the referring physician, specialist and/or individual's Primary Care Physician (PCP) may provide additional insight.

Pediatric Pelvis Imaging Guidelines

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Procedure Codes Associated with Pelvis Imaging

MRI	CPT®
MRI Pelvis without contrast	72195
MRI Pelvis with contrast (rarely used)	72196
MRI Pelvis without and with contrast	72197
Unlisted MRI procedure (for radiation planning or surgical software)	76498
MRA	**CPT®**
MRA Pelvis	72198
CT	**CPT®**
CT Abdomen and Pelvis without contrast	74176
CT Abdomen and Pelvis with contrast	74177
CT Abdomen and Pelvis without and with contrast	74178
CT Pelvis without contrast	72192
CT Pelvis with contrast	72193
CT Pelvis without and with contrast	72194
CT Guidance for Needle Placement (Biopsy, Aspiration, Injection, etc.)	77012
CT Guidance for and monitoring of Visceral Tissue Ablation	77013
CT Guidance for Placement of Radiation Therapy Fields	77014
Unlisted CT procedure (for radiation planning or surgical software)	76497
CTA	**CPT®**
CTA Abdomen and Pelvis	74174
CTA Pelvis	72191
Nuclear Medicine	**CPT®**
PET Imaging; limited area (this code not used in pediatrics)	78811
PET Imaging: skull base to mid-thigh (this code not used in pediatrics)	78812
PET Imaging: whole body (this code not used in pediatrics)	78813
PET with concurrently acquired CT; limited area (this code rarely used in pediatrics)	78814
PET with concurrently acquired CT; skull base to mid-thigh	78815
PET with concurrently acquired CT; whole body	78816
Urinary Bladder Residual Study	78730
Ureteral Reflux Study (Radiopharmaceutical Voiding Cystogram)	78740
Testicular Scan – Vascular Flow and Delayed Images	78761
Radiopharmaceutical Imaging of Lymphatic System	78195
Radiopharmaceutical Localization Imaging Limited area	78800
Radiopharmaceutical Localization Imaging Whole Body	78802
Radiopharmaceutical Localization Imaging SPECT	78803

Ultrasound	CPT®
Ultrasound, pelvic (nonobstetric), complete	76856
Ultrasound, pelvic transvaginal	76830
Ultrasound, pelvic (nonobstetric), limited or follow-up	76857
Ultrasound, scrotum and contents	76870
Duplex scan of arterial inflow and venous outflow of abdominal, pelvic, scrotal contents and/or retroperitoneal organs; complete study	93975
Duplex scan of arterial inflow and venous outflow of abdominal, pelvic, scrotal contents and/or retroperitoneal organs; limited study	93976
Duplex scan of aorta, inferior vena cava, iliac vasculature, or bypass grafts; complete	93978
Duplex scan of aorta, inferior vena cava, iliac vasculature, or bypass grafts; limited	93979
Duplex scan of arterial inflow and venous outflow of penile vessels; complete	93980
Duplex scan of arterial inflow and venous outflow of penile vessels; limited study	93981

PEDPV-1: General Guidelines

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PEDPV-1.0: General Guidelines

- A recent (within 60 days) face to face evaluation including a detailed history, physical examination, and appropriate laboratory studies should be performed prior to considering the use of an advanced imaging (CT, MRI, Nuclear Medicine) procedure. An exception can be made if the patient is undergoing guideline-supported, scheduled follow-up imaging evaluation.
- Unless otherwise stated in a specific guideline section, the use of advanced imaging to screen asymptomatic patients for disorders involving the pelvis is not supported. Advanced imaging of the pelvis should only be approved in patients who have documented active clinical signs or symptoms of disease involving the pelvis.
- Unless otherwise stated in a specific guideline section, repeat imaging studies of the pelvis are not necessary unless there is evidence for progression of disease, new onset of disease, and/or documentation of how repeat imaging will affect patient management or treatment decisions.
- Ultrasound
  - Ultrasound should be the initial imaging in most pelvic conditions to rule out those situations that do not require additional advanced imaging.
  - For those patients who do require advanced imaging after ultrasound, ultrasound can be very beneficial in selecting the proper modality, body area, image sequences, and contrast level that will provide the most definitive information for the patient.
  - CPT® codes vary by body area and presence or absence of Doppler imaging and are included in the table at the beginning of this guideline.
  - Transabdominal ultrasound is appropriate in all pediatric patients.
  - Transvaginal (TV) ultrasound is appropriate in pediatric patients who are sexually active or use a tampon and consent to the study. Ultrasound (complete CPT® 76856 or, limited CPT® 76857) should substitute for TV in pediatric patients or non-sexually active adult females.

PEDPV-1.1: Pediatric Pelvis Imaging Age Considerations

Many conditions affecting the pelvis in the pediatric population are different diagnoses than those occurring in the adult population. For those diseases which occur in both pediatric and adult populations, minor differences may exist in management due to patient age, comorbidities, and differences in disease natural history between children and adults.

- Patients who are <18 years old should be imaged according to the Pediatric Pelvis Imaging Guidelines and patients who are ≥18 years should be imaged according to the **Adult Pelvis Imaging Guidelines**, except where directed otherwise by a specific guideline section.

PEDPV-1.2: Pediatric Pelvis Imaging Appropriate Clinical Evaluation

- See **PEDPV-1.0: General Guidelines**

PEDPV-1.3: Pediatric Pelvis Imaging Modality General Considerations

- Ultrasound
  - See **PEDPV-1.0: General Guidelines**
- MRI
  - MRI Pelvis is generally performed without and with contrast (CPT® 72197) unless the patient has a documented contraindication to gadolinium or otherwise stated in a specific guideline section.
  - Due to the length of time required for MRI acquisition and the need to minimize patient movement, anesthesia is usually required for almost all infants (except neonates) and young children (age <7 years) as well as older children with delays in development or maturity. This anesthesia may be administered via oral or intravenous routes. In this patient population, MRI sessions should be planned with a goal of minimizing anesthesia exposure by adhering to the following considerations:
    - MRI procedures can be performed without and/or with contrast use as supported by these condition-based guidelines. If intravenous access will already be present for anesthesia administration and there is no contraindication for using contrast, imaging without and with contrast may be appropriate if requested. By doing so, the requesting provider may avoid repetitive anesthesia administration to perform an MRI with contrast if the initial study without contrast is inconclusive.
      - Recent evidence based literature demonstrates the potential for gadolinium deposition in various organs including the brain, after the use of MRI contrast.
      - The U.S. Food and Drug Administration (FDA) has noted that there is currently no evidence to suggest that gadolinium retention in the brain is harmful and restricting gadolinium-based contrast agents (GBCAs) use is not warranted at this time. It has been recommended that GBCA use should be limited to circumstances in which additional information provided by the contrast agent is necessary and the necessity of repetitive MRIs with GBCAs should be assessed.
    - If multiple body areas are supported by eviCore guidelines for the clinical condition being evaluated, MRI of all necessary body areas should be obtained concurrently in the same anesthesia session.
  - The presence of surgical hardware or implanted devices may preclude MRI.
  - The selection of best examination may require coordination between the provider and the imaging service.
- CT
  - CT Pelvis typically extends from the iliac crest to the ischial tuberosities, and CT Abdomen and Pelvis extends from the dome of the diaphragm through the ischial tuberosities.
    - In general, CT Pelvis is appropriate when evaluating solid pelvic organs.
    - In general, CT Abdomen and Pelvis is appropriate when evaluating inflammatory or infections processes, hematuria, or conditions which appear to involve both the abdomen and the pelvis.

        - In some cases, especially in follow-up of a known finding, it may be appropriate to limit the exam to the region of concern to reduce radiation exposure.
    - The contrast level in pediatric CT imaging is specific to the clinical indication, as listed in the specific guideline sections.
    - CT Pelvis or Abdomen and Pelvis may be indicated for further evaluation of abnormalities suggested on prior US or MRI Procedures.
    - CT may be appropriate without prior MRI or US, as indicated in specific sections of these guidelines.
    - CT should not be used to replace MRI in an attempt to avoid sedation unless listed as a recommended study in a specific guideline section.
    - The selection of best examination may require coordination between the provider and the imaging service.
- Nuclear Medicine
    - Nuclear medicine studies are rarely used in imaging of the pediatric pelvis, but are indicated in rare circumstances, including the following:
        - Lymph system mapping (CPT® 78195) is indicated for lower extremity lymphedema with recent negative Doppler ultrasound, or a history of Milroy's disease or prior pelvic lymph node dissection.

The guidelines listed in this section for certain specific indications are not intended to be all-inclusive; clinical judgment remains paramount and variance from these guidelines may be appropriate and warranted for specific clinical situations.

References

1. Berland LL, Cernigliaro JG, Ho VB, et al. ACR Practice parameter for performing and interpreting magnetic resonance imaging (MRI). American College of Radiology. Revised 2017.
2. Faerber EN, Abramson SJ, Benator RM, et al. ACR–ASER–SCBT-MR–SPR Practice parameter for the performance of pediatric computed tomography (CT). American College of Radiology. Revised 2014.
3. Ing C, Dimaggio C, Whitehouse A, et al. Long-term Differences in Language and Cognitive Function After Childhood Exposure to Anesthesia. *Pediatrics*. 2012;130(3). doi:10.1542/peds.2011-3822.
4. Monteleone M, Khandji A, Cappell J, Lai WW, Biagas K, Schleien C. Anesthesia in Children. *Journal of Neurosurgical Anesthesiology*. 2014;26(4):396-398. doi:10.1097/ana.0000000000000124.
5. Dimaggio C, Sun LS, Li G. Early Childhood Exposure to Anesthesia and Risk of Developmental and Behavioral Disorders in a Sibling Birth Cohort. *Anesthesia & Analgesia*. 2011;113(5):1143-1151. doi:10.1213/ane.0b013e3182147f42.
6. Macdonald A, Burrell S. Infrequently Performed Studies in Nuclear Medicine: Part 2. Journal of Nuclear Medicine Technology. 2009;37(1):1-13. doi:10.2967/jnmt.108.057851.
7. FDA Drug Safety Communication: FDA identifies no harmful effects to date with brain retention of gadolinium-based contrast agents for MRIs; review to continue. FDA Drug Safety Communication. May 22, 2017.
8. Siegel MJ. Pediatric Sonography. 5th ed. Philadelphia: Wolters Kluwer. p 513-556.

PEDPV-2: Abnormal Uterine Bleeding

- Abnormal uterine bleeding imaging indications in pediatric patients are very similar to those for adult patients. See **PV-2: Abnormal Uterine Bleeding** in the Pelvis Imaging Guidelines.
- The causes of vaginal bleeding in children differ from those in adolescents. Vaginal bleeding after the first week or so of life but before menarche is always abnormal and warrants evaluation. Common conditions before normal menarche include vaginal foreign bodies, infections, precocious puberty, and estrogen exposure. After menarche, pregnancy and excessive menstrual bleeding (dysfunction) must be considered.
- Pediatric-specific imaging considerations include the following:
  - Transabdominal ultrasound is appropriate in all pediatric patients.
  - Transvaginal (TV) ultrasound is appropriate in pediatric patients who are sexually active or use a tampon and consent to the study. Transvaginal ultrasound is generally not appropriate in pediatric patients or in patients who have never been sexually active.
  - MRI Pelvis without contrast or without and with contrast (CPT® 72195 or CPT® 72197) is indicated if ultrasound is inconclusive.

References

1. Mansfield MJ. Precocious puberty. Pediatric and adolescent gynecology. eds. Emans SJ and Laufer MR. Philadelphia, PA. Lippincott Williams & Wilkins, 6th ed. 2012; 114-124.
2. Sucato GS and Burstein GR. Abnormal Uterine Bleeding. *Nelson Textbook of Pediatrics, chapter 116*. eds. Kliegman RM, Stanton BF, St. Geme JW III, et al. 20th edition 2016; 965-967.

PEDPV-3: Pelvic Inflammatory Disease (PID)

- Pelvic inflammatory disease imaging indications in pediatric patients are very similar to those for adult patients. See **PV-7: Pelvic Inflammatory Disease (PID)** in the Pelvis Imaging Guidelines.
- Pediatric-specific imaging considerations include the following:
  - Transabdominal ultrasound is appropriate in all pediatric patients.
  - Transvaginal (TV) ultrasound is appropriate in pediatric patients who are sexually active or use a tampon and consent to the study. Transvaginal ultrasound is generally not appropriate in patients who are pre-pubescent or victims of abuse.
  - MRI Pelvis without contrast (CPT® 72195) or without and with contrast (CPT® 72197) is indicated if US is inconclusive.
  - CT Pelvis with contrast (CPT® 72193) is indicated if MRI is not readily available.

Reference

1. Burstein GR. Sexually transmitted infections. *Nelson Textbook of Pediatrics*, chapter 120. eds Kliegman RM, Stanton BF, St. Geme JW III, et al. 20th edition 2016; 985-995.

PEDPV-4: Amenorrhea

- Girls with primary amenorrhea and any of the following should be evaluated initially with pelvic ultrasound (CPT® 76856 or CPT® 76857):
  - Amenorrhea is usually primary and refers to absence of menstrual periods by age 16.
    - Normal pubertal development and negative pregnancy test.
    - Transabdominal ultrasound is appropriate in all pediatric patients.
      - Transvaginal (TV) ultrasound is appropriate in pediatric patients who are sexually active or use a tampon and consent to the study. Transvaginal ultrasound (CPT® 76830) can also be approved if requested for better view of genitourinary anomalies in sexually active females.
    - Delayed puberty with follicle-stimulating hormone (FSH) or luteinizing hormone (LH) that is elevated for the patient's age and Tanner stage.
- MRI Pelvis without contrast or without and with contrast (CPT® 72195 or CPT® 72197) +/- MRI Abdomen without contrast or without and with contrast (CPT® 74181 or CPT® 74183) are indicated for the following:
  - Evaluation of congenital anomalies of the uterus and/or urinary system identified on abdominal and pelvic ultrasound (CPT® 76700 and CPT® 76856) in order to better define complex anatomy.
  - Preoperative planning in girls with distention of the vagina by fluid (hydrocolpos) or blood (hematocolpos) due to congenital vaginal obstruction.

References

1. Langer JE, Oliver ER, Lev-Toaff AS, Coleman BG. Imaging of the Female Pelvis through the Life Cycle. *RadioGraphics*. 2012;32(6):1575-1597. doi:10.1148/rg.326125513.
2. Suscato GS and Burstein GR. Amenorrhea. *Nelson Textbook of Pediatrics, chapter 116.* eds Kliegman RM, Stanton BF, St. Geme JW III, et al. 20th edition. 2016; 963-965.
3. Cohen HL and Raju AD. Amenorrhea and abnormalities of puberty. *Caffey's Pediatric Diagnostic Imaging*, chapter 128. eds Brian Coley, Elsevier Saunders, Philadelphia PA, 12th edition. 2013; 12.
4. Behr SC, Courtier JL, Qayyum A. Imaging of Müllerian Duct Anomalies. *RadioGraphics*. 2012;32(6). doi:10.1148/rg.326125515.

PEDPV-5: Endometriosis

- Endometriosis imaging indications in pediatric patients are very similar to those for adult patients. See **PV-6: Endometriosis** in the Pelvis Imaging Guidelines.
- Pediatric-specific imaging considerations include:
  - Transabdominal ultrasound is appropriate in all pediatric patients.
  - Transvaginal (TV) ultrasound is appropriate in pediatric patients who are sexually active or use a tampon and consent to the study. Transvaginal ultrasound is generally not appropriate in patients who are pre-pubescent or have never been sexually active.

Reference

1. Suscato GS and Burstein GR. Dysmenorrhea. *Nelson Textbook of Pediatrics,* chapter 116. eds Kliegman RM, Stanton BF, St. Geme JW III, et al. 20th edition 2016; 967-968.

PEDPV-6: Suspected Adnexal Mass

- Suspected adnexal mass imaging indications in pediatric patients are very similar to those for adult patients. See **PV-5: Adnexal Mass/Ovarian Cysts** in the Pelvis Imaging Guidelines. Ultrasound is the first study indicated for evaluation of a suspected adnexal mass.
- Pediatric-specific imaging considerations include the following:
  - Transabdominal ultrasound is appropriate in all pediatric patients.
  - Transvaginal (TV) Ultrasound is appropriate in pediatric patients who are sexually active or use a tampon and consent to the study. Transvaginal ultrasound is generally not appropriate in patients who are pre-pubescent or have never been sexually active.
  - Adnexal masses with a solid component in patients, age ≥15 years, should be imaged according to **PEDONC-10: Pediatric Germ Cell Tumors** in the Pediatric Oncology Imaging Guidelines.

References

1. Allen-Rhoades WA and Steuber CP. Clinical assessment and differential diagnosis of the child with suspected cancer. Principles and Practice of Pediatric Oncology, chapter 6. eds. Pizzo PA and Poplack DG, 2016; 7:101-111.
2. Kelleher CM, Goldstein AM. Adnexal Masses in Children and Adolescents. Clinical Obstetrics and Gynecology. 2015;58(1):76-92. doi:10.1097/grf.0000000000000084.

PEDPV-7: Pelvic Pain/Dyspareunia, and Ovarian Torsion

- Pelvic Pain/Dyspareunia imaging indications in pediatric patients are identical to those for adult patients. See **PV-11: Pelvic Pain/Dyspareunia, Female** in the Pelvis Imaging Guidelines.
- Ovarian torsion in children is typically associated with a normal ovary. Spontaneous torsion of a normal ovary is more common than torsion caused by a lead mass, such as a cyst or tumor. Torsion involves both the ovary and fallopian tube and typically presents with acute of onset of lower abdominal pain, often associated with nausea or vomiting.
  - Transabdominal ultrasound is appropriate in all pediatric patients.
  - Transvaginal (TV) ultrasound is appropriate in pediatric patients who are sexually active or use a tampon and consent to the study. Transvaginal ultrasound is generally not appropriate in patients who are pre-pubescent or have never been sexually active.

Reference

1. Naffaa L, Deshmukh T, Tumu S, Johnson C, Boyd KP, Meyers AB. Imaging of Acute Pelvic Pain in Girls: Ovarian Torsion and Beyond ☆. Current Problems in Diagnostic Radiology. 2017;46(4):317-329. doi:10.1067/j.cpradiol.2016.12.010.
2. Siegel MJ. Pediatric Sonography. 5th ed. Philadelphia: Wolters Kluwer. p 513-556.
3. Sintim-Damoa A, Majmudar AS, Cohen HL, Parvey LS. Pediatric Ovarian Torsion: Spectrum of Imaging Findings. RadioGraphics. 2017;37(6):1892-1908. doi:10.1148/rg.2017170026.

PEDPV-8: Polycystic Ovary Syndrome

- Polycystic ovary syndrome imaging indications in pediatric patients are identical to those for adult patients. See **PV-8: Polycystic Ovary Syndrome** in the Pelvis Imaging Guidelines.

Reference

1. Fondin M, Rachas A, Huynh V, et al. Polycystic Ovary Syndrome in Adolescents: Which MR Imaging–based Diagnostic Criteria? Radiology. 2017;285(3):961-970. doi:10.1148/radiol.2017161513.

PEDPV-9: Periurethral Cysts and Urethral Diverticula

- Periurethral cysts and urethral diverticula imaging indications in pediatric patients are identical to those for adult patients. See **PV-13: Periurethral Cysts and Urethral Diverticula** in the Pelvis Imaging Guidelines.

PEDPV-10: Fetal MRI

- Fetal MRI indications in pediatric patients are identical to those for adult patients. See **PV-15: Fetal MRI** in the Pelvis Imaging Guidelines.

PEDPV-11: Undescended Testis

- Boys with a history of cryptorchidism (undescended testis) have a several-fold risk increase of testicular cancer. It is important to diagnose and treat this condition either by bringing the undescended testis into the scrotum, or resecting the testis.
- Pediatric-specific imaging considerations include the following:
- Suspected undescended testis is an indication for referral to a surgical subspecialist who should make the decision on necessary imaging studies.
- The following imaging is indicated for boys with suspected undescended testis based on a recent detailed physical exam.
  - Scrotal ultrasound (CPT® 76870) if testis not palpable in the scrotal sac and there is concern for retractile or inguinal testis,
    - If ultrasound is inconclusive, either of the following may be approved:
      - MRI Abdomen (CPT® 74183) and Pelvis (CPT® 72197) without and with contrast, however MRI has a high false negative rate.
      - CT Abdomen and Pelvis with contrast (CPT® 74177).

References

1. Kolon TF, Herndon CDA, Baker LA, et al. Evaluation and treatment of cryptorchidism: AUA Guideline, Copyright © 2014 American Urological Association Education and Research, Inc.®.
2. Inappropriate Use of Ultrasound in Management of Pediatric Cryptorchidism. Pediatrics. 2015;136(3). doi:10.1542/peds.2015-0222d.
3. Elder JS. Disorders and anomalies of the scrotal contents. Nelson Textbook of Pediatrics, chapter 545. eds Kliegman RM, Stanton BF, St. Geme JW III, et al.20th edition 2016; 2592-2598.
4. Poppas DP and Medina C. Undescended testicle or cryptorchidism. Cornell University Institute for Pediatric Urology.
5. Krishnaswami S, Fonnesbeck C, Penson D, Mcpheeters ML. Magnetic Resonance Imaging for Locating Nonpalpable Undescended Testicles: A Meta-analysis. Pediatrics. 2013;131(6). doi:10.1542/peds.2013-0073.
6. Aggarwal H, Rehfuss A, Hollowell J. Management of undescended testis may be improved with educational updates for referring providers. Journal of Pediatric Urology. 2014;10(4):707-711. doi:10.1016/j.jpurol.2013.10.025.

PEDPV-12: Scrotal Pathology

- Scrotal pathology imaging indications in pediatric patients are very similar to those for adult patients. See **PV-20: Scrotal Pathology** in the Pelvis Imaging Guidelines.
- Pediatric-specific imaging considerations include the following:
  - Scrotal US (CPT® 76870) with Doppler (CPT® 93975 or CPT® 93976) is indicated for concerns of testicular torsion.
  - MRI is not typically used for the acute scrotum due to the limited availability of equipment and the long examination time involved. However, MRI Pelvis without (CPT® 72195) or without and with (CPT® 72197) contrast is indicated if torsion is unlikely on ultrasound and no surgical exploration is planned.
  - Since the acceptance of Doppler US as the primary imaging for evaluation of acute scrotum, scintigraphy is not indicated. The unavailability of nuclear medicine imaging in many practices and its use of ionizing radiation, its poor anatomical details, and the time required for imaging are other limiting factors

References

1. ACR Appropriateness Criteria®. American College of Radiology. 2018.
2. Elder JS. Disorders and anomalies of the scrotal contents. Nelson Textbook of Pediatrics, chapter 545. eds Kliegman RM, Stanton BF, St. Geme JW III, et al. 20th edition 2016;2592-2598.
3. Macdonald A, Burrell S. Infrequently Performed Studies in Nuclear Medicine: Part 2. Journal of Nuclear Medicine Technology. 2009;37(1):1-13. doi:10.2967/jnmt.108.057851.
4. Tekgül S, Riedmiller H, Gerharz E, et al. Guidelines on paediatric urology. European Association of Urology. Revised March 2013.
5. Alkhori NA, Barth RA. Pediatric scrotal ultrasound: review and update. Pediatric Radiology. 2017;47(9):1125-1133. doi:10.1007/s00247-017-3923-9.

PEDPV-13: Penis-Soft Tissue Mass

- Penile soft tissue masses are very rare in pediatric patients, and imaging indications are identical to those for adult patients. See **PV-18: Penis–Soft Tissue Mass** in the Pelvis Imaging Guidelines.

PEDPV-14: Incontinence

- Incontinence imaging indications in pediatric patients are very similar to those for adult patients. See **PV-22: Urinary Incontinence/Pelvic Prolapse/Fecal Incontinence** in the Pelvis Imaging Guidelines.
- Most often incontinence in children is not due to a medical condition. Several uncommon disorders that can lead to urinary incontinence include a spinal cord defect such as spina bifida, ureteral duplication with ectopic insertion, and overactive bladder or dysfunctional voiding.
- No imaging is needed if primary enuresis is suspected; however, imaging evaluation may be warranted if ureteral duplication or overactive bladder or dysfunctional voiding is suspected. The physician should obtain a full medical history and urinalysis before imaging is done.
- Radiopharmaceutical urinary bladder residual study (CPT® 78730) is indicated for suspicion of urinary retention and a recent non-diagnostic ultrasound.
- Pediatric-specific imaging considerations include the following:
  - MRI Pelvis without and with contrast (CPT® 72197) is indicated if ultrasound is inconclusive or spinal abnormality is suspected.
  - CT Pelvis with contrast (CPT® 72193) is approvable if MRI is not readily available.

References

1. Elder JS. Enuresis and voiding dysfunction. *Nelson Textbook of Pediatrics. Chapter 543*. eds Kliegman RM, Stanton BF, St. Geme JW III, et al. 20th edition 2016;2581-2586.
2. Mandell GA, Eggli DF, Gilday DL, et al. Procedure guideline for radionuclide cystography in children. *Society of Nuclear Medicine*. Version 3.0 approved January 2003.
3. Peters CA, Skoog SJ, Arant BS, et al. Management and screening of primary vesicoureteral reflux in children: AUA guideline 2010. *American Urological Association*.
4. Fettich J, Colarinha P, Fischer S, et al. Guidelines for direct radionuclide cystography in children. *Paediatric Committee of the European Association of Nuclear Medicine*. Dec 2002.

PEDPV-15: Patent Urachus

- Ultrasound pelvis (CPT® 76856) is indicated as the initial evaluation for patent urachus.
  - ANY of the following are indicated if the ultrasound is inconclusive or insufficient for preoperative planning:
    - MRI Pelvis without contrast (CPT® 72195)
    - MRI Pelvis without and with contrast (CPT® 72197)
    - CT Pelvis with contrast (CPT® 72193)
- Repeat imaging of asymptomatic patients is not generally necessary, but is indicated for the following:
  - New or worsening symptoms
  - Preoperative planning

Practice Note

The urachus is a “tube” connecting the fetal bladder to the umbilical cord. It is usually obliterated during fetal growth, but if it remains patent, there can be a complete or partial connection between the bladder and the umbilicus.

Ultrasound has an accuracy greater than 90%.

References

1. Villavicencio CP, Adam SZ, Nikolaidis P, Yaghmai V, Miller FH. Imaging of the Urachus: Anomalies, Complications, and Mimics. *RadioGraphics*. 2016;36(7):2049-2063. doi:10.1148/rg.2016160062.
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4. Yiee JH, Garcia N, Baker LA, Barber R, Snodgrass WT, Wilcox DT. A diagnostic algorithm for urachal anomalies. *Journal of Pediatric Urology*. 2007;3(6):500-504. doi:10.1016/j.jpurol.2007.07.010.
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