MRI Pelvis

CPT: 72195, 72196, 72197

1.7 Infertility

1.7.1 Adenomyosis suspected

1.7.1.1 Dysmenorrhea

1.7.1.2 Enlarged uterus by PE or US

1.7.1.3 Infertility

1.7.1.4 Pelvic pain

1.7.1.5 Uterine bleeding

References:

1. Doherty and Way, eds; Current Surgical Dianosis and Treatment, 12th Ed.; Chapter 41 Gynecology Edw Hill and Elena Gates

1.7.2 Endometriosis suspected

1.7.2.1 Dysmennorrhea with onset in the 20s or 30s

1.7.2.2 Dyspareunia

1.7.2.3 Pain, usually pelvic but can be in other locations

1.7.2.4 Painful defecation

1.8 Pain, Pelvis

1.8.1 Adenomyosis suspected

1.8.1.1 Dysmenorrhea

1.8.1.2 Enlarged uterus by PE or US

1.8.1.3 Infertility

1.8.1.4 Pelvic pain

1.8.1.5 Uterine bleeding

References:

1. Doherty and Way, eds; Current Surgical Dianosis and Treatment, 12th Ed.; Chapter 41 Gynecology Edw Hill and Elena Gates

1.8.2 Endometriosis suspected

1.8.2.1 Dysmennorrhea with onset in the 20s or 30s

1.8.2.2 Dyspareunia

1.8.2.3 Pain, usually pelvic but can be in other locations

1.8.2.4 Painful defecation

1.9 Rectal pain

1.9.1 Fistula suspected

1.9.2 Endometriosis suspected

1.9.2.1 Dysmennorrhea with onset in the 20s or 30s

1.9.2.2 Dyspareunia

1.9.2.3 Pain, usually pelvic but can be in other locations

1.9.2.4 Painful defecation

1.10 Uterine bleeding

1.10.1 Ultrasound nondiagnostic

2 Working Diagnosis or Rule Out presented as primary indication

2.1 Abscess, suspected (Pelvic Inflammatory Disease, PID)

2.1.1 Abdominal or pelvic pain

2.1.2 Chills

2.1.3 Fever

2.1.4 Leukocytosis

2.1.5 Mass by physical examination or US

2.1.6 Purulent Discharge (cervical or vaginal)

2.1.7 Tenderness, pelvic, adnexal or cervical

References:

1. Simms, I, Warburton, F, Westrom, L Diagnosis of pelvic inflammatory disease: time for a rethink Sex Transm Inf, Dec 2003; 79: 491 – 494.
2. C Marks, R L Tideman, C S Estcourt, G Berry, and A Mindel Assessment of risk for pelvic inflammatory disease in an urban sexual health population Sex Transm Inf, Dec 2000; 76: 470 – 473.

2.2 Adenomyosis Endometrial extension into the myometrium, cause unknown.

2.2.1 Dysmenorrhea

2.2.2 Enlarged uterus by PE or US

2.2.3 Infertility

2.2.4 Pelvic pain

2.2.5 Uterine bleeding

References:

1. Doherty and Way, eds; Current Surgical Dianosis and Treatment, 12th Ed.; Chapter 41 Gynecology Edw Hill and Elena Gates

2.3 Aneurysm, suspected rupture

2.3.1 Acute onset of pain

2.3.2 Falling blood pressure

2.3.3 Shock

2.4 Arcuate Uterus

2.4.1 Ultrasound nondiagnostic

2.5 Bicornuate uterus

2.5.1 Ultrasound nondiagnostic

2.6 Didelphic uterus

2.6.1 Ultrasound nondiagnostic

2.7 Endometriosis Endometriosis is the presence of endometrial tissue in extauterine sites. Most frequently in the pelvis

2.7.1 Dysmennorrhea with onset in the 20s or 30s

2.7.2 Dyspareunia

2.7.3 Pain, usually pelvic but can be in other locations

2.7.4 Painful defecation

2.8 Hernia, femoral or inguinal suspected

2.8.1 Groin bulging

2.8.2 Local groin pain

References:

1. Schwartz's Principles of Surgery, 8th Edition F. Charles Brunicardi, Chapter 36. Inguinal Hernias Robert J. Fitzgibbons, Jr., Charles J. Filipi, Thomas H. Quinn
2. Elsayes, Khaled M., Staveteig, Paul T., Narra, Vamsidhar R., Leyendecker, John R., Lewis, James S., Jr., Brown, Jeffrey J. MRI of the Peritoneum: Spectrum of Abnormalities Am. J. Roentgenol. 2006 186: 1368-1379
3. RSNA Education Exhibits: Priya R. Bhosale, Madhavi Patnana, Chitra Viswanathan, and Janio Szklaruk The Inguinal Canal: Anatomy and Imaging Features of Common and Uncommon Masses Radiographics May-June 2008 28:819-835;

2.9 LumboSacral Plexus Pathology (Plexopathy)

2.9.1 Insidious onset of radicular pain and weakness

2.9.1.1 History of Breast or Lung cancer

2.9.1.2 History of radiation therapy to the lumbosacral spine

2.9.2 Incontinence

2.9.3 Numbness

2.9.4 Paresthesias

2.9.5 Radiating pain

2.9.6 Weakness of lower extremity

References:

1. Devin K. Binder, M.D., Ph.D.; Justin S. Smith, M.D., Ph.D.; Nicholas M. Barbaro, M.D Primary Brachial Plexus Tumors: Imaging, Surgical, and Pathological Findings in 25 Patients Neurosurgical Focus Medscape Radiology accessed 12/28/08
2. Bowen B, Seidenwurm DJ, Davis P, et al, Expert Panel on Neurologic Imaging, American College of Radiology, Appropriateness Criteria, Plexopathy, accessed at http://www.acr.org/SecondaryMainMenuCategories/quality_safety/app_criteria/pdf/ExpertPanelonNeurologicImaging/PlexopathyDoc12.asp 12/28/08
3. ACR Appropriateness Criteria Plexopathy p10 Accessed 12/28/08
4. Jaeckle KA, Young DF, Foley KM. The natural history of lumbosacral plexopathy in cancer. Neurology. 1985;35:8-15
5. Dahele M, Davey P, Reingold S, et al. Radiation-induced lumbo-sacral plexopathy (RILSP): an important enigma. Clin Oncol (R Coll Radiol). Jun 2006;18(5):427-8.

2.10 Meralgia paresthetica

2.10.1 Numbness and/or dysesthesias of the thigh

2.10.2 Refractory to attempted treatment with NSAIDs or injection

References:

1. Tintinalli's Emergency Medicine: A Comprehensive Study Guide, 6th Edition Judith E. Tintinalli, MD, MS, et al; Chapter 233. Acute Peripheral Neurologic Lesions Michael M. Wang
2. Jiang, GX, Xu, WD, Wang, AH Spinal stenosis with meralgia paraesthetica J Bone Joint Surg Br 1988 70-B: 272-273

2.11 Metastatic disease

2.11.1 Known malignancy elsewhere

2.11.1.1 New pelvic symptoms or findings

2.12 Myomatous uterus

2.12.1 Ultrasound nondiagnostic

2.13 Osteomyelitis suspected

2.13.1 Pain or Fever AND One

2.13.1.1 C reactive Protein elevated

2.13.1.2 Elevated ESR

2.13.1.3 Fever

2.13.1.4 Leukocytosis

2.13.1.5 Positive Blood Cultures

References:

1. Parsonnet Jeffrey, “Chapter 120. Osteomyelitis” (Chapter). Fauci AS, Braunwald E, Kasper DL, Hauser SL, Longo DL, Jameson JL, Loscalzo J: Harrison’s Principles of Internal Medicine, 17th Edition: http://www.accessmedicine.com/content.aspx?aID=2893649.
2. Alok Kapoor, Stephanie Page, Michael LaValley, Daniel R. Gale, and David T. Felson Magnetic Resonance Imaging for Diagnosing Foot Osteomyelitis: A Meta-analysis Arch Intern Med, Jan 2007; 167: 125 – 132.
3. J. Herman Kan, Melissa A. Hilmes, Jeffrey E. Martus, Chang Yu, and Marta Hernanz-Schulman Value of MRI After Recent Diagnostic or Surgical Intervention in Children with Suspected Osteomyelitis Am. J. Roentgenol., Nov 2008; 191: 1595 – 1600.
4. Kuo-Chen Lee, Yi-Ting Tsai, Chih-Yuan Lin, and Chien-Sung Tsai Vertebral osteomyelitis combined streptococcal viridans endocarditis Eur. J. Cardiothorac. Surg., Jan 2003; 23: 125.
5. D Allen, S Ng, K Beaton, and D Taussig Sternal osteomyelitis caused by Aspergillus fumigatus in a patient with previously treated Hodgkin’s disease J. Clin. Pathol., Aug 2002; 55: 616 – 618.
6. M Ida, H Watanabe, A Tetsumura, and T Kurabayashi CT findings as a significant predictive factor for the curability of mandibular osteomyelitis: multivariate analysis Dentomaxillofac. Radiol., Mar 2005; 34: 86 – 90.
7. Jyri K. Koort, Tatu J. Mäkinen, Juhani Knuuti, Jari Jalava, and Hannu T. Aro Comparative 18F-FDG PET of Experimental Staphylococcus aureus Osteomyelitis and Normal Bone Healing J. Nucl. Med., Aug 2004; 45: 1406 – 1411.
8. Susan A. Connolly, Leonard P. Connolly, Laura A. Drubach, David Zurakowski, and Diego Jaramillo MRI for Detection of Abscess in Acute Osteomyelitis of the Pelvis in Children Am. J. Roentgenol., Oct 2007; 189: 867 – 872.

2.14 Sacroileitis

2.14.1 Low back pain

2.14.1.1 Failed Conservative Management

2.15 Septate or subseptate uterus

2.15.1 Ultrasound nondiagnostic

2.16 Suspected fracture, routine imaging nondiagnostic

2.17 Suspected Prostate Cancer

2.17.1 Elevated PSA (prostate-specific antigen) level (> 4.0 ng/mL) and negative prostate biopsy

2.17.2 Planning of ultrasound biopsy using MRI/US fusion

2.17.3 Mass on digital rectal exam

2.17.4 Positive prostate biopsy with need for extent of disease evaluation and no prior MRI pelvis exam

References:

1. Eberhardt SC, Carter S, Casalino DD, et al. Expert panels on urologic imaging and radiation oncology-prostate, American College of Radiology Appropriateness criteria- Prostate cancer-pretreatment detection staging and surveillance, accessed at
2. Casalino DD, Remer EM, Arellano RS,, et al. Expert Panel on Urologic Imaging and Radiation Oncology????Prostate. American College of Radiology ACR Appropriateness Criteria ???? Post treatment follow up of prostate cancer accessed at . http://www.acr.org/~/media/ACR/Documents/AppCriteria/Diagnostic/PostTreatmentFollowUpProstateCancer.pdf
3. Casalino DD, Remer EM, Arellano RS,, et al. Expert Panel on Urologic Imaging and Radiation Oncology????Prostate. American College of Radiology ACR Appropriateness Criteria ???? Post treatment follow up of prostate cancer accessed at . http://www.acr.org/~/media/ACR/Documents/AppCriteria/Diagnostic/PostTreatmentFollowUpProstateCancer.pdf
4. Mohler JL, Kantoff PW, Armstrong AJ, et al. National Comprehensive Cancer Network (NCCN) Guideline Version 1.2014. Prostate Cancer.

3 Abnormal Physical Exam Finding presented as primary indication

3.1 Fistula

References:

1. Regina G. H. Beets-Tan, Geerard L. Beets, Arthur Gerritsen van der Hoop, Alfons G. H. Kessels, Roy F. A. Vliegen, Cor G. M. I. Baeten, and Jos M. A. van Engelshoven Preoperative MR Imaging of Anal Fistulas: Does It Really Help the Surgeon? Radiology 2001 218: 75-84.
2. Gordon N. Buchanan, Steve Halligan, Clive I. Bartram, Andrew B. Williams, Danilo Tarroni, and C. Richard G. Cohen Clinical Examination, Endosonography, and MR Imaging in Preoperative Assessment of Fistula in Ano: Comparison with Outcome-based Reference Standard Radiology 2004 233: 674-681; Article recommends endoscopic sonography as an alternative
3. John Morris, John A. Spencer, and N. Simon Ambrose MR Imaging Classification of Perianal Fistulas and Its Implications for Patient Management Radiographics March 2000 20:623-635

3.2 Mass by Physical Exam or prior imaging

3.2.1 US nondiagnostic

3.3 Tenderness, Pelvic

3.3.1 Abscess, suspected (Pelvic Inflammatory Disease, PID)

3.3.1.1 Abdominal or pelvic pain

3.3.1.2 Chills

3.3.1.3 Fever

3.3.1.4 Leukocytosis,

3.3.1.5 Mass by physical examination or US

3.3.1.6 Purulent Discharge (cervical or vaginal)

3.4 Uterine enlargement

3.4.1 Ultrasound not diagnostic

4 Abnormal Lab or Imaging presented as primary indication

4.1 Leukocytosis

4.1.1 Abdominal or Pelvic pain

4.1.2 Fever

4.1.3 US nondiagnostic

4.2 Pelvic Mass on Prior Imaging

4.2.1 Pelvic Ultrasound exam is indeterminate or suspicious

4.3 Uterine anomaly (US nondiagnostic)

4.4 Uterine enlargement

4.4.1 Ultrasound not diagnostic

4.5 Uterine structural abnormality

4.5.1 Ultrasound not diagnostic

5 Significant Prior Medical History presented as primary indication

5.1 Abscess, known

5.1.1 Follow up during or after treatment

5.2 Aneurysm, known, follow up

5.2.1 Interval evaluation after repair of aneurysm

5.2.2 Routine follow up every 6 – 12 months

5.3 Bladder cancer

5.3.1 Staging or restaging

5.4 Cervical cancer

5.4.1 Staging or restaging

5.5 Colon Cancer

5.5.1 Staging or restaging

5.6 Fibroid uterus

5.6.1 Ultrasound nondiagnostic

5.6.2 Prior to embolization or other planned treatment

References

1. Spielmann, Audrey L., Keogh, Ciaran, Forster, Bruce B., Martin, Michael L., Machan, Lindsay S. Comparison of MRI and Sonography in the Preliminary Evaluation for Fibroid Embolization Am. J. Roentgenol. 2006 187: 1499-1504
2. LeBlang, Suzanne D., Hoctor, Katherine, Steinberg, Fred L. Leiomyoma Shrinkage After MRI-Guided Focused Ultrasound Treatment: Report of 80 Patients Am. J. Roentgenol. 2010 194: 274-280

5.7 Osteomyelitis Known

5.7.1 Interval follow up during and after treatment

5.7.2 Preoperative

5.7.3 Worsening clinical situation

References:

1. Parsonnet Jeffrey, “Chapter 120. Osteomyelitis” (Chapter). Fauci AS, Braunwald E, Kasper DL, Hauser SL, Longo DL, Jameson JL, Loscalzo J: Harrison’s Principles of Internal Medicine, 17th Edition: http://www.accessmedicine.com/content.aspx?aID=2893649.
2. Alok Kapoor, Stephanie Page, Michael LaValley, Daniel R. Gale, and David T. Felson Magnetic Resonance Imaging for Diagnosing Foot Osteomyelitis: A Meta-analysis Arch Intern Med, Jan 2007; 167: 125 – 132.
3. J. Herman Kan, Melissa A. Hilmes, Jeffrey E. Martus, Chang Yu, and Marta Hernanz-Schulman Value of MRI After Recent Diagnostic or Surgical Intervention in Children with Suspected Osteomyelitis Am. J. Roentgenol., Nov 2008; 191: 1595 – 1600.
4. Kuo-Chen Lee, Yi-Ting Tsai, Chih-Yuan Lin, and Chien-Sung Tsai Vertebral osteomyelitis combined streptococcal viridans endocarditis Eur. J. Cardiothorac. Surg., Jan 2003; 23: 125.
5. D Allen, S Ng, K Beaton, and D Taussig Sternal osteomyelitis caused by Aspergillus fumigatus in a patient with previously treated Hodgkin’s disease J. Clin. Pathol., Aug 2002; 55: 616 – 618.
6. M Ida, H Watanabe, A Tetsumura, and T Kurabayashi CT findings as a significant predictive factor for the curability of mandibular osteomyelitis: multivariate analysis Dentomaxillofac. Radiol., Mar 2005; 34: 86 – 90.
7. Jyri K. Koort, Tatu J. Mäkinen, Juhani Knuuti, Jari Jalava, and Hannu T. Aro Comparative 18F-FDG PET of Experimental Staphylococcus aureus Osteomyelitis and Normal Bone Healing J. Nucl. Med., Aug 2004; 45: 1406 – 1411.
8. Susan A. Connolly, Leonard P. Connolly, Laura A. Drubach, David Zurakowski, and Diego Jaramillo MRI for Detection of Abscess in Acute Osteomyelitis of the Pelvis in Children Am. J. Roentgenol., Oct 2007; 189: 867 – 872.

5.8 Postoperative

5.8.1 Bleeding

5.8.2 Fever

5.8.3 Leukocytosis

5.8.4 Severe or prolonged pain

5.9 PreOperative

5.9.1 Before Myomectomy or Hysterectomy

5.9.2 Before Uterine Artery Embolization

5.10 Prostate cancer

5.10.1 Positive prostate biopsy for diagnosis of prostate cancer with need for staging or treatment planning and no prior MRI pelvis exam

5.10.2 Following treatment of prostate cancer with clinical concern for residual or recurrent disease

5.10.2.1 Immediately following prostatectomy (removal of prostate gland) with detectable PSA (prostate-specific antigen) level

5.10.2.2 Prior prostatectomy (removal of prostate gland) with rising PSA (prostate-specific antigen)

5.10.2.3 Following radiation therapy with rising PSA (prostate-specific antigen) level or palpable mass on digital rectal exam

5.10.2.4 Following treatment with hormone therapy (androgen deprivation therapy) and rising PSA (prostate-specific antigen) level

References:

1. Eberhardt SC, Carter S, Casalino DD, et al. Expert panels on urologic imaging and radiation oncology-prostate, American College of Radiology Appropriateness criteria- Prostate cancer-pretreatment detection staging and surveillance, accessed at
2. Casalino DD, Remer EM, Arellano RS,, et al. Expert Panel on Urologic Imaging and Radiation Oncology????Prostate. American College of Radiology ACR Appropriateness Criteria ???? Post treatment follow up of prostate cancer accessed at . http://www.acr.org/~/media/ACR/Documents/AppCriteria/Diagnostic/PostTreatmentFollowUpProstateCancer.pdf
3. Casalino DD, Remer EM, Arellano RS,, et al. Expert Panel on Urologic Imaging and Radiation Oncology????Prostate. American College of Radiology ACR Appropriateness Criteria ???? Post treatment follow up of prostate cancer accessed at . http://www.acr.org/~/media/ACR/Documents/AppCriteria/Diagnostic/PostTreatmentFollowUpProstateCancer.pdf
4. Mohler JL, Kantoff PW, Armstrong AJ, et al. National Comprehensive Cancer Network (NCCN) Guideline Version 1.2014. Prostate Cancer.

5.11 Rectal Cancer

5.11.1 Staging or restaging

5.12 Testicular Cancer

5.12.1 Initial staging

5.12.2 Surveillance imaging (SEE ONCOLOGY ROUTINE IMAGING)

5.13 Undescended testicle

References:

1. FritzschePJ, Hricak H, Kogan BA, Winkler ML, Tanagho EA. Undescended testes: the role of MR imaging. Radiology 1987;164:169-173
2. Elder, Jack S. Ultrasonography Is Unnecessary in Evaluating Boys With a Nonpalpable Testis Pediatrics 2002 110: 748-751 The author indicates that imaging was noncontributory in identifying the non-palpable testis, and in determining surgical approach

5.14 Uterine cancer

5.14.1 Staging or restaging

5.14.1.1 Staging or restaging